Appendix A
Results of Air Quality Modeling

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CalEEMod Criteria Pollutant Daily Emission Estimates for the 1996 HPMP

1996 HP Master Plan

Placer County APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	2,661.00	1000sqft	309.36	2,661,000.00	0
Parking Lot	226.30	Acre	226.30	9,857,628.00	0
City Park	45.90	Acre	45.90	1,999,404.00	0
Regional Shopping Center	248.00	1000sqft	28.50	248,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2035
Utility Company	Roseville Electric				
CO2 Intensity (lb/MWhr)	642	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Updated Roseville Electric CO2 intensity factor for 2020

Land Use - Land uses were obtained from Table 9: Current and Proposed Land Use Comparison.

Construction Phase - Assumed construction schedule

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Adjusted worker and vender trip rates using the same methodology found in CalEEMod Appendix A.

On-road Fugitive Dust - Assumed 0.1 miles of unpaved road.

Grading - Total Acres Disturbed

Architectural Coating - Adjusted architectural coating square footage using equations found in CalEEMod Appendix A.

Vehicle Trips - Traffic trip rates are based on the Fehr Peers Preliminary Traffic Study for Campus Oaks Technical Memorandum dated August 28, 2014.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Area Coating - Adjusted architectural coating square footage using methodology found in CalEEMod Appendix A.

Energy Use - Adjusted Title 24 engergy use to reflect the changes per the 2013 Title 24 requirements.

Water And Wastewater -

Solid Waste -

Construction Off-road Equipment Mitigation - Same mitigation reflected in the 1996 HPMP EIR.

Mobile Commute Mitigation - 1996 HP Master Plan EIR - MM 4.10-3

Energy Mitigation - 1996 HP Master Plan EIR - MM 4.10-3. Exceed Title 24 by 10%

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	2,602,066.00	244,917.00
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2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	6.8611	79.1273	51.8889	0.0900	72.9412	3.8033	75.3387	10.2551	3.4991	13.0972	0.0000	8,587.9884	8,587.9884	1.9444	0.0000	8,628.8217
2016	284.3958	42.2553	47.4823	0.0898	72.9413	2.1971	75.1384	7.8496	2.0596	9.9091	0.0000	8,432.6895	8,432.6895	0.7975	0.0000	8,449.4366
2020	4.6012	49.4321	39.0537	0.0896	72.9416	2.2630	74.2043	10.2551	2.0820	12.0323	0.0000	7,709.2442	7,709.2442	1.9387	0.0000	7,749.9563
2021	284.1613	24.4977	36.0287	0.0895	72.9417	1.0911	74.0328	7.8498	1.0233	8.8730	0.0000	7,668.6641	7,668.6641	0.7112	0.0000	7,683.5986
2025	3.0422	27.2976	33.1827	0.0895	72.9422	1.1878	73.5966	10.2551	1.0928	11.2029	0.0000	7,556.7303	7,556.7303	1.9393	0.0000	7,597.4553
2026	284.0837	17.8915	32.8378	0.0895	72.9423	0.6544	73.5966	7.8500	0.6131	8.4630	0.0000	7,537.6499	7,537.6499	0.7018	0.0000	7,552.3876
2030	3.3007	13.6964	31.8627	0.0934	72.9424	0.4965	73.2201	10.2551	0.4964	10.6774	0.0000	7,824.3187	7,824.3187	0.2949	0.0000	7,830.5105
2031	302.9436	13.1341	31.6912	0.0935	72.9425	0.3242	73.2204	7.8501	0.3242	8.1176	0.0000	7,816.3390	7,816.3390	0.1963	0.0000	7,820.4618
2035	2.9250	12.2262	31.0833	0.0935	72.9427	0.3169	73.1632	10.2551	0.3168	10.5388	0.0000	7,796.1888	7,796.1888	0.2597	0.0000	7,801.6420
2036	283.9152	7.1510	16.0922	0.0308	72.3708	0.1832	72.4608	7.6245	0.1832	7.7146	0.0000	2,884.8300	2,884.8300	0.1075	0.0000	2,887.0878
2040	2.7089	7.8508	25.0541	0.0677	72.3708	0.2260	72.4442	10.2474	0.2260	10.4444	0.0000	7,164.4966	7,164.4966	0.2358	0.0000	7,169.4475
2041	283.9122	6.8826	16.0929	0.0308	72.3708	0.1138	72.4442	7.6245	0.1138	7.6980	0.0000	2,884.8303	2,884.8303	0.1038	0.0000	2,887.0091
Total	**1,746.8508**	**301.4426**	**392.3503**	**0.9475**	**873.5903**	**12.8572**	**882.8604**	**108.1712**	**12.0300**	**118.7685**	**0.0000**	**83,863.9697**	**83,863.9697**	**9.2307**	**0.0000**	**84,057.8146**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	3.8223	38.8454	50.9136	0.0900	14.3784	1.3245	15.5607	3.4356	1.3244	4.3976	0.0000	8,587.9884	8,587.9884	1.9444	0.0000	8,628.8217
2016	284.0867	27.9231	46.7912	0.0898	14.3785	1.1313	15.5097	2.0017	1.1127	3.1144	0.0000	8,432.6895	8,432.6895	0.7975	0.0000	8,449.4366
2020	2.5793	38.8130	38.9045	0.0896	14.3788	1.3244	15.4302	3.4356	1.3243	4.3975	0.0000	7,709.2442	7,709.2442	1.9387	0.0000	7,749.9563
2021	284.0018	21.3315	37.3066	0.0895	14.3789	1.0378	15.4167	2.0019	1.0270	3.0289	0.0000	7,668.6641	7,668.6641	0.7112	0.0000	7,683.5986
2025	2.1608	38.8018	38.4342	0.0895	14.3794	1.3245	15.4104	3.4356	1.3244	4.3976	0.0000	7,556.7303	7,556.7303	1.9393	0.0000	7,597.4553
2026	283.9723	19.6560	34.6016	0.0895	14.3794	1.0310	15.4104	2.0021	1.0207	3.0229	0.0000	7,537.6499	7,537.6499	0.7018	0.0000	7,552.3876
2030	2.0068	38.7964	38.3723	0.0934	14.3796	1.3245	15.4113	3.4356	1.3245	4.3976	0.0000	7,824.3187	7,824.3187	0.2949	0.0000	7,830.5105
2031	302.8723	19.3904	33.3754	0.0935	14.3797	1.0318	15.4115	2.0022	1.0215	3.0238	0.0000	7,816.3390	7,816.3390	0.1963	0.0000	7,820.4618
2035	1.8758	38.7934	38.3395	0.0935	14.3799	1.3246	15.4119	3.4356	1.3245	4.3976	0.0000	7,796.1888	7,796.1888	0.2597	0.0000	7,801.6420
2036	283.8567	14.1741	17.8156	0.0308	13.8080	0.9016	14.7095	1.7767	0.9016	2.6783	0.0000	2,884.8300	2,884.8300	0.1075	0.0000	2,887.0878
2040	1.5128	38.7648	37.9432	0.0677	13.8080	1.3234	14.7095	3.4279	1.3234	4.3890	0.0000	7,164.4966	7,164.4966	0.2358	0.0000	7,169.4475
2041	283.8567	14.1741	17.8156	0.0308	13.8080	0.9016	14.7095	1.7767	0.9016	2.6783	0.0000	2,884.8303	2,884.8303	0.1038	0.0000	2,887.0091

Total	**1,736.6043**	**349.4640**	**430.6133**	**0.9475**	**170.8363**	**13.9809**	**183.1013**	**32.1673**	**13.9306**	**43.9234**	**0.0000**	**83,863.9696**	**83,863.9696**	**9.2307**	**0.0000**	**84,057.8145**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.59**	**-15.93**	**-9.75**	**0.00**	**80.44**	**-8.74**	**79.26**	**70.26**	**-15.80**	**63.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	323.4107	2.9000e-003	0.3230	2.0000e-005		1.1500e-003	1.1500e-003		1.1500e-003	1.1500e-003		0.6962	0.6962	1.7900e-003		0.7339
Energy	1.2255	11.1412	9.3586	0.0669		0.8467	0.8467		0.8467	0.8467		13,369.4762	13,369.4762	0.2563	0.2451	13,450.8406
Mobile	77.2685	127.3371	661.0084	2.5233	158.6870	3.1642	161.8512	42.3983	2.9197	45.3180		181,988.4688	181,988.4688	4.0263		182,073.0210
Total	**401.9048**	**138.4813**	**670.6899**	**2.5902**	**158.6870**	**4.0121**	**162.6991**	**42.3983**	**3.7676**	**46.1659**		**195,358.6412**	**195,358.6412**	**4.2843**	**0.2451**	**195,524.5955**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Area	323.4107	2.9000e-003	0.3230	2.0000e-005		1.1500e-003	1.1500e-003		1.1500e-003	1.1500e-003		0.6962	0.6962	1.7900e-003		0.7339
Energy	1.1037	10.0338	8.4284	0.0602		0.7626	0.7626		0.7626	0.7626		12,040.5525	12,040.5525	0.2308	0.2207	12,113.8293
Mobile	76.8868	125.5891	652.6115	2.4764	155.6136	3.1107	158.7243	41.5771	2.8704	44.4475		178,605.0281	178,605.0281	3.9566		178,688.1176
Total	**401.4012**	**135.6258**	**661.3628**	**2.5366**	**155.6136**	**3.8744**	**159.4880**	**41.5771**	**3.6341**	**45.2112**		**190,646.2767**	**190,646.2767**	**4.1892**	**0.2207**	**190,802.6807**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.13**	**2.06**	**1.39**	**2.07**	**1.94**	**3.43**	**1.97**	**1.94**	**3.54**	**2.07**	**0.00**	**2.41**	**2.41**	**2.22**	**9.94**	**2.41**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Years 1-5: Site Preparation	Site Preparation	7/1/2015	7/12/2015	5	8	
2	Years 1-5: Grading	Grading	7/13/2015	8/10/2015	5	21	
3	Years 1-5: Building Construction	Building Construction	8/11/2015	5/22/2016	5	204	
4	Years 1-5: Paving	Paving	5/23/2016	6/12/2016	5	15	
5	Years 1-5: Architectural Coating	Architectural Coating	6/13/2016	7/4/2016	5	16	
6	Years 5-10: Site Preparation	Site Preparation	7/3/2020	7/14/2020	5	8	
7	Years 5-10: Grading	Grading	7/15/2020	8/12/2020	5	21	
8	Years 5-10: Building Construction	Building Construction	8/13/2020	5/25/2021	5	204	
9	Years 5-10: Paving	Paving	5/26/2021	6/15/2021	5	15	
10	Years 5-10: Architectural Coating	Architectural Coating	6/16/2021	7/7/2021	5	16	
11	Years 10-15: Site Preparation	Site Preparation	7/6/2025	7/17/2025	5	9	
12	Years 10-15: Grading	Grading	7/18/2025	8/15/2025	5	21	
13	Years 10-15: Building Construction	Building Construction	8/16/2025	5/28/2026	5	204	

14	Years 10-15: Paving	Paving	5/29/2026	6/18/2026	5	15	
15	Years 10-15: Architectural Coating	Architectural Coating	6/19/2026	7/10/2026	5	16	
16	Years 15-20: Site Preparation	Site Preparation	7/9/2030	7/20/2030	5	9	
17	Years 15-20: Grading	Grading	7/21/2030	8/18/2030	5	20	
18	Years 15-20: Building Construction	Building Construction	8/19/2030	5/31/2031	5	205	
19	Years 15-20: Paving	Paving	6/1/2031	6/21/2031	5	15	
20	Years 15-20: Architectural Coating	Architectural Coating	6/22/2031	7/13/2031	5	15	
21	Years 20-25: Site Preparation	Site Preparation	7/12/2035	7/23/2035	5	8	
22	Years 20-25: Grading	Grading	7/24/2035	8/21/2035	5	21	
23	Years 20-25: Building Construction	Building Construction	8/22/2035	6/2/2036	5	204	
24	Years 20-25: Paving	Paving	6/3/2036	6/23/2036	5	15	
25	Years 20-35: Architectural Coating	Architectural Coating	6/24/2036	7/15/2036	5	16	
26	Years 25-30: Site Preparation	Site Preparation	7/14/2040	7/25/2040	5	8	
27	Years 25-30: Grading	Grading	7/26/2040	8/23/2040	5	21	
28	Years 25-30: Building Construction	Building Construction	8/24/2040	6/5/2041	5	204	
29	Years 25-30: Paving	Paving	6/6/2041	6/26/2041	5	15	
30	Years 25-30: Architectural Coating	Architectural Coating	6/27/2041	7/18/2041	5	16	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 734,750; Non-Residential Outdoor: 244,917 (Architectural

Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Years 1-5: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 1-5: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 1-5: Grading	Excavators	2	8.00	162	0.38
Years 1-5: Grading	Graders	1	8.00	174	0.41
Years 1-5: Grading	Rubber Tired Dozers	1	8.00	255	0.40
Years 1-5: Grading	Scrapers	2	8.00	361	0.48
Years 1-5: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 1-5: Building Construction	Cranes	1	7.00	226	0.29
Years 1-5: Building Construction	Forklifts	3	8.00	89	0.20
Years 1-5: Building Construction	Generator Sets	1	8.00	84	0.74
Years 1-5: Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 1-5: Building Construction	Welders	1	8.00	46	0.45
Years 1-5: Paving	Pavers	2	8.00	125	0.42
Years 1-5: Paving	Paving Equipment	2	8.00	130	0.36
Years 1-5: Paving	Rollers	2	8.00	80	0.38
Years 1-5: Architectural Coating	Air Compressors	1	6.00	78	0.48
Years 5-10: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 5-10: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 5-10: Grading	Excavators	2	8.00	162	0.38
Years 5-10: Grading	Graders	1	8.00	174	0.41
Years 5-10: Grading	Rubber Tired Dozers	1	8.00	255	0.40

Years 5-10: Grading	Scrapers	2	8.00	361	0.48
Years 5-10: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 5-10: Building Construction	Cranes	1	7.00	226	0.29
Years 5-10: Building Construction	Forklifts	3	8.00	89	0.20
Years 5-10: Building Construction	Generator Sets	1	8.00	84	0.74
Years 5-10: Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 5-10: Building Construction	Welders	1	8.00	46	0.45
Years 5-10: Paving	Pavers	2	8.00	125	0.42
Years 5-10: Paving	Paving Equipment	2	8.00	130	0.36
Years 5-10: Paving	Rollers	2	8.00	80	0.38
Years 5-10: Architectural Coating	Air Compressors	1	6.00	78	0.48
Years 10-15: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 10-15: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 10-15: Grading	Excavators	2	8.00	162	0.38
Years 10-15: Grading	Graders	1	8.00	174	0.41
Years 10-15: Grading	Rubber Tired Dozers	1	8.00	255	0.40
Years 10-15: Grading	Scrapers	2	8.00	361	0.48
Years 10-15: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 10-15: Building Construction	Cranes	1	7.00	226	0.29
Years 10-15: Building Construction	Forklifts	3	8.00	89	0.20
Years 10-15: Building Construction	Generator Sets	1	8.00	84	0.74
Years 10-15: Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 10-15: Building Construction	Welders	1	8.00	46	0.45
Years 10-15: Paving	Pavers	2	8.00	125	0.42

Years 10-15: Paving	Paving Equipment	2	8.00	130	0.36
Years 10-15: Paving	Rollers	2	8.00	80	0.38
Years 10-15: Architectural Coating	Air Compressors	1	6.00	78	0.48
Years 15-20: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 15-20: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 15-20: Grading	Excavators	2	8.00	162	0.38
Years 15-20: Grading	Graders	1	8.00	174	0.41
Years 15-20: Grading	Rubber Tired Dozers	1	8.00	255	0.40
Years 15-20: Grading	Scrapers	2	8.00	361	0.48
Years 15-20: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 15-20: Building Construction	Cranes	1	7.00	226	0.29
Years 15-20: Building Construction	Forklifts	3	8.00	89	0.20
Years 15-20: Building Construction	Generator Sets	1	8.00	84	0.74
Years 15-20: Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 15-20: Building Construction	Welders	1	8.00	46	0.45
Years 15-20: Paving	Pavers	2	8.00	125	0.42
Years 15-20: Paving	Paving Equipment	2	8.00	130	0.36
Years 15-20: Paving	Rollers	2	8.00	80	0.38
Years 15-20: Architectural Coating	Air Compressors	1	6.00	78	0.48
Years 20-25: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 20-25: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 20-25: Grading	Excavators	2	8.00	162	0.38
Years 20-25: Grading	Graders	1	8.00	174	0.41
Years 20-25: Grading	Rubber Tired Dozers	1	8.00	255	0.40

Years 20-25: Grading	Scrapers	2	8.00	361	0.48
Years 20-25: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 20-25: Building Construction	Cranes	1	7.00	226	0.29
Years 20-25: Building Construction	Forklifts	3	8.00	89	0.20
Years 20-25: Building Construction	Generator Sets	1	8.00	84	0.74
Years 20-25: Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 20-25: Building Construction	Welders	1	8.00	46	0.45
Years 20-25: Paving	Pavers	2	8.00	125	0.42
Years 20-25: Paving	Paving Equipment	2	8.00	130	0.36
Years 20-25: Paving	Rollers	2	8.00	80	0.38
Years 20-35: Architectural Coating	Air Compressors	1	6.00	78	0.48
Years 25-30: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 25-30: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 25-30: Grading	Excavators	2	8.00	162	0.38
Years 25-30: Grading	Graders	1	8.00	174	0.41
Years 25-30: Grading	Rubber Tired Dozers	1	8.00	255	0.40
Years 25-30: Grading	Scrapers	2	8.00	361	0.48
Years 25-30: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 25-30: Building Construction	Cranes	1	7.00	226	0.29
Years 25-30: Building Construction	Forklifts	3	8.00	89	0.20
Years 25-30: Building Construction	Generator Sets	1	8.00	84	0.74
Years 25-30: Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 25-30: Building Construction	Welders	1	8.00	46	0.45
Years 25-30: Paving	Pavers	2	8.00	125	0.42

Years 25-30: Paving	Paving Equipment	2	8.00	130	0.36
Years 25-30: Paving	Rollers	2	8.00	80	0.38
Years 25-30: Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Years 1-5: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 1-5: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 1-5: Building Construction	9	301.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 1-5: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 1-5: Architectural	1	60.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Building Construction	9	301.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Architectural	1	60.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-15: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-15: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-15: Building	9	301.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-15: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-15: Architectural	1	60.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 15-20: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 15-20: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Years 15-20: Building	9	301.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 15-20: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 15-20: Architectural	1	60.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 20-25: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 20-25: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 20-25: Building	9	301.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 20-25: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 20-35: Architectural	1	60.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 25-30: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 25-30: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 25-30: Building	9	301.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 25-30: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 25-30: Architectural	1	60.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Years 1-5: Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412		4,111.7444	4,111.7444	1.2275		4,137.5225
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**		**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5225**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0774	0.0725	0.9440	1.8400e-003	3.0077	1.0300e-003	3.0088	0.3244	9.4000e-004	0.3253		156.9883	156.9883	7.2300e-003		157.1401
Total	**0.0774**	**0.0725**	**0.9440**	**1.8400e-003**	**3.0077**	**1.0300e-003**	**3.0088**	**0.3244**	**9.4000e-004**	**0.3253**		**156.9883**	**156.9883**	**7.2300e-003**		**157.1401**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0974	0.0000	6.0974	3.3516	0.0000	3.3516			0.0000			0.0000
Off-Road	0.9515	19.4584	23.4003	0.0391		0.9611	0.9611		0.9611	0.9611	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224
Total	**0.9515**	**19.4584**	**23.4003**	**0.0391**	**6.0974**	**0.9611**	**7.0584**	**3.3516**	**0.9611**	**4.3127**	**0.0000**	**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5224**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0774	0.0725	0.9440	1.8400e-003	0.6004	1.0300e-003	0.6014	0.0840	9.4000e-004	0.0849		156.9883	156.9883	7.2300e-003		157.1401

Total	**0.0774**	**0.0725**	**0.9440**	**1.8400e-003**	**0.6004**	**1.0300e-003**	**0.6014**	**0.0840**	**9.4000e-004**	**0.0849**		**156.9883**	**156.9883**	**7.2300e-003**		**157.1401**

3.3 Years 1-5: Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.8400	0.0000	8.8400	3.6145	0.0000	3.6145			0.0000			0.0000
Off-Road	6.7751	79.0467	50.8400	0.0618		3.8022	3.8022		3.4980	3.4980		6,486.2433	6,486.2433	1.9364		6,526.9080
Total	**6.7751**	**79.0467**	**50.8400**	**0.0618**	**8.8400**	**3.8022**	**12.6422**	**3.6145**	**3.4980**	**7.1125**		**6,486.2433**	**6,486.2433**	**1.9364**		**6,526.9080**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0860	0.0806	1.0489	2.0500e-003	3.3419	1.1500e-003	3.3431	0.3604	1.0400e-003	0.3615		174.4315	174.4315	8.0300e-003		174.6001
Total	**0.0860**	**0.0806**	**1.0489**	**2.0500e-003**	**3.3419**	**1.1500e-003**	**3.3431**	**0.3604**	**1.0400e-003**	**0.3615**		**174.4315**	**174.4315**	**8.0300e-003**		**174.6001**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9835	0.0000	2.9835	1.2199	0.0000	1.2199			0.0000			0.0000
Off-Road	1.5128	38.7648	37.9432	0.0618		1.3234	1.3234		1.3234	1.3234	0.0000	6,486.2433	6,486.2433	1.9364		6,526.9080

Total	**1.5128**	**38.7648**	**37.9432**	**0.0618**	**2.9835**	**1.3234**	**4.3069**	**1.2199**	**1.3234**	**2.5433**	**0.0000**	**6,486.2433**	**6,486.2433**	**1.9364**		**6,526.9080**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0860	0.0806	1.0489	2.0500e-003	0.6671	1.1500e-003	0.6682	0.0933	1.0400e-003	0.0944		174.4315	174.4315	8.0300e-003		174.6001
Total	**0.0860**	**0.0806**	**1.0489**	**2.0500e-003**	**0.6671**	**1.1500e-003**	**0.6682**	**0.0933**	**1.0400e-003**	**0.0944**		**174.4315**	**174.4315**	**8.0300e-003**		**174.6001**

3.4 Years 1-5: Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.8565	14.5868	17.3122	0.0323	22.6452	0.2635	22.9087	2.4250	0.2422	2.6672		3,273.2176	3,273.2176	0.0292		3,273.8316
Worker	1.2946	1.2127	15.7857	0.0308	50.2961	0.0173	50.3133	5.4245	0.0157	5.4403		2,625.1936	2,625.1936	0.1208		2,627.7311

Total	**3.1511**	**15.7995**	**33.0980**	**0.0631**	**72.9412**	**0.2808**	**73.2220**	**7.8496**	**0.2579**	**8.1075**		**5,898.4112**	**5,898.4112**	**0.1501**		**5,901.5627**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0268		0.9016	0.9016		0.9016	0.9016	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**0.6712**	**14.1741**	**17.8156**	**0.0268**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.8565	14.5868	17.3122	0.0323	4.3391	0.2635	4.6026	0.5970	0.2422	0.8393		3,273.2176	3,273.2176	0.0292		3,273.8316
Worker	1.2946	1.2127	15.7857	0.0308	10.0393	0.0173	10.0566	1.4047	0.0157	1.4204		2,625.1936	2,625.1936	0.1208		2,627.7311
Total	**3.1511**	**15.7995**	**33.0980**	**0.0631**	**14.3784**	**0.2808**	**14.6591**	**2.0017**	**0.2579**	**2.2596**		**5,898.4112**	**5,898.4112**	**0.1501**		**5,901.5627**

3.4 Years 1-5: Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.5833	12.6704	14.9306	0.0323	22.6453	0.2133	22.8585	2.4251	0.1961	2.6211		3,233.6275	3,233.6275	0.0258		3,234.1695
Worker	1.1539	1.0786	14.0450	0.0308	50.2961	0.0164	50.3125	5.4245	0.0151	5.4396		2,529.7756	2,529.7756	0.1096		2,532.0781
Total	**2.7373**	**13.7490**	**28.9756**	**0.0630**	**72.9413**	**0.2297**	**73.1710**	**7.8496**	**0.2111**	**8.0607**		**5,763.4031**	**5,763.4031**	**0.1355**		**5,766.2476**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0268		0.9016	0.9016		0.9016	0.9016	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**0.6712**	**14.1741**	**17.8156**	**0.0268**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.5833	12.6704	14.9306	0.0323	4.3391	0.2133	4.5524	0.5971	0.1961	0.7931		3,233.6275	3,233.6275	0.0258		3,234.1695
Worker	1.1539	1.0786	14.0450	0.0308	10.0393	0.0164	10.0558	1.4047	0.0151	1.4197		2,529.7756	2,529.7756	0.1096		2,532.0781

Total	**2.7373**	**13.7490**	**28.9756**	**0.0630**	**14.3785**	**0.2297**	**14.6082**	**2.0017**	**0.2111**	**2.2128**		**5,763.4031**	**5,763.4031**	**0.1355**		**5,766.2476**

3.5 Years 1-5: Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	39.5271					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**41.6168**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**		**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0575	0.0538	0.6999	1.5300e-003	0.1232	8.2000e-004	0.1240	0.0327	7.5000e-004	0.0334		126.0686	126.0686	5.4600e-003		126.1833
Total	**0.0575**	**0.0538**	**0.6999**	**1.5300e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**126.0686**	**126.0686**	**5.4600e-003**		**126.1833**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5490	11.0645	16.9276	0.0223		0.5982	0.5982		0.5982	0.5982	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	39.5271					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Total	**40.0761**	**11.0645**	**16.9276**	**0.0223**		**0.5982**	**0.5982**		**0.5982**	**0.5982**	**0.0000**	**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0575	0.0538	0.6999	1.5300e-003	0.1232	8.2000e-004	0.1240	0.0327	7.5000e-004	0.0334		126.0686	126.0686	5.4600e-003		126.1833
Total	**0.0575**	**0.0538**	**0.6999**	**1.5300e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**126.0686**	**126.0686**	**5.4600e-003**		**126.1833**

3.6 Years 1-5: Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	283.7973					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**284.1657**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2300	0.2150	2.7997	6.1300e-003	0.4929	3.2800e-003	0.4962	0.1307	3.0000e-003	0.1337		504.2742	504.2742	0.0219		504.7332

Total	**0.2300**	**0.2150**	**2.7997**	**6.1300e-003**	**0.4929**	**3.2800e-003**	**0.4962**	**0.1307**	**3.0000e-003**	**0.1337**		**504.2742**	**504.2742**	**0.0219**		**504.7332**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	283.7973					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**283.8567**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2300	0.2150	2.7997	6.1300e-003	0.4929	3.2800e-003	0.4962	0.1307	3.0000e-003	0.1337		504.2742	504.2742	0.0219		504.7332
Total	**0.2300**	**0.2150**	**2.7997**	**6.1300e-003**	**0.4929**	**3.2800e-003**	**0.4962**	**0.1307**	**3.0000e-003**	**0.1337**		**504.2742**	**504.2742**	**0.0219**		**504.7332**

3.7 Years 5-10: Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.7250	38.8640	32.9264	0.0391		1.9309	1.9309		1.7764	1.7764		3,792.2816	3,792.2816	1.2265		3,818.0381

Total	**3.7250**	**38.8640**	**32.9264**	**0.0391**	**18.0663**	**1.9309**	**19.9971**	**9.9307**	**1.7764**	**11.7071**		**3,792.2816**	**3,792.2816**	**1.2265**		**3,818.0381**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0460	0.0434	0.5652	1.8400e-003	3.0077	9.3000e-004	3.0087	0.3244	8.6000e-004	0.3253		129.4495	129.4495	4.8200e-003		129.5508
Total	**0.0460**	**0.0434**	**0.5652**	**1.8400e-003**	**3.0077**	**9.3000e-004**	**3.0087**	**0.3244**	**8.6000e-004**	**0.3253**		**129.4495**	**129.4495**	**4.8200e-003**		**129.5508**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0974	0.0000	6.0974	3.3516	0.0000	3.3516			0.0000			0.0000
Off-Road	0.9515	19.4584	23.4003	0.0391		0.9611	0.9611		0.9611	0.9611	0.0000	3,792.2816	3,792.2816	1.2265		3,818.0381
Total	**0.9515**	**19.4584**	**23.4003**	**0.0391**	**6.0974**	**0.9611**	**7.0584**	**3.3516**	**0.9611**	**4.3127**	**0.0000**	**3,792.2816**	**3,792.2816**	**1.2265**		**3,818.0381**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0460	0.0434	0.5652	1.8400e-003	0.6004	9.3000e-004	0.6013	0.0840	8.6000e-004	0.0849		129.4495	129.4495	4.8200e-003		129.5508

Total	**0.0460**	**0.0434**	**0.5652**	**1.8400e-003**	**0.6004**	**9.3000e-004**	**0.6013**	**0.0840**	**8.6000e-004**	**0.0849**		**129.4495**	**129.4495**	**4.8200e-003**		**129.5508**

3.8 Years 5-10: Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.8400	0.0000	8.8400	3.6145	0.0000	3.6145			0.0000			0.0000
Off-Road	4.5501	49.3839	38.4257	0.0617		2.2619	2.2619		2.0810	2.0810		5,977.7088	5,977.7088	1.9333		6,018.3084
Total	**4.5501**	**49.3839**	**38.4257**	**0.0617**	**8.8400**	**2.2619**	**11.1019**	**3.6145**	**2.0810**	**5.6955**		**5,977.7088**	**5,977.7088**	**1.9333**		**6,018.3084**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0482	0.6280	2.0400e-003	3.3419	1.0400e-003	3.3430	0.3604	9.6000e-004	0.3614		143.8328	143.8328	5.3600e-003		143.9454
Total	**0.0511**	**0.0482**	**0.6280**	**2.0400e-003**	**3.3419**	**1.0400e-003**	**3.3430**	**0.3604**	**9.6000e-004**	**0.3614**		**143.8328**	**143.8328**	**5.3600e-003**		**143.9454**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9835	0.0000	2.9835	1.2199	0.0000	1.2199			0.0000			0.0000
Off-Road	1.5128	38.7648	37.9432	0.0617		1.3234	1.3234		1.3234	1.3234	0.0000	5,977.7088	5,977.7088	1.9333		6,018.3084

Total	**1.5128**	**38.7648**	**37.9432**	**0.0617**	**2.9835**	**1.3234**	**4.3069**	**1.2199**	**1.3234**	**2.5433**	**0.0000**	**5,977.7088**	**5,977.7088**	**1.9333**		**6,018.3084**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0482	0.6280	2.0400e-003	0.6671	1.0400e-003	0.6681	0.0933	9.6000e-004	0.0943		143.8328	143.8328	5.3600e-003		143.9454
Total	**0.0511**	**0.0482**	**0.6280**	**2.0400e-003**	**0.6671**	**1.0400e-003**	**0.6681**	**0.0933**	**9.6000e-004**	**0.0943**		**143.8328**	**143.8328**	**5.3600e-003**		**143.9454**

3.9 Years 5-10: Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465		2,542.4799	2,542.4799	0.6194		2,555.4880
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**		**2,542.4799**	**2,542.4799**	**0.6194**		**2,555.4880**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.1387	7.9765	11.6381	0.0320	22.6455	0.1343	22.7798	2.4252	0.1235	2.5487		3,002.0805	3,002.0805	0.0216		3,002.5343
Worker	0.7693	0.7249	9.4508	0.0307	50.2961	0.0156	50.3116	5.4245	0.0144	5.4390		2,164.6838	2,164.6838	0.0807		2,166.3776

Total	**1.9080**	**8.7014**	**21.0889**	**0.0628**	**72.9416**	**0.1499**	**73.0915**	**7.8497**	**0.1380**	**7.9877**		**5,166.7643**	**5,166.7643**	**0.1023**		**5,168.9118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0268		0.9016	0.9016		0.9016	0.9016	0.0000	2,542.4799	2,542.4799	0.6194		2,555.4880
Total	**0.6712**	**14.1741**	**17.8156**	**0.0268**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,542.4799**	**2,542.4799**	**0.6194**		**2,555.4880**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.1387	7.9765	11.6381	0.0320	4.3394	0.1343	4.4737	0.5972	0.1235	0.7207		3,002.0805	3,002.0805	0.0216		3,002.5343
Worker	0.7693	0.7249	9.4508	0.0307	10.0393	0.0156	10.0549	1.4047	0.0144	1.4191		2,164.6838	2,164.6838	0.0807		2,166.3776
Total	**1.9080**	**8.7014**	**21.0889**	**0.0628**	**14.3788**	**0.1499**	**14.5286**	**2.0018**	**0.1380**	**2.1398**		**5,166.7643**	**5,166.7643**	**0.1023**		**5,168.9118**

3.9 Years 5-10: Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8931	17.3403	16.5376	0.0268		0.9549	0.9549		0.8979	0.8979		2,542.7817	2,542.7817	0.6126		2,555.6462
Total	**1.8931**	**17.3403**	**16.5376**	**0.0268**		**0.9549**	**0.9549**		**0.8979**	**0.8979**		**2,542.7817**	**2,542.7817**	**0.6126**		**2,555.6462**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.0059	6.4769	10.5783	0.0320	22.6457	0.1205	22.7661	2.4252	0.1108	2.5361		2,996.9521	2,996.9521	0.0215		2,997.4026
Worker	0.7280	0.6805	8.9128	0.0307	50.2961	0.0157	50.3118	5.4245	0.0146	5.4391		2,128.9302	2,128.9302	0.0771		2,130.5499
Total	**1.7338**	**7.1574**	**19.4910**	**0.0627**	**72.9417**	**0.1362**	**73.0779**	**7.8498**	**0.1254**	**7.9752**		**5,125.8823**	**5,125.8823**	**0.0986**		**5,127.9525**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0268		0.9016	0.9016		0.9016	0.9016	0.0000	2,542.7817	2,542.7817	0.6126		2,555.6462
Total	**0.6712**	**14.1741**	**17.8156**	**0.0268**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,542.7817**	**2,542.7817**	**0.6126**		**2,555.6462**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.0059	6.4769	10.5783	0.0320	4.3396	0.1205	4.4600	0.5972	0.1108	0.7081		2,996.9521	2,996.9521	0.0215		2,997.4026
Worker	0.7280	0.6805	8.9128	0.0307	10.0393	0.0157	10.0551	1.4047	0.0146	1.4192		2,128.9302	2,128.9302	0.0771		2,130.5499

Total	**1.7338**	**7.1574**	**19.4910**	**0.0627**	**14.3789**	**0.1362**	**14.5151**	**2.0019**	**0.1254**	**2.1273**		**5,125.8823**	**5,125.8823**	**0.0986**		**5,127.9525**

3.10 Years 5-10: Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2308	12.6607	14.3528	0.0223		0.6652	0.6652		0.6120	0.6120		2,160.2530	2,160.2530	0.6987		2,174.9250
Paving	39.5271					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**40.7579**	**12.6607**	**14.3528**	**0.0223**		**0.6652**	**0.6652**		**0.6120**	**0.6120**		**2,160.2530**	**2,160.2530**	**0.6987**		**2,174.9250**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0363	0.0339	0.4442	1.5300e-003	0.1232	7.8000e-004	0.1240	0.0327	7.3000e-004	0.0334		106.0929	106.0929	3.8400e-003		106.1736
Total	**0.0363**	**0.0339**	**0.4442**	**1.5300e-003**	**0.1232**	**7.8000e-004**	**0.1240**	**0.0327**	**7.3000e-004**	**0.0334**		**106.0929**	**106.0929**	**3.8400e-003**		**106.1736**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5490	11.0645	16.9276	0.0223		0.5982	0.5982		0.5982	0.5982	0.0000	2,160.2530	2,160.2530	0.6987		2,174.9250
Paving	39.5271					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Total	**40.0761**	**11.0645**	**16.9276**	**0.0223**		**0.5982**	**0.5982**		**0.5982**	**0.5982**	**0.0000**	**2,160.2530**	**2,160.2530**	**0.6987**		**2,174.9250**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0363	0.0339	0.4442	1.5300e-003	0.1232	7.8000e-004	0.1240	0.0327	7.3000e-004	0.0334		106.0929	106.0929	3.8400e-003		106.1736
Total	**0.0363**	**0.0339**	**0.4442**	**1.5300e-003**	**0.1232**	**7.8000e-004**	**0.1240**	**0.0327**	**7.3000e-004**	**0.0334**		**106.0929**	**106.0929**	**3.8400e-003**		**106.1736**

3.11 Years 5-10: Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	283.7973					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.8537
Total	**284.0162**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.8537**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1451	0.1356	1.7766	6.1200e-003	0.4929	3.1300e-003	0.4960	0.1307	2.9100e-003	0.1336		424.3715	424.3715	0.0154		424.6943

Total	**0.1451**	**0.1356**	**1.7766**	**6.1200e-003**	**0.4929**	**3.1300e-003**	**0.4960**	**0.1307**	**2.9100e-003**	**0.1336**		**424.3715**	**424.3715**	**0.0154**		**424.6943**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	283.7973					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0193		281.8537
Total	**283.8567**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.8537**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1451	0.1356	1.7766	6.1200e-003	0.4929	3.1300e-003	0.4960	0.1307	2.9100e-003	0.1336		424.3715	424.3715	0.0154		424.6943
Total	**0.1451**	**0.1356**	**1.7766**	**6.1200e-003**	**0.4929**	**3.1300e-003**	**0.4960**	**0.1307**	**2.9100e-003**	**0.1336**		**424.3715**	**424.3715**	**0.0154**		**424.6943**

3.12 Years 10-15: Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.5083	23.5257	24.8879	0.0392		1.0293	1.0293		0.9470	0.9470		3,793.8403	3,793.8403	1.2270		3,819.6074

Total	**2.5083**	**23.5257**	**24.8879**	**0.0392**	**18.0663**	**1.0293**	**19.0956**	**9.9307**	**0.9470**	**10.8776**		**3,793.8403**	**3,793.8403**	**1.2270**		**3,819.6074**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0360	0.0333	0.4419	1.8400e-003	3.0077	9.8000e-004	3.0087	0.3244	9.1000e-004	0.3253		120.7534	120.7534	4.0200e-003		120.8378
Total	**0.0360**	**0.0333**	**0.4419**	**1.8400e-003**	**3.0077**	**9.8000e-004**	**3.0087**	**0.3244**	**9.1000e-004**	**0.3253**		**120.7534**	**120.7534**	**4.0200e-003**		**120.8378**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0974	0.0000	6.0974	3.3516	0.0000	3.3516			0.0000			0.0000
Off-Road	0.9515	19.4584	23.4003	0.0392		0.9611	0.9611		0.9611	0.9611	0.0000	3,793.8403	3,793.8403	1.2270		3,819.6074
Total	**0.9515**	**19.4584**	**23.4003**	**0.0392**	**6.0974**	**0.9611**	**7.0584**	**3.3516**	**0.9611**	**4.3127**	**0.0000**	**3,793.8403**	**3,793.8403**	**1.2270**		**3,819.6074**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0360	0.0333	0.4419	1.8400e-003	0.6004	9.8000e-004	0.6013	0.0840	9.1000e-004	0.0849		120.7534	120.7534	4.0200e-003		120.8378

Total	**0.0360**	**0.0333**	**0.4419**	**1.8400e-003**	**0.6004**	**9.8000e-004**	**0.6013**	**0.0840**	**9.1000e-004**	**0.0849**		**120.7534**	**120.7534**	**4.0200e-003**		**120.8378**

3.13 Years 10-15: Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.8400	0.0000	8.8400	3.6145	0.0000	3.6145			0.0000			0.0000
Off-Road	3.0022	27.2606	31.3515	0.0618		1.1867	1.1867		1.0918	1.0918		5,982.3526	5,982.3526	1.9348		6,022.9837
Total	**3.0022**	**27.2606**	**31.3515**	**0.0618**	**8.8400**	**1.1867**	**10.0267**	**3.6145**	**1.0918**	**4.7063**		**5,982.3526**	**5,982.3526**	**1.9348**		**6,022.9837**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0400	0.0370	0.4910	2.0400e-003	3.3419	1.0900e-003	3.3430	0.3604	1.0100e-003	0.3615		134.1704	134.1704	4.4700e-003		134.2642
Total	**0.0400**	**0.0370**	**0.4910**	**2.0400e-003**	**3.3419**	**1.0900e-003**	**3.3430**	**0.3604**	**1.0100e-003**	**0.3615**		**134.1704**	**134.1704**	**4.4700e-003**		**134.2642**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9835	0.0000	2.9835	1.2199	0.0000	1.2199			0.0000			0.0000
Off-Road	1.5128	38.7648	37.9432	0.0618		1.3234	1.3234		1.3234	1.3234	0.0000	5,982.3526	5,982.3526	1.9348		6,022.9837

Total	**1.5128**	**38.7648**	**37.9432**	**0.0618**	**2.9835**	**1.3234**	**4.3069**	**1.2199**	**1.3234**	**2.5433**	**0.0000**	**5,982.3526**	**5,982.3526**	**1.9348**		**6,022.9837**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0400	0.0370	0.4910	2.0400e-003	0.6671	1.0900e-003	0.6682	0.0933	1.0100e-003	0.0944		134.1704	134.1704	4.4700e-003		134.2642
Total	**0.0400**	**0.0370**	**0.4910**	**2.0400e-003**	**0.6671**	**1.0900e-003**	**0.6682**	**0.0933**	**1.0100e-003**	**0.0944**		**134.1704**	**134.1704**	**4.4700e-003**		**134.2642**

3.14 Years 10-15: Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097	16.0518	0.0269		0.5250	0.5250		0.4939	0.4939		2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**1.3615**	**12.4097**	**16.0518**	**0.0269**		**0.5250**	**0.5250**		**0.4939**	**0.4939**		**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8876	5.0062	9.7415	0.0319	22.6462	0.1130	22.7591	2.4254	0.1039	2.5294		2,991.5752	2,991.5752	0.0208		2,992.0114
Worker	0.6020	0.5568	7.3894	0.0307	50.2961	0.0164	50.3125	5.4245	0.0153	5.4398		2,019.2647	2,019.2647	0.0672		2,020.6766

Total	**1.4895**	**5.5630**	**17.1310**	**0.0626**	**72.9422**	**0.1294**	**73.0716**	**7.8500**	**0.1192**	**7.9691**		**5,010.8398**	**5,010.8398**	**0.0880**		**5,012.6880**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0269		0.9016	0.9016		0.9016	0.9016	0.0000	2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**0.6712**	**14.1741**	**17.8156**	**0.0269**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8876	5.0062	9.7415	0.0319	4.3401	0.1130	4.4530	0.5974	0.1039	0.7014		2,991.5752	2,991.5752	0.0208		2,992.0114
Worker	0.6020	0.5568	7.3894	0.0307	10.0393	0.0164	10.0558	1.4047	0.0153	1.4199		2,019.2647	2,019.2647	0.0672		2,020.6766
Total	**1.4895**	**5.5630**	**17.1310**	**0.0626**	**14.3794**	**0.1294**	**14.5088**	**2.0021**	**0.1192**	**2.1213**		**5,010.8398**	**5,010.8398**	**0.0880**		**5,012.6880**

3.14 Years 10-15: Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097	16.0518	0.0269		0.5250	0.5250		0.4939	0.4939		2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**1.3615**	**12.4097**	**16.0518**	**0.0269**		**0.5250**	**0.5250**		**0.4939**	**0.4939**		**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8675	4.9447	9.6271	0.0319	22.6462	0.1127	22.7589	2.4254	0.1037	2.5291		2,991.8023	2,991.8023	0.0208		2,992.2382
Worker	0.5797	0.5371	7.1589	0.0307	50.2961	0.0167	50.3127	5.4245	0.0155	5.4400		1,999.9571	1,999.9571	0.0657		2,001.3359
Total	**1.4472**	**5.4818**	**16.7860**	**0.0626**	**72.9423**	**0.1294**	**73.0716**	**7.8500**	**0.1192**	**7.9691**		**4,991.7594**	**4,991.7594**	**0.0864**		**4,993.5741**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0269		0.9016	0.9016		0.9016	0.9016	0.0000	2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**0.6712**	**14.1741**	**17.8156**	**0.0269**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8675	4.9447	9.6271	0.0319	4.3401	0.1127	4.4528	0.5975	0.1037	0.7012		2,991.8023	2,991.8023	0.0208		2,992.2382
Worker	0.5797	0.5371	7.1589	0.0307	10.0393	0.0167	10.0560	1.4047	0.0155	1.4201		1,999.9571	1,999.9571	0.0657		2,001.3359

Total	**1.4472**	**5.4818**	**16.7860**	**0.0626**	**14.3794**	**0.1294**	**14.5088**	**2.0021**	**0.1192**	**2.1213**		**4,991.7594**	**4,991.7594**	**0.0864**		**4,993.5741**

3.15 Years 10-15: Paving - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8973	8.4215	14.2781	0.0223		0.4109	0.4109		0.3781	0.3781		2,159.7967	2,159.7967	0.6985		2,174.4656
Paving	39.5271					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**40.4244**	**8.4215**	**14.2781**	**0.0223**		**0.4109**	**0.4109**		**0.3781**	**0.3781**		**2,159.7967**	**2,159.7967**	**0.6985**		**2,174.4656**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0289	0.0268	0.3568	1.5300e-003	0.1232	8.3000e-004	0.1241	0.0327	7.7000e-004	0.0335		99.6656	99.6656	3.2700e-003		99.7344
Total	**0.0289**	**0.0268**	**0.3568**	**1.5300e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.7000e-004**	**0.0335**		**99.6656**	**99.6656**	**3.2700e-003**		**99.7344**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5490	11.0645	16.9276	0.0223		0.5982	0.5982		0.5982	0.5982	0.0000	2,159.7967	2,159.7967	0.6985		2,174.4656
Paving	39.5271					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Total	**40.0761**	**11.0645**	**16.9276**	**0.0223**		**0.5982**	**0.5982**		**0.5982**	**0.5982**	**0.0000**	**2,159.7967**	**2,159.7967**	**0.6985**		**2,174.4656**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0289	0.0268	0.3568	1.5300e-003	0.1232	8.3000e-004	0.1241	0.0327	7.7000e-004	0.0335		99.6656	99.6656	3.2700e-003		99.7344
Total	**0.0289**	**0.0268**	**0.3568**	**1.5300e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.7000e-004**	**0.0335**		**99.6656**	**99.6656**	**3.2700e-003**		**99.7344**

3.16 Years 10-15: Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	283.7973					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.7705
Total	**283.9681**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.7705**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1156	0.1071	1.4270	6.1200e-003	0.4929	3.3200e-003	0.4962	0.1307	3.0800e-003	0.1338		398.6625	398.6625	0.0131		398.9374

Total	**0.1156**	**0.1071**	**1.4270**	**6.1200e-003**	**0.4929**	**3.3200e-003**	**0.4962**	**0.1307**	**3.0800e-003**	**0.1338**		**398.6625**	**398.6625**	**0.0131**		**398.9374**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	283.7973					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0154		281.7705
Total	**283.8567**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.7705**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1156	0.1071	1.4270	6.1200e-003	0.4929	3.3200e-003	0.4962	0.1307	3.0800e-003	0.1338		398.6625	398.6625	0.0131		398.9374
Total	**0.1156**	**0.1071**	**1.4270**	**6.1200e-003**	**0.4929**	**3.3200e-003**	**0.4962**	**0.1307**	**3.0800e-003**	**0.1338**		**398.6625**	**398.6625**	**0.0131**		**398.9374**

3.17 Years 15-20: Site Preparation - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4265	13.0600	16.9420	0.0422		0.4214	0.4214		0.4214	0.4214		4,505.9752	4,505.9752	0.2173		4,510.5381

Total	**2.4265**	**13.0600**	**16.9420**	**0.0422**	**18.0663**	**0.4214**	**18.4876**	**9.9307**	**0.4214**	**10.3520**		**4,505.9752**	**4,505.9752**	**0.2173**		**4,510.5381**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0299	0.0284	0.3862	1.8400e-003	3.0077	1.0300e-003	3.0088	0.3244	9.6000e-004	0.3254		116.4200	116.4200	3.6300e-003		116.4962
Total	**0.0299**	**0.0284**	**0.3862**	**1.8400e-003**	**3.0077**	**1.0300e-003**	**3.0088**	**0.3244**	**9.6000e-004**	**0.3254**		**116.4200**	**116.4200**	**3.6300e-003**		**116.4962**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0974	0.0000	6.0974	3.3516	0.0000	3.3516			0.0000			0.0000
Off-Road	0.9515	19.4584	23.4003	0.0422		0.9611	0.9611		0.9611	0.9611	0.0000	4,505.9752	4,505.9752	0.2173		4,510.5381
Total	**0.9515**	**19.4584**	**23.4003**	**0.0422**	**6.0974**	**0.9611**	**7.0584**	**3.3516**	**0.9611**	**4.3127**	**0.0000**	**4,505.9752**	**4,505.9752**	**0.2173**		**4,510.5381**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0299	0.0284	0.3862	1.8400e-003	0.6004	1.0300e-003	0.6014	0.0840	9.6000e-004	0.0850		116.4200	116.4200	3.6300e-003		116.4962

Total	**0.0299**	**0.0284**	**0.3862**	**1.8400e-003**	**0.6004**	**1.0300e-003**	**0.6014**	**0.0840**	**9.6000e-004**	**0.0850**		**116.4200**	**116.4200**	**3.6300e-003**		**116.4962**

3.18 Years 15-20: Grading - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.9809	0.0000	8.9809	3.6297	0.0000	3.6297			0.0000			0.0000
Off-Road	3.2674	13.6648	25.9331	0.0677		0.4954	0.4954		0.4954	0.4954		7,164.4979	7,164.4979	0.2908		7,170.6050
Total	**3.2674**	**13.6648**	**25.9331**	**0.0677**	**8.9809**	**0.4954**	**9.4762**	**3.6297**	**0.4954**	**4.1251**		**7,164.4979**	**7,164.4979**	**0.2908**		**7,170.6050**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0333	0.0316	0.4291	2.0400e-003	3.3419	1.1500e-003	3.3431	0.3604	1.0700e-003	0.3615		129.3556	129.3556	4.0300e-003		129.4403
Total	**0.0333**	**0.0316**	**0.4291**	**2.0400e-003**	**3.3419**	**1.1500e-003**	**3.3431**	**0.3604**	**1.0700e-003**	**0.3615**		**129.3556**	**129.3556**	**4.0300e-003**		**129.4403**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0311	0.0000	3.0311	1.2250	0.0000	1.2250			0.0000			0.0000
Off-Road	1.5128	38.7648	37.9432	0.0677		1.3234	1.3234		1.3234	1.3234	0.0000	7,164.4979	7,164.4979	0.2908		7,170.6050

Total	**1.5128**	**38.7648**	**37.9432**	**0.0677**	**3.0311**	**1.3234**	**4.3544**	**1.2250**	**1.3234**	**2.5484**	**0.0000**	**7,164.4979**	**7,164.4979**	**0.2908**		**7,170.6050**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0333	0.0316	0.4291	2.0400e-003	0.6671	1.1500e-003	0.6682	0.0933	1.0700e-003	0.0944		129.3556	129.3556	4.0300e-003		129.4403
Total	**0.0333**	**0.0316**	**0.4291**	**2.0400e-003**	**0.6671**	**1.1500e-003**	**0.6682**	**0.0933**	**1.0700e-003**	**0.0944**		**129.3556**	**129.3556**	**4.0300e-003**		**129.4403**

3.19 Years 15-20: Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179	16.1313	0.0308		0.1476	0.1476		0.1476	0.1476		2,884.8300	2,884.8300	0.1158		2,887.2617
Total	**1.3041**	**7.9179**	**16.1313**	**0.0308**		**0.1476**	**0.1476**		**0.1476**	**0.1476**		**2,884.8300**	**2,884.8300**	**0.1158**		**2,887.2617**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8349	4.7807	9.2738	0.0319	22.6464	0.1128	22.7592	2.4255	0.1038	2.5293		2,992.6871	2,992.6871	0.0208		2,993.1246
Worker	0.5007	0.4754	6.4575	0.0307	50.2961	0.0173	50.3134	5.4245	0.0161	5.4406		1,946.8016	1,946.8016	0.0607		1,948.0757

Total	**1.3356**	**5.2560**	**15.7314**	**0.0626**	**72.9424**	**0.1301**	**73.0725**	**7.8500**	**0.1198**	**7.9699**		**4,939.4887**	**4,939.4887**	**0.0815**		**4,941.2003**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8300	2,884.8300	0.1158		2,887.2617
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8300**	**2,884.8300**	**0.1158**		**2,887.2617**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8349	4.7807	9.2738	0.0319	4.3403	0.1128	4.4531	0.5975	0.1038	0.7013		2,992.6871	2,992.6871	0.0208		2,993.1246
Worker	0.5007	0.4754	6.4575	0.0307	10.0393	0.0173	10.0566	1.4047	0.0161	1.4207		1,946.8016	1,946.8016	0.0607		1,948.0757
Total	**1.3356**	**5.2560**	**15.7314**	**0.0626**	**14.3796**	**0.1301**	**14.5097**	**2.0022**	**0.1198**	**2.1220**		**4,939.4887**	**4,939.4887**	**0.0815**		**4,941.2003**

3.19 Years 15-20: Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179	16.1313	0.0308		0.1476	0.1476		0.1476	0.1476		2,884.8300	2,884.8300	0.1158		2,887.2617
Total	**1.3041**	**7.9179**	**16.1313**	**0.0308**		**0.1476**	**0.1476**		**0.1476**	**0.1476**		**2,884.8300**	**2,884.8300**	**0.1158**		**2,887.2617**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8262	4.7536	9.2351	0.0319	22.6465	0.1129	22.7593	2.4255	0.1038	2.5294		2,993.1299	2,993.1299	0.0209		2,993.5677
Worker	0.4803	0.4627	6.3248	0.0307	50.2961	0.0174	50.3134	5.4245	0.0161	5.4407		1,938.3791	1,938.3791	0.0597		1,939.6323
Total	**1.3065**	**5.2163**	**15.5598**	**0.0626**	**72.9425**	**0.1302**	**73.0727**	**7.8501**	**0.1200**	**7.9700**		**4,931.5090**	**4,931.5090**	**0.0805**		**4,933.2001**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8300	2,884.8300	0.1158		2,887.2617
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8300**	**2,884.8300**	**0.1158**		**2,887.2617**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8262	4.7536	9.2351	0.0319	4.3404	0.1129	4.4532	0.5976	0.1038	0.7014		2,993.1299	2,993.1299	0.0209		2,993.5677
Worker	0.4803	0.4627	6.3248	0.0307	10.0393	0.0174	10.0567	1.4047	0.0161	1.4208		1,938.3791	1,938.3791	0.0597		1,939.6323

Total	**1.3065**	**5.2163**	**15.5598**	**0.0626**	**14.3797**	**0.1302**	**14.5099**	**2.0022**	**0.1200**	**2.1222**		**4,931.5090**	**4,931.5090**	**0.0805**		**4,933.2001**

3.20 Years 15-20: Paving - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800	15.5192	0.0275		0.3234	0.3234		0.3234	0.3234		2,599.9866	2,599.9866	0.1219		2,602.5460
Paving	39.5271					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**40.8820**	**6.9800**	**15.5192**	**0.0275**		**0.3234**	**0.3234**		**0.3234**	**0.3234**		**2,599.9866**	**2,599.9866**	**0.1219**		**2,602.5460**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0239	0.0231	0.3152	1.5300e-003	0.1232	8.7000e-004	0.1241	0.0327	8.0000e-004	0.0335		96.5970	96.5970	2.9700e-003		96.6594
Total	**0.0239**	**0.0231**	**0.3152**	**1.5300e-003**	**0.1232**	**8.7000e-004**	**0.1241**	**0.0327**	**8.0000e-004**	**0.0335**		**96.5970**	**96.5970**	**2.9700e-003**		**96.6594**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5490	11.0645	16.9276	0.0275		0.5982	0.5982		0.5982	0.5982	0.0000	2,599.9866	2,599.9866	0.1219		2,602.5460
Paving	39.5271					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Total	**40.0761**	**11.0645**	**16.9276**	**0.0275**		**0.5982**	**0.5982**		**0.5982**	**0.5982**	**0.0000**	**2,599.9866**	**2,599.9866**	**0.1219**		**2,602.5460**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0239	0.0231	0.3152	1.5300e-003	0.1232	8.7000e-004	0.1241	0.0327	8.0000e-004	0.0335		96.5970	96.5970	2.9700e-003		96.6594
Total	**0.0239**	**0.0231**	**0.3152**	**1.5300e-003**	**0.1232**	**8.7000e-004**	**0.1241**	**0.0327**	**8.0000e-004**	**0.0335**		**96.5970**	**96.5970**	**2.9700e-003**		**96.6594**

3.21 Years 15-20: Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	302.7171					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.6873
Total	**302.8479**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.6873**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0958	0.0922	1.2608	6.1200e-003	0.4929	3.4600e-003	0.4964	0.1307	3.2100e-003	0.1340		386.3879	386.3879	0.0119		386.6377

Total	**0.0958**	**0.0922**	**1.2608**	**6.1200e-003**	**0.4929**	**3.4600e-003**	**0.4964**	**0.1307**	**3.2100e-003**	**0.1340**		**386.3879**	**386.3879**	**0.0119**		**386.6377**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	302.7171					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0114		281.6873
Total	**302.7765**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.6873**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0958	0.0922	1.2608	6.1200e-003	0.4929	3.4600e-003	0.4964	0.1307	3.2100e-003	0.1340		386.3879	386.3879	0.0119		386.6377
Total	**0.0958**	**0.0922**	**1.2608**	**6.1200e-003**	**0.4929**	**3.4600e-003**	**0.4964**	**0.1307**	**3.2100e-003**	**0.1340**		**386.3879**	**386.3879**	**0.0119**		**386.6377**

3.22 Years 20-25: Site Preparation - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.1590	9.8255	16.2785	0.0422		0.2827	0.2827		0.2827	0.2827		4,505.9806	4,505.9806	0.1932		4,510.0370

Total	**2.1590**	**9.8255**	**16.2785**	**0.0422**	**18.0663**	**0.2827**	**18.3490**	**9.9307**	**0.2827**	**10.2134**		**4,505.9806**	**4,505.9806**	**0.1932**		**4,510.0370**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0253	0.0257	0.3567	1.8400e-003	3.0077	1.0500e-003	3.0088	0.3244	9.7000e-004	0.3254		114.6452	114.6452	3.4000e-003		114.7165
Total	**0.0253**	**0.0257**	**0.3567**	**1.8400e-003**	**3.0077**	**1.0500e-003**	**3.0088**	**0.3244**	**9.7000e-004**	**0.3254**		**114.6452**	**114.6452**	**3.4000e-003**		**114.7165**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0974	0.0000	6.0974	3.3516	0.0000	3.3516			0.0000			0.0000
Off-Road	0.9515	19.4584	23.4003	0.0422		0.9611	0.9611		0.9611	0.9611	0.0000	4,505.9806	4,505.9806	0.1932		4,510.0370
Total	**0.9515**	**19.4584**	**23.4003**	**0.0422**	**6.0974**	**0.9611**	**7.0584**	**3.3516**	**0.9611**	**4.3127**	**0.0000**	**4,505.9806**	**4,505.9806**	**0.1932**		**4,510.0370**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0253	0.0257	0.3567	1.8400e-003	0.6004	1.0500e-003	0.6014	0.0840	9.7000e-004	0.0850		114.6452	114.6452	3.4000e-003		114.7165

Total	**0.0253**	**0.0257**	**0.3567**	**1.8400e-003**	**0.6004**	**1.0500e-003**	**0.6014**	**0.0840**	**9.7000e-004**	**0.0850**		**114.6452**	**114.6452**	**3.4000e-003**		**114.7165**

3.23 Years 20-25: Grading - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.8400	0.0000	8.8400	3.6145	0.0000	3.6145			0.0000			0.0000
Off-Road	2.8969	9.4659	25.3404	0.0677		0.3157	0.3157		0.3157	0.3157		7,164.5058	7,164.5058	0.2559		7,169.8797
Total	**2.8969**	**9.4659**	**25.3404**	**0.0677**	**8.8400**	**0.3157**	**9.1557**	**3.6145**	**0.3157**	**3.9302**		**7,164.5058**	**7,164.5058**	**0.2559**		**7,169.8797**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0281	0.0286	0.3963	2.0400e-003	3.3419	1.1700e-003	3.3431	0.3604	1.0800e-003	0.3615		127.3836	127.3836	3.7700e-003		127.4628
Total	**0.0281**	**0.0286**	**0.3963**	**2.0400e-003**	**3.3419**	**1.1700e-003**	**3.3431**	**0.3604**	**1.0800e-003**	**0.3615**		**127.3836**	**127.3836**	**3.7700e-003**		**127.4628**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9835	0.0000	2.9835	1.2199	0.0000	1.2199			0.0000			0.0000
Off-Road	1.5128	38.7648	37.9432	0.0677		1.3234	1.3234		1.3234	1.3234	0.0000	7,164.5058	7,164.5058	0.2559		7,169.8797

Total	**1.5128**	**38.7648**	**37.9432**	**0.0677**	**2.9835**	**1.3234**	**4.3069**	**1.2199**	**1.3234**	**2.5433**	**0.0000**	**7,164.5058**	**7,164.5058**	**0.2559**		**7,169.8797**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0281	0.0286	0.3963	2.0400e-003	0.6671	1.1700e-003	0.6682	0.0933	1.0800e-003	0.0944		127.3836	127.3836	3.7700e-003		127.4628
Total	**0.0281**	**0.0286**	**0.3963**	**2.0400e-003**	**0.6671**	**1.1700e-003**	**0.6682**	**0.0933**	**1.0800e-003**	**0.0944**		**127.3836**	**127.3836**	**3.7700e-003**		**127.4628**

3.24 Years 20-25: Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2123	7.1510	16.0922	0.0308		0.0901	0.0901		0.0901	0.0901		2,884.8300	2,884.8300	0.1075		2,887.0878
Total	**1.2123**	**7.1510**	**16.0922**	**0.0308**		**0.0901**	**0.0901**		**0.0901**	**0.0901**		**2,884.8300**	**2,884.8300**	**0.1075**		**2,887.0878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7814	4.6455	9.0269	0.0319	22.6467	0.1129	22.7596	2.4256	0.1039	2.5295		2,994.2364	2,994.2364	0.0209		2,994.6751
Worker	0.4232	0.4297	5.9642	0.0307	50.2961	0.0175	50.3136	5.4245	0.0163	5.4408		1,917.1224	1,917.1224	0.0568		1,918.3155

Total	**1.2046**	**5.0752**	**14.9912**	**0.0626**	**72.9427**	**0.1304**	**73.0732**	**7.8502**	**0.1201**	**7.9703**		**4,911.3588**	**4,911.3588**	**0.0777**		**4,912.9906**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8300	2,884.8300	0.1075		2,887.0878
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8300**	**2,884.8300**	**0.1075**		**2,887.0878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7814	4.6455	9.0269	0.0319	4.3406	0.1129	4.4535	0.5977	0.1039	0.7015		2,994.2364	2,994.2364	0.0209		2,994.6751
Worker	0.4232	0.4297	5.9642	0.0307	10.0393	0.0175	10.0569	1.4047	0.0163	1.4209		1,917.1224	1,917.1224	0.0568		1,918.3155
Total	**1.2046**	**5.0752**	**14.9912**	**0.0626**	**14.3799**	**0.1304**	**14.5103**	**2.0023**	**0.1201**	**2.1224**		**4,911.3588**	**4,911.3588**	**0.0777**		**4,912.9906**

3.24 Years 20-25: Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2123	7.1510	16.0922	0.0308		0.0901	0.0901		0.0901	0.0901		2,884.8300	2,884.8300	0.1075		2,887.0878
Total	**1.2123**	**7.1510**	**16.0922**	**0.0308**		**0.0901**	**0.0901**		**0.0901**	**0.0901**		**2,884.8300**	**2,884.8300**	**0.1075**		**2,887.0878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					22.3984	0.0000	22.3984	2.3284	0.0000	2.3284			0.0000			0.0000
Worker					49.9724	0.0000	49.9724	5.2962	0.0000	5.2962			0.0000			0.0000
Total					**72.3708**	**0.0000**	**72.3708**	**7.6245**	**0.0000**	**7.6245**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8300	2,884.8300	0.1075		2,887.0878
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8300**	**2,884.8300**	**0.1075**		**2,887.0878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					4.0923	0.0000	4.0923	0.5004	0.0000	0.5004			0.0000			0.0000
Worker					9.7156	0.0000	9.7156	1.2763	0.0000	1.2763			0.0000			0.0000

Total					**13.8079**	**0.0000**	**13.8079**	**1.7767**	**0.0000**	**1.7767**			**0.0000**			**0.0000**

3.25 Years 20-25: Paving - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1165	4.7892	15.4905	0.0275		0.1832	0.1832		0.1832	0.1832		2,599.9866	2,599.9866	0.1001		2,602.0881
Paving	39.5271					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**40.6435**	**4.7892**	**15.4905**	**0.0275**		**0.1832**	**0.1832**		**0.1832**	**0.1832**		**2,599.9866**	**2,599.9866**	**0.1001**		**2,602.0881**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.1071	0.0000	0.1071	0.0263	0.0000	0.0263			0.0000			0.0000
Total					**0.1071**	**0.0000**	**0.1071**	**0.0263**	**0.0000**	**0.0263**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5490	11.0645	16.9276	0.0275		0.5982	0.5982		0.5982	0.5982	0.0000	2,599.9866	2,599.9866	0.1001		2,602.0881
Paving	39.5271					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Total	**40.0761**	**11.0645**	**16.9276**	**0.0275**		**0.5982**	**0.5982**		**0.5982**	**0.5982**	**0.0000**	**2,599.9866**	**2,599.9866**	**0.1001**		**2,602.0881**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.1071	0.0000	0.1071	0.0263	0.0000	0.0263			0.0000			0.0000
Total					**0.1071**	**0.0000**	**0.1071**	**0.0263**	**0.0000**	**0.0263**			**0.0000**			**0.0000**

3.26 Years 20-35: Architectural Coating - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	283.7973					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.6665
Total	**283.9152**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.6665**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.4284	0.0000	0.4284	0.1051	0.0000	0.1051			0.0000			0.0000

Total					**0.4284**	**0.0000**	**0.4284**	**0.1051**	**0.0000**	**0.1051**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	283.7973					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0104		281.6665
Total	**283.8567**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.6665**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.4284	0.0000	0.4284	0.1051	0.0000	0.1051			0.0000			0.0000
Total					**0.4284**	**0.0000**	**0.4284**	**0.1051**	**0.0000**	**0.1051**			**0.0000**			**0.0000**

3.27 Years 25-30: Site Preparation - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	1.9870	7.8508	15.8414	0.0422		0.1970	0.1970		0.1970	0.1970		4,505.9752	4,505.9752	0.1744		4,509.6384

Total	**1.9870**	**7.8508**	**15.8414**	**0.0422**	**18.0663**	**0.1970**	**18.2633**	**9.9307**	**0.1970**	**10.1277**		**4,505.9752**	**4,505.9752**	**0.1744**		**4,509.6384**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					2.9884	0.0000	2.9884	0.3167	0.0000	0.3167			0.0000			0.0000
Total					**2.9884**	**0.0000**	**2.9884**	**0.3167**	**0.0000**	**0.3167**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0974	0.0000	6.0974	3.3516	0.0000	3.3516			0.0000			0.0000
Off-Road	0.9515	19.4584	23.4003	0.0422		0.9611	0.9611		0.9611	0.9611	0.0000	4,505.9752	4,505.9752	0.1744		4,509.6384
Total	**0.9515**	**19.4584**	**23.4003**	**0.0422**	**6.0974**	**0.9611**	**7.0584**	**3.3516**	**0.9611**	**4.3127**	**0.0000**	**4,505.9752**	**4,505.9752**	**0.1744**		**4,509.6384**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.5810	0.0000	0.5810	0.0763	0.0000	0.0763			0.0000			0.0000

Total					**0.5810**	**0.0000**	**0.5810**	**0.0763**	**0.0000**	**0.0763**			**0.0000**			**0.0000**

3.28 Years 25-30: Grading - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.8400	0.0000	8.8400	3.6145	0.0000	3.6145			0.0000			0.0000
Off-Road	2.7089	7.3004	25.0541	0.0677		0.2260	0.2260		0.2260	0.2260		7,164.4966	7,164.4966	0.2358		7,169.4475
Total	**2.7089**	**7.3004**	**25.0541**	**0.0677**	**8.8400**	**0.2260**	**9.0659**	**3.6145**	**0.2260**	**3.8404**		**7,164.4966**	**7,164.4966**	**0.2358**		**7,169.4475**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					3.3204	0.0000	3.3204	0.3519	0.0000	0.3519			0.0000			0.0000
Total					**3.3204**	**0.0000**	**3.3204**	**0.3519**	**0.0000**	**0.3519**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9835	0.0000	2.9835	1.2199	0.0000	1.2199			0.0000			0.0000
Off-Road	1.5128	38.7648	37.9432	0.0677		1.3234	1.3234		1.3234	1.3234	0.0000	7,164.4966	7,164.4966	0.2358		7,169.4475

Total	**1.5128**	**38.7648**	**37.9432**	**0.0677**	**2.9835**	**1.3234**	**4.3069**	**1.2199**	**1.3234**	**2.5433**	**0.0000**	**7,164.4966**	**7,164.4966**	**0.2358**		**7,169.4475**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.6456	0.0000	0.6456	0.0848	0.0000	0.0848			0.0000			0.0000
Total					**0.6456**	**0.0000**	**0.6456**	**0.0848**	**0.0000**	**0.0848**			**0.0000**			**0.0000**

3.29 Years 25-30: Building Construction - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1926	6.8826	16.0929	0.0308		0.0734	0.0734		0.0734	0.0734		2,884.8303	2,884.8303	0.1038		2,887.0091
Total	**1.1926**	**6.8826**	**16.0929**	**0.0308**		**0.0734**	**0.0734**		**0.0734**	**0.0734**		**2,884.8303**	**2,884.8303**	**0.1038**		**2,887.0091**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					22.3984	0.0000	22.3984	2.3284	0.0000	2.3284			0.0000			0.0000
Worker					49.9724	0.0000	49.9724	5.2962	0.0000	5.2962			0.0000			0.0000

Total					**72.3708**	**0.0000**	**72.3708**	**7.6245**	**0.0000**	**7.6245**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8303	2,884.8303	0.1038		2,887.0091
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8303**	**2,884.8303**	**0.1038**		**2,887.0091**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					4.0923	0.0000	4.0923	0.5004	0.0000	0.5004			0.0000			0.0000
Worker					9.7156	0.0000	9.7156	1.2763	0.0000	1.2763			0.0000			0.0000
Total					**13.8079**	**0.0000**	**13.8079**	**1.7767**	**0.0000**	**1.7767**			**0.0000**			**0.0000**

3.29 Years 25-30: Building Construction - 2041

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1926	6.8826	16.0929	0.0308		0.0734	0.0734		0.0734	0.0734		2,884.8303	2,884.8303	0.1038		2,887.0091
Total	**1.1926**	**6.8826**	**16.0929**	**0.0308**		**0.0734**	**0.0734**		**0.0734**	**0.0734**		**2,884.8303**	**2,884.8303**	**0.1038**		**2,887.0091**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					22.3984	0.0000	22.3984	2.3284	0.0000	2.3284			0.0000			0.0000
Worker					49.9724	0.0000	49.9724	5.2962	0.0000	5.2962			0.0000			0.0000
Total					**72.3708**	**0.0000**	**72.3708**	**7.6245**	**0.0000**	**7.6245**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8303	2,884.8303	0.1038		2,887.0091
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8303**	**2,884.8303**	**0.1038**		**2,887.0091**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					4.0923	0.0000	4.0923	0.5004	0.0000	0.5004			0.0000			0.0000
Worker					9.7156	0.0000	9.7156	1.2763	0.0000	1.2763			0.0000			0.0000

Total					**13.8079**	**0.0000**	**13.8079**	**1.7767**	**0.0000**	**1.7767**			**0.0000**			**0.0000**

3.30 Years 25-30: Paving - 2041

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9902	3.5998	15.4879	0.0275		0.1138	0.1138		0.1138	0.1138		2,599.9866	2,599.9866	0.0874		2,601.8224
Paving	39.5271					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**40.5173**	**3.5998**	**15.4879**	**0.0275**		**0.1138**	**0.1138**		**0.1138**	**0.1138**		**2,599.9866**	**2,599.9866**	**0.0874**		**2,601.8224**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.1071	0.0000	0.1071	0.0263	0.0000	0.0263			0.0000			0.0000
Total					**0.1071**	**0.0000**	**0.1071**	**0.0263**	**0.0000**	**0.0263**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5490	11.0645	16.9276	0.0275		0.5982	0.5982		0.5982	0.5982	0.0000	2,599.9866	2,599.9866	0.0874		2,601.8224
Paving	39.5271					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Total	**40.0761**	**11.0645**	**16.9276**	**0.0275**		**0.5982**	**0.5982**		**0.5982**	**0.5982**	**0.0000**	**2,599.9866**	**2,599.9866**	**0.0874**		**2,601.8224**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.1071	0.0000	0.1071	0.0263	0.0000	0.0263			0.0000			0.0000
Total					**0.1071**	**0.0000**	**0.1071**	**0.0263**	**0.0000**	**0.0263**			**0.0000**			**0.0000**

3.31 Years 25-30: Architectural Coating - 2041

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	283.7973					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1149	0.7270	1.7923	2.9700e-003		7.4300e-003	7.4300e-003		7.4300e-003	7.4300e-003		281.4481	281.4481	9.9000e-003		281.6561
Total	**283.9122**	**0.7270**	**1.7923**	**2.9700e-003**		**7.4300e-003**	**7.4300e-003**		**7.4300e-003**	**7.4300e-003**		**281.4481**	**281.4481**	**9.9000e-003**		**281.6561**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.4284	0.0000	0.4284	0.1051	0.0000	0.1051			0.0000			0.0000

Total					**0.4284**	**0.0000**	**0.4284**	**0.1051**	**0.0000**	**0.1051**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	283.7973					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	9.9000e-003		281.6561
Total	**283.8567**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**9.9000e-003**		**281.6561**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.4284	0.0000	0.4284	0.1051	0.0000	0.1051			0.0000			0.0000
Total					**0.4284**	**0.0000**	**0.4284**	**0.1051**	**0.0000**	**0.1051**			**0.0000**			**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Implement Trip Reduction Program

Encourage Telecommuting and Alternative Work Schedules

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	76.8868	125.5891	652.6115	2.4764	155.6136	3.1107	158.7243	41.5771	2.8704	44.4475		178,605.0281	178,605.0281	3.9566		178,688.1176
Unmitigated	77.2685	127.3371	661.0084	2.5233	158.6870	3.1642	161.8512	42.3983	2.9197	45.3180		181,988.4688	181,988.4688	4.0263		182,073.0210

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
General Light Industry	27,913.89	5,295.39	2714.22	47,391,452	46,462,495
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	7,474.72	8,699.84	4394.56	9,936,352	9,756,076
Total	35,388.61	13,995.23	7,108.78	57,327,804	56,218,571

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	7.22	5.55	5.55	33.00	48.00	19.00	66	28	6
General Light Industry	7.22	5.85	5.55	59.00	28.00	13.00	92	5	3

Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0			
Regional Shopping Center	7.22	5.85	5.55	16.30	64.70	19.00	54	35	11			

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.439610	0.064325	0.188519	0.165588	0.061617	0.008591	0.013985	0.042670	0.001725	0.001053	0.008236	0.000439	0.003642

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.1037	10.0338	8.4284	0.0602		0.7626	0.7626		0.7626	0.7626		12,040.5525	12,040.5525	0.2308	0.2207	12,113.8293
NaturalGas Unmitigated	1.2255	11.1412	9.3586	0.0669		0.8467	0.8467		0.8467	0.8467		13,369.4762	13,369.4762	0.2563	0.2451	13,450.8406

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day											lb/day				
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	6325.7	0.0682	0.6202	0.5209	3.7200e-003		0.0471	0.0471		0.0471	0.0471		744.1998	744.1998	0.0143	0.0136	748.7289
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	107315	1.1573	10.5211	8.8377	0.0631		0.7996	0.7996		0.7996	0.7996		12,625.2764	12,625.2764	0.2420	0.2315	12,702.1117
Total		**1.2255**	**11.1412**	**9.3586**	**0.0669**		**0.8467**	**0.8467**		**0.8467**	**0.8467**		**13,369.4762**	**13,369.4762**	**0.2562**	**0.2451**	**13,450.8406**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day											lb/day				
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	5.71759	0.0617	0.5606	0.4709	3.3600e-003		0.0426	0.0426		0.0426	0.0426		672.6575	672.6575	0.0129	0.0123	676.7512
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	96.6271	1.0421	9.4733	7.9575	0.0568		0.7200	0.7200		0.7200	0.7200		11,367.8949	11,367.8949	0.2179	0.2084	11,437.0780
Total		**1.1037**	**10.0338**	**8.4284**	**0.0602**		**0.7626**	**0.7626**		**0.7626**	**0.7626**		**12,040.5525**	**12,040.5525**	**0.2308**	**0.2207**	**12,113.8293**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Mitigated	323.4107	2.9000e-003	0.3230	2.0000e-005		1.1500e-003	1.1500e-003		1.1500e-003	1.1500e-003		0.6962	0.6962	1.7900e-003		0.7339
Unmitigated	323.4107	2.9000e-003	0.3230	2.0000e-005		1.1500e-003	1.1500e-003		1.1500e-003	1.1500e-003		0.6962	0.6962	1.7900e-003		0.7339

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	7.3881					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	315.9931					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0295	2.9000e-003	0.3230	2.0000e-005		1.1500e-003	1.1500e-003		1.1500e-003	1.1500e-003		0.6962	0.6962	1.7900e-003		0.7339
Total	**323.4107**	**2.9000e-003**	**0.3230**	**2.0000e-005**		**1.1500e-003**	**1.1500e-003**		**1.1500e-003**	**1.1500e-003**		**0.6962**	**0.6962**	**1.7900e-003**		**0.7339**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	7.3881					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	315.9931					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0295	2.9000e-003	0.3230	2.0000e-005		1.1500e-003	1.1500e-003		1.1500e-003	1.1500e-003		0.6962	0.6962	1.7900e-003		0.7339
Total	**323.4107**	**2.9000e-003**	**0.3230**	**2.0000e-005**		**1.1500e-003**	**1.1500e-003**		**1.1500e-003**	**1.1500e-003**		**0.6962**	**0.6962**	**1.7900e-003**		**0.7339**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

CalEEMod Criteria Pollutant Daily Emission Estimates for the Proposed HPCO Amendment

2015 HPCO Amendment

Placer County APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	60.00	1000sqft	5.54	60,000.00	0
Office Park	300.00	1000sqft	32.85	300,000.00	0
General Light Industry	1,426.00	1000sqft	243.98	1,426,000.00	0
Parking Lot	150.83	Acre	150.83	6,570,154.80	0
City Park	71.01	Acre	71.01	3,093,195.60	0
Apartments Mid Rise	396.00	Dwelling Unit	21.97	396,000.00	1133
Condo/Townhouse	310.00	Dwelling Unit	35.60	310,000.00	887
Single Family Housing	242.00	Dwelling Unit	46.76	435,600.00	692
Regional Shopping Center	170.00	1000sqft	19.29	170,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2035
Utility Company	Roseville Electric				

CO2 Intensity (lb/MWhr)	642	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Used 2020 CO2 intensity factors

Land Use - Table 9: Current Proposed land Uses Comparison

Construction Phase - Assumed construction schedule

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Updated construction trips using trip rates for each land uses type provided by CalEEMod Appendix A

On-road Fugitive Dust - Assumed 0.1 miles of unpaved roads.

Grading - Total Acres Disturbed

Architectural Coating - Adjusted architectural coating during construction using equations found in the CalEEMod Appendix A.

Vehicle Trips - Traffic trip rates are based on the Fehr Peers Preliminary Traffic Study for Campus Oaks Technical Memorandum dated August 28, 2014.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Woodstoves - Assumed no wood buring fireplaces or stoves. Mid to low density houseing my have some gas firplaces, used CalEEMod defualt values.

Area Coating - removed open space square footages from architectural coating.

Energy Use - Updated to 2013 Title 24 Standards

Water And Wastewater -

Solid Waste -

Construction Off-road Equipment Mitigation - Used mitigation proposed in the 1996 HPMP EIR

Mobile Land Use Mitigation -

Mobile Commute Mitigation - 1996 HP Master Plan EIR - MM 4.10-3

Area Mitigation - Used mitigation proposed in the 1996 HPMP EIR

Energy Mitigation - 1996 HP Master Plan EIR - MM 4.10-3. Project would exceed Title 24 by 10%.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	2,623,150.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	2,623,150.00	265,000.00
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	2,623,150.00	713,000.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	7,869,450.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	7,869,450.00	795,000.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	7,869,450.00	2,139,000.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	770,580.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	770,580.00	0.00

tblArchitecturalCoating	ConstArea_Residential_Interior	2,311,740.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	2,311,740.00	0.00
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tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
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tblAreaCoating	Area_EF_Nonresidential_Interior	250	100
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblAreaCoating	Area_Nonresidential_Exterior	2623152	978000
tblAreaCoating	Area_Nonresidential_Interior	7869457	2934000
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	100	250
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	27.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
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tblConstructionPhase	NumDays	770.00	290.00
tblConstructionPhase	NumDays	770.00	74.00
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tblConstructionPhase	NumDays	10,850.00	1,018.00
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tblConstructionPhase	NumDays	1,085.00	101.00
tblConstructionPhase	NumDays	770.00	290.00
tblConstructionPhase	NumDays	770.00	73.00
tblConstructionPhase	NumDays	770.00	74.00
tblConstructionPhase	NumDays	420.00	40.00
tblConstructionPhase	NumDays	420.00	159.00
tblConstructionPhase	NumDays	420.00	40.00
tblConstructionPhase	PhaseEndDate	7/7/2045	7/8/2045
tblConstructionPhase	PhaseEndDate	4/17/2043	4/19/2043
tblConstructionPhase	PhaseEndDate	12/13/2024	12/15/2024
tblConstructionPhase	PhaseEndDate	5/27/2044	5/29/2044
tblConstructionPhase	PhaseEndDate	2/13/2026	2/14/2026
tblEnergyUse	T24E	322.48	241.86
tblEnergyUse	T24E	301.15	225.86
tblEnergyUse	T24E	2.02	1.52
tblEnergyUse	T24E	3.93	2.95
tblEnergyUse	T24E	3.66	2.75

tblEnergyUse	T24E	4.76	3.57
tblEnergyUse	T24E	729.62	547.22
tblEnergyUse	T24NG	8,261.25	6,195.90
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tblEnergyUse	T24NG	16.83	12.62
tblEnergyUse	T24NG	11.48	8.61
tblEnergyUse	T24NG	11.93	8.95
tblEnergyUse	T24NG	26,218.01	19,663.00
tblFireplaces	NumberGas	217.80	0.00
tblFireplaces	NumberNoFireplace	39.60	392.00
tblFireplaces	NumberNoFireplace	31.00	139.50
tblFireplaces	NumberNoFireplace	24.20	108.90
tblFireplaces	NumberWood	138.60	0.00
tblFireplaces	NumberWood	108.50	0.00
tblFireplaces	NumberWood	84.70	0.00
tblGrading	AcresOfGrading	1,020.00	149.26
tblGrading	AcresOfGrading	257.50	102.37
tblGrading	AcresOfGrading	252.50	57.68
tblLandUse	LotAcreage	1.38	5.54
tblLandUse	LotAcreage	6.89	32.85
tblLandUse	LotAcreage	32.74	243.98
tblLandUse	LotAcreage	10.42	21.97
tblLandUse	LotAcreage	19.38	35.60

tblLandUse	LotAcreage	78.57	46.76
tblLandUse	LotAcreage	3.90	19.29
tblOnRoadDust	VendorPercentPave	100.00	98.00
tblOnRoadDust	VendorPercentPave	100.00	98.00
tblOnRoadDust	VendorPercentPave	100.00	98.00
tblOnRoadDust	WorkerPercentPave	100.00	99.00
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tblOnRoadDust	WorkerPercentPave	100.00	99.00
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tblOnRoadDust	WorkerPercentPave	100.00	99.00
tblOnRoadDust	WorkerPercentPave	100.00	99.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	793.8	642
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblProjectCharacteristics	OperationalYear	2014	2035
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tblTripsAndVMT	WorkerTripNumber	1,085.00	128.00
tblTripsAndVMT	WorkerTripNumber	5,423.00	1,012.00
tblTripsAndVMT	WorkerTripNumber	1,085.00	202.00

tblTripsAndVMT	WorkerTripNumber	5,423.00	762.00
tblTripsAndVMT	WorkerTripNumber	1,085.00	152.00
tblTripsAndVMT	WorkerTripNumber	5,423.00	642.00
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tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	7.16	5.05
tblVehicleTrips	ST_TR	1.32	5.53
tblVehicleTrips	ST_TR	2.37	3.87
tblVehicleTrips	ST_TR	1.64	2.45
tblVehicleTrips	ST_TR	49.97	37.15
tblVehicleTrips	ST_TR	10.08	8.28
tblVehicleTrips	SU_TR	6.07	5.03
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	6.07	4.40
tblVehicleTrips	SU_TR	0.68	2.85
tblVehicleTrips	SU_TR	0.98	0.64
tblVehicleTrips	SU_TR	0.76	0.40
tblVehicleTrips	SU_TR	25.24	18.76
tblVehicleTrips	SU_TR	8.77	7.21
tblVehicleTrips	WD_TR	6.59	5.49
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	6.59	4.80
tblVehicleTrips	WD_TR	6.97	29.20
tblVehicleTrips	WD_TR	11.01	9.60
tblVehicleTrips	WD_TR	11.42	6.06
tblVehicleTrips	WD_TR	42.94	31.92
tblVehicleTrips	WD_TR	9.57	7.86

tblWoodstoves	NumberCatalytic	19.80	0.00
tblWoodstoves	NumberCatalytic	15.50	0.00
tblWoodstoves	NumberCatalytic	12.10	0.00
tblWoodstoves	NumberNoncatalytic	19.80	0.00
tblWoodstoves	NumberNoncatalytic	15.50	0.00
tblWoodstoves	NumberNoncatalytic	12.10	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	6.8611	79.1273	51.8889	0.0638	21.0740	3.8033	24.1633	10.2551	3.4991	13.0972	0.0000	6,660.6748	6,660.6748	1.9444	0.0000	6,701.5081
2016	9.7757	74.8854	86.5780	0.1749	192.4305	3.5853	194.9040	20.5879	3.2985	22.9014	0.0000	16,115.6908	16,115.6908	1.9423	0.0000	16,156.4785
2017	8.7654	53.4809	79.5617	0.1748	192.4310	2.2155	194.6465	20.5881	2.0723	22.6604	0.0000	15,714.3144	15,714.3144	0.9532	0.0000	15,734.3306
2018	7.7457	47.8439	72.8718	0.1746	192.4307	1.8872	194.3179	20.5880	1.7663	22.3543	0.0000	15,331.6104	15,331.6104	0.9192	0.0000	15,350.9136
2019	7.0686	43.4868	69.2100	0.1744	192.4309	1.6523	194.0832	20.5881	1.5463	22.1344	0.0000	14,975.5077	14,975.5077	0.8929	0.0000	14,994.2594
2020	193.6922	49.4321	39.0537	0.0638	21.0740	2.2630	23.0058	10.2551	2.0820	12.0323	0.0000	6,121.5416	6,121.5416	1.9387	0.0000	6,162.2537

2021	5.3606	44.5380	55.6855	0.1532	164.1865	2.0151	165.4043	17.5629	1.8539	18.7028	0.0000	12,788.8653	12,788.8653	1.9389	0.0000	12,829.5821
2022	5.0331	27.7705	54.0625	0.1531	164.1867	1.0646	165.2513	17.5630	0.9966	18.5596	0.0000	12,715.6629	12,715.6629	0.8081	0.0000	12,732.6325
2023	4.7365	25.3540	52.4836	0.1531	164.1869	0.9446	165.1315	17.5630	0.8840	18.4470	0.0000	12,646.6650	12,646.6650	0.7960	0.0000	12,663.3817
2024	6.3405	24.2414	51.2779	0.1531	164.1872	0.8596	165.0468	17.5632	0.8038	18.3669	0.0000	12,593.5731	12,593.5731	0.7878	0.0000	12,610.1165
2025	68.6644	23.5590	25.3298	0.0410	21.0740	1.0303	22.1043	10.2551	0.9479	11.2029	0.0000	3,914.5936	3,914.5936	1.2310	0.0000	3,940.4452
2026	3.0407	27.2963	31.8272	0.0638	21.0740	1.1878	22.1043	10.2551	1.0928	11.2030	0.0000	6,115.2401	6,115.2401	1.9392	0.0000	6,155.9628
2027	5.7495	28.4845	67.3600	0.2234	256.5730	1.1878	257.4848	27.4497	1.0928	28.2999	0.0000	17,968.6703	17,968.6703	1.9391	0.0000	18,009.3910
2028	5.6717	28.3074	66.5248	0.2235	256.5731	0.9124	257.4855	27.4497	0.8508	28.3005	0.0000	17,921.5606	17,921.5606	0.8702	0.0000	17,939.8340
2029	5.5742	28.1546	65.7438	0.2235	256.5732	0.9129	257.4861	27.4498	0.8512	28.3010	0.0000	17,881.6407	17,881.6407	0.8662	0.0000	17,899.8301
2030	5.4303	23.5039	64.9769	0.2274	256.5733	0.5358	257.1091	27.4498	0.5052	27.9550	0.0000	18,186.6035	18,186.6035	0.3807	0.0000	18,194.5989
2031	5.3364	23.3821	64.4171	0.2275	256.5735	0.5362	257.1098	27.4499	0.5056	27.9555	0.0000	18,159.5817	18,159.5817	0.3774	0.0000	18,167.5079
2032	5.2292	23.2442	63.8726	0.2275	256.5737	0.5366	257.1103	27.4500	0.5059	27.9559	0.0000	18,137.0664	18,137.0664	0.3746	0.0000	18,144.9332
2033	5.1445	23.1235	63.3860	0.2275	256.5739	0.5368	257.1107	27.4501	0.5061	27.9562	0.0000	18,118.9009	18,118.9009	0.3722	0.0000	18,126.7172
2034	5.0797	23.0284	62.9718	0.2275	256.5740	0.5369	257.1109	27.4501	0.5062	27.9563	0.0000	18,103.6031	18,103.6031	0.3699	0.0000	18,111.3716
2035	4.9214	22.1881	62.5568	0.2275	256.5742	0.4793	257.0535	27.4502	0.4486	27.8988	0.0000	18,091.3514	18,091.3514	0.3597	0.0000	18,098.9042
2036	1.2123	7.1510	16.0922	0.0308	254.7595	0.0901	254.8495	26.7340	0.0901	26.8240	0.0000	2,884.8300	2,884.8300	0.1075	0.0000	2,887.0878
2037	1.2123	7.1510	16.0922	0.0308	254.7595	0.0901	254.8495	26.7340	0.0901	26.8240	0.0000	2,884.8300	2,884.8300	0.1075	0.0000	2,887.0878
2038	1.2123	7.1510	16.0922	0.0308	254.7595	0.0901	254.8495	26.7340	0.0901	26.8240	0.0000	2,884.8300	2,884.8300	0.1075	0.0000	2,887.0878

2039	1.2123	7.1510	16.0922	0.0308	254.7595	0.0901	254.8495	26.7340	0.0901	26.8240	0.0000	2,884.8300	2,884.8300	0.1075	0.0000	2,887.0878
2040	1.1926	6.8826	16.0929	0.0308	254.7595	0.0734	254.8329	26.7340	0.0734	26.8074	0.0000	2,884.8303	2,884.8303	0.1038	0.0000	2,887.0091
2041	1.1926	6.8826	16.0929	0.0308	254.7595	0.0734	254.8329	26.7340	0.0734	26.8074	0.0000	2,884.8303	2,884.8303	0.1038	0.0000	2,887.0091
2042	1.1926	6.8826	16.0929	0.0308	254.7595	0.0734	254.8329	26.7340	0.0734	26.8074	0.0000	2,884.8303	2,884.8303	0.1038	0.0000	2,887.0091
2043	2.3529	6.8826	16.0929	0.0308	254.7595	0.1138	254.8329	26.7340	0.1138	26.8074	0.0000	2,884.8303	2,884.8303	0.1038	0.0000	2,887.0091
2044	45.6977	3.5998	15.4879	0.0275	1.4422	0.1138	1.4496	0.3540	0.1138	0.3614	0.0000	2,599.9866	2,599.9866	0.0874	0.0000	2,601.8224
2045	45.6977	0.7270	1.7923	2.9700e-003	1.4422	7.4300e-003	1.4496	0.3540	7.4300e-003	0.3614	0.0000	281.4481	281.4481	9.9000e-003	0.0000	281.6561
Total	**477.3967**	**804.8935**	**1,397.6608**	**3.8557**	**5,860.8884**	**29.4989**	**5,886.8526**	**655.2533**	**27.4313**	**679.4899**	**0.0000**	**324,222.9942**	**324,222.9942**	**22.9440**	**0.0000**	**324,704.8188**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	1.5989	29.8603	38.9921	0.0638	6.6977	1.3245	7.6598	3.4356	1.3244	4.3976	0.0000	6,660.6748	6,660.6748	1.9444	0.0000	6,701.5081
2016	7.0407	44.4980	85.8870	0.1749	37.3627	1.4076	38.7703	5.1035	1.3666	6.4701	0.0000	16,115.6908	16,115.6908	1.9423	0.0000	16,156.4785
2017	6.3342	41.2494	79.2482	0.1748	37.3631	1.3358	38.6989	5.1036	1.3009	6.4045	0.0000	15,714.3144	15,714.3144	0.9532	0.0000	15,734.3306
2018	5.7483	38.7572	73.1548	0.1746	37.3628	1.2945	38.6573	5.1035	1.2631	6.3667	0.0000	15,331.6104	15,331.6104	0.9192	0.0000	15,350.9136
2019	6.0036	36.6959	69.9052	0.1744	37.3630	1.2688	38.6318	5.1036	1.2396	6.3432	0.0000	14,975.5077	14,975.5077	0.8929	0.0000	14,994.2594
2020	193.5095	29.8279	38.5712	0.0638	6.6977	1.3244	7.6597	3.4356	1.3243	4.3975	0.0000	6,121.5416	6,121.5416	1.9387	0.0000	6,162.2537
2021	4.1388	29.8250	56.9634	0.1532	31.8575	1.3244	33.0219	4.3490	1.3244	5.4927	0.0000	12,788.8653	12,788.8653	1.9389	0.0000	12,829.5821
2022	4.0051	26.4083	55.5505	0.1531	31.8577	1.1605	33.0181	4.3491	1.1400	5.4891	0.0000	12,715.6629	12,715.6629	0.8081	0.0000	12,732.6325
2023	3.8416	25.2156	54.0899	0.1531	31.8578	1.1495	33.0073	4.3492	1.1299	5.4791	0.0000	12,646.6650	12,646.6650	0.7960	0.0000	12,663.3817
2024	5.9205	25.0381	52.9603	0.1531	31.8581	1.1506	33.0088	4.3493	1.1310	5.4803	0.0000	12,593.5731	12,593.5731	0.7878	0.0000	12,610.1165
2025	68.5529	19.4917	23.8422	0.0410	6.6977	0.9621	7.6598	3.4356	0.9620	4.3976	0.0000	3,914.5936	3,914.5936	1.2310	0.0000	3,940.4452
2026	1.5514	29.8154	38.4189	0.0638	6.6977	1.3245	7.6598	3.4356	1.3244	4.3976	0.0000	6,115.2401	6,115.2401	1.9392	0.0000	6,155.9628
2027	5.0593	30.2490	69.1238	0.2234	49.8083	1.3245	51.0968	6.8029	1.3244	8.0609	0.0000	17,968.6703	17,968.6703	1.9391	0.0000	18,009.3910

2028	4.9815	30.0719	68.2886	0.2235	49.8085	1.2890	51.0975	6.8030	1.2585	8.0614	0.0000	17,921.5606	17,921.5606	0.8702	0.0000	17,939.8340
2029	4.8840	29.9190	67.5076	0.2235	49.8086	1.2895	51.0980	6.8031	1.2589	8.0619	0.0000	17,881.6407	17,881.6407	0.8662	0.0000	17,899.8301
2030	4.7974	29.7602	66.6612	0.2274	49.8087	1.2898	51.0984	6.8031	1.2592	8.0623	0.0000	18,186.6035	18,186.6035	0.3807	0.0000	18,194.5989
2031	4.7035	29.6383	66.1014	0.2275	49.8089	1.2902	51.0991	6.8032	1.2596	8.0628	0.0000	18,159.5817	18,159.5817	0.3774	0.0000	18,167.5079
2032	4.5963	29.5005	65.5569	0.2275	49.8091	1.2905	51.0996	6.8033	1.2599	8.0631	0.0000	18,137.0664	18,137.0664	0.3746	0.0000	18,144.9332
2033	4.5116	29.3798	65.0703	0.2275	49.8093	1.2908	51.1001	6.8033	1.2601	8.0635	0.0000	18,118.9009	18,118.9009	0.3722	0.0000	18,126.7172
2034	4.4468	29.2847	64.6561	0.2275	49.8094	1.2909	51.1003	6.8034	1.2602	8.0636	0.0000	18,103.6031	18,103.6031	0.3699	0.0000	18,111.3716
2035	4.3803	29.2113	64.2802	0.2275	49.8096	1.2908	51.1004	6.8034	1.2602	8.0636	0.0000	18,091.3514	18,091.3514	0.3597	0.0000	18,098.9042
2036	0.6712	14.1741	17.8156	0.0308	47.9949	0.9016	48.8964	6.0873	0.9016	6.9889	0.0000	2,884.8300	2,884.8300	0.1075	0.0000	2,887.0878
2037	0.6712	14.1741	17.8156	0.0308	47.9949	0.9016	48.8964	6.0873	0.9016	6.9889	0.0000	2,884.8300	2,884.8300	0.1075	0.0000	2,887.0878
2038	0.6712	14.1741	17.8156	0.0308	47.9949	0.9016	48.8964	6.0873	0.9016	6.9889	0.0000	2,884.8300	2,884.8300	0.1075	0.0000	2,887.0878
2039	0.6712	14.1741	17.8156	0.0308	47.9949	0.9016	48.8964	6.0873	0.9016	6.9889	0.0000	2,884.8300	2,884.8300	0.1075	0.0000	2,887.0878
2040	0.6712	14.1741	17.8156	0.0308	47.9949	0.9016	48.8964	6.0873	0.9016	6.9889	0.0000	2,884.8303	2,884.8303	0.1038	0.0000	2,887.0091
2041	0.6712	14.1741	17.8156	0.0308	47.9949	0.9016	48.8964	6.0873	0.9016	6.9889	0.0000	2,884.8303	2,884.8303	0.1038	0.0000	2,887.0091
2042	0.6712	14.1741	17.8156	0.0308	47.9949	0.9016	48.8964	6.0873	0.9016	6.9889	0.0000	2,884.8303	2,884.8303	0.1038	0.0000	2,887.0091
2043	1.9117	14.1741	17.8156	0.0308	47.9949	0.9016	48.8964	6.0873	0.9016	6.9889	0.0000	2,884.8303	2,884.8303	0.1038	0.0000	2,887.0091
2044	45.6423	11.0645	16.9276	0.0275	1.4422	0.5982	1.5373	0.3540	0.5982	0.6245	0.0000	2,599.9866	2,599.9866	0.0874	0.0000	2,601.8224
2045	45.6423	1.3570	1.8324	2.9700e-003	1.4422	0.0951	1.5373	0.3540	0.0951	0.4491	0.0000	281.4481	281.4481	9.9000e-003	0.0000	281.6561

Total	448.5006	769.5121	1,426.1144	3.8557	1,138.7970	34.5791	1,171.5896	162.1880	34.1374	194.6633	0.0000	324,222.9942	324,222.9942	22.9440	0.0000	324,704.8187

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**6.05**	**4.40**	**-2.04**	**0.00**	**80.57**	**-17.22**	**80.10**	**75.25**	**-24.45**	**71.35**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	284.9060	0.9012	78.1895	4.1500e-003		0.8417	0.8417		0.8374	0.8374	0.0000	6,570.4807	6,570.4807	0.2585	0.1179	6,612.4486
Energy	1.1994	10.6671	7.4272	0.0654		0.8286	0.8286		0.8286	0.8286		13,083.8458	13,083.8458	0.2508	0.2399	13,163.4719
Mobile	101.0650	115.0826	628.5540	1.7158	102.2468	2.3956	104.6423	27.3185	2.2120	29.5305		123,758.9240	123,758.9240	2.9772		123,821.4454
Total	**387.1703**	**126.6509**	**714.1707**	**1.7853**	**102.2468**	**4.0659**	**106.3127**	**27.3185**	**3.8780**	**31.1965**	**0.0000**	**143,413.2505**	**143,413.2505**	**3.4865**	**0.3577**	**143,597.3658**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	283.8001	0.7166	59.3720	2.6900e-003		0.7311	0.7311		0.7268	0.7268	0.0000	6,527.9778	6,527.9778	0.1940	0.1179	6,568.5901
Energy	1.0889	9.6816	6.7210	0.0594		0.7523	0.7523		0.7523	0.7523		11,878.7767	11,878.7767	0.2277	0.2178	11,951.0689
Mobile	101.0650	115.0826	628.5540	1.7158	102.2468	2.3956	104.6423	27.3185	2.2120	29.5305		123,758.9240	123,758.9240	2.9772		123,821.4454
Total	**385.9540**	**125.4808**	**694.6470**	**1.7778**	**102.2468**	**3.8790**	**106.1258**	**27.3185**	**3.6911**	**31.0096**	**0.0000**	**142,165.6785**	**142,165.6785**	**3.3989**	**0.3357**	**142,341.1043**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.31**	**0.92**	**2.73**	**0.42**	**0.00**	**4.60**	**0.18**	**0.00**	**4.82**	**0.60**	**0.00**	**0.87**	**0.87**	**2.51**	**6.17**	**0.87**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Years 1-5: Site Preparation	Site Preparation	7/1/2015	8/25/2015	5	40	
2	Years 1-5: Grading	Grading	8/26/2015	1/15/2016	5	103	
3	Years 1-5: Buiding Construction	Building Construction	1/16/2016	12/11/2019	5	1018	
4	Years 1-5: Paving	Paving	12/12/2019	3/23/2020	5	73	
5	Years 1-5: Architectural Coating	Architectural Coating	3/24/2020	7/3/2020	5	74	
6	Years 5-10: Site Preparation	Site Preparation	7/4/2020	8/28/2020	5	40	
7	Years 5-10: Grading	Grading	8/29/2020	1/18/2021	5	101	
8	Years 5-10: Building Construction	Building Construction	1/19/2021	12/15/2024	5	1019	
9	Years 5-10: Paving	Paving	12/16/2024	3/27/2025	5	74	
10	Years 5-10: Architectural Coating	Architectural Coating	3/28/2025	7/7/2025	5	72	
11	Years 10-30: Site Preparation	Site Preparation	7/8/2025	2/14/2026	5	159	
12	Years 10-30: Grading	Grading	2/15/2026	9/8/2027	5	408	
13	Years 10-30: Building Construction	Building Construction	9/9/2027	4/19/2043	5	4072	
14	Years 10-30: Paving	Paving	4/20/2043	5/29/2044	5	290	

15	Years 10-30: Architectural Coating	Architectural Coating	5/30/2044	7/8/2045	5	290	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 2,311,740; Residential Outdoor: 770,580; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Years 1-5: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 1-5: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 1-5: Grading	Excavators	2	8.00	162	0.38
Years 1-5: Grading	Graders	1	8.00	174	0.41
Years 1-5: Grading	Rubber Tired Dozers	1	8.00	255	0.40
Years 1-5: Grading	Scrapers	2	8.00	361	0.48
Years 1-5: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 1-5: Buiding Construction	Cranes	1	7.00	226	0.29
Years 1-5: Buiding Construction	Forklifts	3	8.00	89	0.20
Years 1-5: Buiding Construction	Generator Sets	1	8.00	84	0.74
Years 1-5: Buiding Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 1-5: Buiding Construction	Welders	1	8.00	46	0.45
Years 1-5: Paving	Pavers	2	8.00	125	0.42
Years 1-5: Paving	Paving Equipment	2	8.00	130	0.36

Years 1-5: Paving	Rollers	2	8.00	80	0.38
Years 1-5: Architectural Coating	Air Compressors	1	6.00	78	0.48
Years 5-10: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 5-10: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 5-10: Grading	Excavators	2	8.00	162	0.38
Years 5-10: Grading	Graders	1	8.00	174	0.41
Years 5-10: Grading	Rubber Tired Dozers	1	8.00	255	0.40
Years 5-10: Grading	Scrapers	2	8.00	361	0.48
Years 5-10: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 5-10: Building Construction	Cranes	1	7.00	226	0.29
Years 5-10: Building Construction	Forklifts	3	8.00	89	0.20
Years 5-10: Building Construction	Generator Sets	1	8.00	84	0.74
Years 5-10: Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 5-10: Building Construction	Welders	1	8.00	46	0.45
Years 5-10: Paving	Pavers	2	8.00	125	0.42
Years 5-10: Paving	Paving Equipment	2	8.00	130	0.36
Years 5-10: Paving	Rollers	2	8.00	80	0.38
Years 5-10: Architectural Coating	Air Compressors	1	6.00	78	0.48
Years 10-30: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 10-30: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 10-30: Grading	Excavators	2	8.00	162	0.38
Years 10-30: Grading	Graders	1	8.00	174	0.41
Years 10-30: Grading	Rubber Tired Dozers	1	8.00	255	0.40
Years 10-30: Grading	Scrapers	2	8.00	361	0.48

Years 10-30: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 10-30: Building Construction	Cranes	1	7.00	226	0.29
Years 10-30: Building Construction	Forklifts	3	8.00	89	0.20
Years 10-30: Building Construction	Generator Sets	1	8.00	84	0.74
Years 10-30: Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 10-30: Building Construction	Welders	1	8.00	46	0.45
Years 10-30: Paving	Pavers	2	8.00	125	0.42
Years 10-30: Paving	Paving Equipment	2	8.00	130	0.36
Years 10-30: Paving	Rollers	2	8.00	80	0.38
Years 10-30: Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Years 1-5: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 1-5: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 1-5: Buiding Construction	9	762.00	294.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 1-5: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 1-5: Architectural	1	152.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Building Construction	9	642.00	257.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Architectural	1	128.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Years 10-30: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-30: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-30: Building	9	1,012.00	395.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-30: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-30: Architectural	1	202.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Years 1-5: Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412		4,111.7444	4,111.7444	1.2275		4,137.5225

Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**		**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5225**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0774	0.0725	0.9440	1.8400e-003	3.0077	1.0300e-003	3.0088	0.3244	9.4000e-004	0.3253		156.9883	156.9883	7.2300e-003		157.1401
Total	**0.0774**	**0.0725**	**0.9440**	**1.8400e-003**	**3.0077**	**1.0300e-003**	**3.0088**	**0.3244**	**9.4000e-004**	**0.3253**		**156.9883**	**156.9883**	**7.2300e-003**		**157.1401**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0974	0.0000	6.0974	3.3516	0.0000	3.3516			0.0000			0.0000
Off-Road	0.9515	19.4584	23.4003	0.0391		0.9611	0.9611		0.9611	0.9611	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224
Total	**0.9515**	**19.4584**	**23.4003**	**0.0391**	**6.0974**	**0.9611**	**7.0584**	**3.3516**	**0.9611**	**4.3127**	**0.0000**	**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5224**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0774	0.0725	0.9440	1.8400e-003	0.6004	1.0300e-003	0.6014	0.0840	9.4000e-004	0.0849		156.9883	156.9883	7.2300e-003		157.1401

Total	**0.0774**	**0.0725**	**0.9440**	**1.8400e-003**	**0.6004**	**1.0300e-003**	**0.6014**	**0.0840**	**9.4000e-004**	**0.0849**		**156.9883**	**156.9883**	**7.2300e-003**		**157.1401**

3.3 Years 1-5: Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0761	0.0000	7.0761	3.4240	0.0000	3.4240			0.0000			0.0000
Off-Road	6.7751	79.0467	50.8400	0.0618		3.8022	3.8022		3.4980	3.4980		6,486.2433	6,486.2433	1.9364		6,526.9080
Total	**6.7751**	**79.0467**	**50.8400**	**0.0618**	**7.0761**	**3.8022**	**10.8783**	**3.4240**	**3.4980**	**6.9220**		**6,486.2433**	**6,486.2433**	**1.9364**		**6,526.9080**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0860	0.0806	1.0489	2.0500e-003	3.3419	1.1500e-003	3.3431	0.3604	1.0400e-003	0.3615		174.4315	174.4315	8.0300e-003		174.6001
Total	**0.0860**	**0.0806**	**1.0489**	**2.0500e-003**	**3.3419**	**1.1500e-003**	**3.3431**	**0.3604**	**1.0400e-003**	**0.3615**		**174.4315**	**174.4315**	**8.0300e-003**		**174.6001**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3882	0.0000	2.3882	1.1556	0.0000	1.1556			0.0000			0.0000
Off-Road	1.5128	29.7798	37.9432	0.0618		1.3234	1.3234		1.3234	1.3234	0.0000	6,486.2433	6,486.2433	1.9364		6,526.9080

Total	**1.5128**	**29.7798**	**37.9432**	**0.0618**	**2.3882**	**1.3234**	**3.7116**	**1.1556**	**1.3234**	**2.4790**	**0.0000**	**6,486.2433**	**6,486.2433**	**1.9364**		**6,526.9080**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0860	0.0806	1.0489	2.0500e-003	0.6671	1.1500e-003	0.6682	0.0933	1.0400e-003	0.0944		174.4315	174.4315	8.0300e-003		174.6001
Total	**0.0860**	**0.0806**	**1.0489**	**2.0500e-003**	**0.6671**	**1.1500e-003**	**0.6682**	**0.0933**	**1.0400e-003**	**0.0944**		**174.4315**	**174.4315**	**8.0300e-003**		**174.6001**

3.3 Years 1-5: Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0761	0.0000	7.0761	3.4240	0.0000	3.4240			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350		6,455.6154
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**7.0761**	**3.5842**	**10.6603**	**3.4240**	**3.2975**	**6.7215**		**6,414.9807**	**6,414.9807**	**1.9350**		**6,455.6154**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0767	0.0717	0.9332	2.0400e-003	3.3419	1.0900e-003	3.3430	0.3604	1.0000e-003	0.3614		168.0914	168.0914	7.2900e-003		168.2444

Total	**0.0767**	**0.0717**	**0.9332**	**2.0400e-003**	**3.3419**	**1.0900e-003**	**3.3430**	**0.3604**	**1.0000e-003**	**0.3614**		**168.0914**	**168.0914**	**7.2900e-003**		**168.2444**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3882	0.0000	2.3882	1.1556	0.0000	1.1556			0.0000			0.0000
Off-Road	1.5128	29.7798	37.9432	0.0617		1.3234	1.3234		1.3234	1.3234	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	**1.5128**	**29.7798**	**37.9432**	**0.0617**	**2.3882**	**1.3234**	**3.7116**	**1.1556**	**1.3234**	**2.4790**	**0.0000**	**6,414.9807**	**6,414.9807**	**1.9350**		**6,455.6154**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0767	0.0717	0.9332	2.0400e-003	0.6671	1.0900e-003	0.6682	0.0933	1.0000e-003	0.0943		168.0914	168.0914	7.2900e-003		168.2444
Total	**0.0767**	**0.0717**	**0.9332**	**2.0400e-003**	**0.6671**	**1.0900e-003**	**0.6682**	**0.0933**	**1.0000e-003**	**0.0943**		**168.0914**	**168.0914**	**7.2900e-003**		**168.2444**

3.4 Years 1-5: Buiding Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4482	27.5934	32.5156	0.0702	65.1030	0.4644	65.5674	6.8554	0.4270	7.2823		7,042.1221	7,042.1221	0.0562		7,043.3025
Worker	2.9213	2.7305	35.5558	0.0779	127.3276	0.0416	127.3692	13.7326	0.0381	13.7707		6,404.2824	6,404.2824	0.2776		6,410.1113
Total	**6.3694**	**30.3239**	**68.0714**	**0.1481**	**192.4305**	**0.5060**	**192.9366**	**20.5879**	**0.4650**	**21.0530**		**13,446.4044**	**13,446.4044**	**0.3338**		**13,453.4138**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0268		0.9016	0.9016		0.9016	0.9016	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**0.6712**	**14.1741**	**17.8156**	**0.0268**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4482	27.5934	32.5156	0.0702	11.9475	0.4644	12.4119	1.5475	0.4270	1.9744		7,042.1221	7,042.1221	0.0562		7,043.3025
Worker	2.9213	2.7305	35.5558	0.0779	25.4152	0.0416	25.4568	3.5560	0.0381	3.5941		6,404.2824	6,404.2824	0.2776		6,410.1113

Total	**6.3694**	**30.3239**	**68.0714**	**0.1481**	**37.3627**	**0.5060**	**37.8687**	**5.1035**	**0.4650**	**5.5685**		**13,446.4044**	**13,446.4044**	**0.3338**		**13,453.4138**

3.4 Years 1-5: Buiding Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0986	24.6596	30.1320	0.0701	65.1034	0.3942	65.4976	6.8556	0.3624	7.2179		6,924.3463	6,924.3463	0.0523		6,925.4442
Worker	2.5644	2.4156	31.3006	0.0779	127.3276	0.0401	127.3677	13.7326	0.0369	13.7695		6,150.1627	6,150.1627	0.2512		6,155.4374
Total	**5.6630**	**27.0752**	**61.4326**	**0.1480**	**192.4310**	**0.4343**	**192.8652**	**20.5881**	**0.3993**	**20.9874**		**13,074.5090**	**13,074.5090**	**0.3035**		**13,080.8816**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0268		0.9016	0.9016		0.9016	0.9016	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**0.6712**	**14.1741**	**17.8156**	**0.0268**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0986	24.6596	30.1320	0.0701	11.9479	0.3942	12.3421	1.5476	0.3624	1.9100		6,924.3463	6,924.3463	0.0523		6,925.4442
Worker	2.5644	2.4156	31.3006	0.0779	25.4152	0.0401	25.4553	3.5560	0.0369	3.5929		6,150.1627	6,150.1627	0.2512		6,155.4374
Total	**5.6630**	**27.0752**	**61.4326**	**0.1480**	**37.3631**	**0.4343**	**37.7973**	**5.1036**	**0.3993**	**5.5030**		**13,074.5090**	**13,074.5090**	**0.3035**		**13,080.8816**

3.4 Years 1-5: Buiding Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.9390	2,609.9390	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.9390**	**2,609.9390**	**0.6387**		**2,623.3517**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.7948	22.4185	27.3904	0.0699	65.1032	0.3536	65.4567	6.8554	0.3252	7.1806		6,803.7692	6,803.7692	0.0502		6,804.8235
Worker	2.2823	2.1646	27.9488	0.0778	127.3276	0.0394	127.3669	13.7326	0.0364	13.7690		5,917.9023	5,917.9023	0.2303		5,922.7383

Total	**5.0770**	**24.5831**	**55.3392**	**0.1478**	**192.4307**	**0.3929**	**192.8236**	**20.5880**	**0.3616**	**20.9496**		**12,721.6715**	**12,721.6715**	**0.2805**		**12,727.5619**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0268		0.9016	0.9016		0.9016	0.9016	0.0000	2,609.9389	2,609.9389	0.6387		2,623.3517
Total	**0.6712**	**14.1741**	**17.8156**	**0.0268**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,609.9389**	**2,609.9389**	**0.6387**		**2,623.3517**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.7948	22.4185	27.3904	0.0699	11.9476	0.3536	12.3012	1.5475	0.3252	1.8727		6,803.7692	6,803.7692	0.0502		6,804.8235
Worker	2.2823	2.1646	27.9488	0.0778	25.4152	0.0394	25.4546	3.5560	0.0364	3.5924		5,917.9023	5,917.9023	0.2303		5,922.7383
Total	**5.0770**	**24.5831**	**55.3392**	**0.1478**	**37.3628**	**0.3929**	**37.7557**	**5.1035**	**0.3616**	**5.4651**		**12,721.6715**	**12,721.6715**	**0.2805**		**12,727.5619**

3.4 Years 1-5: Buiding Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083		2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**		**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.6199	20.5376	26.2711	0.0699	65.1034	0.3279	65.4313	6.8555	0.3016	7.1571		6,689.2740	6,689.2740	0.0488		6,690.2992
Worker	2.0971	1.9842	25.8185	0.0778	127.3276	0.0393	127.3669	13.7326	0.0365	13.7690		5,705.4720	5,705.4720	0.2162		5,710.0123
Total	**4.7170**	**22.5218**	**52.0896**	**0.1476**	**192.4309**	**0.3672**	**192.7982**	**20.5881**	**0.3380**	**20.9261**		**12,394.7460**	**12,394.7460**	**0.2650**		**12,400.3115**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0268		0.9016	0.9016		0.9016	0.9016	0.0000	2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**0.6712**	**14.1741**	**17.8156**	**0.0268**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.6199	20.5376	26.2711	0.0699	11.9479	0.3279	12.2758	1.5476	0.3016	1.8492		6,689.2740	6,689.2740	0.0488		6,690.2992
Worker	2.0971	1.9842	25.8185	0.0778	25.4152	0.0393	25.4545	3.5560	0.0365	3.5924		5,705.4720	5,705.4720	0.2162		5,710.0123

Total	**4.7170**	**22.5218**	**52.0896**	**0.1476**	**37.3630**	**0.3672**	**37.7303**	**5.1036**	**0.3380**	**5.4416**		**12,394.7460**	**12,394.7460**	**0.2650**		**12,400.3115**

3.5 Years 1-5: Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4259	14.9353	14.3652	0.0223		0.8094	0.8094		0.7447	0.7447		2,208.9731	2,208.9731	0.6989		2,223.6499
Paving	5.4134					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**6.8392**	**14.9353**	**14.3652**	**0.0223**		**0.8094**	**0.8094**		**0.7447**	**0.7447**		**2,208.9731**	**2,208.9731**	**0.6989**		**2,223.6499**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0413	0.0391	0.5082	1.5300e-003	0.1232	7.7000e-004	0.1240	0.0327	7.2000e-004	0.0334		112.3124	112.3124	4.2600e-003		112.4018
Total	**0.0413**	**0.0391**	**0.5082**	**1.5300e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.2000e-004**	**0.0334**		**112.3124**	**112.3124**	**4.2600e-003**		**112.4018**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5490	11.0645	16.9276	0.0223		0.5982	0.5982		0.5982	0.5982	0.0000	2,208.9731	2,208.9731	0.6989		2,223.6499
Paving	5.4134					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Total	**5.9624**	**11.0645**	**16.9276**	**0.0223**		**0.5982**	**0.5982**		**0.5982**	**0.5982**	**0.0000**	**2,208.9731**	**2,208.9731**	**0.6989**		**2,223.6499**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0413	0.0391	0.5082	1.5300e-003	0.1232	7.7000e-004	0.1240	0.0327	7.2000e-004	0.0334		112.3124	112.3124	4.2600e-003		112.4018
Total	**0.0413**	**0.0391**	**0.5082**	**1.5300e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.2000e-004**	**0.0334**		**112.3124**	**112.3124**	**4.2600e-003**		**112.4018**

3.5 Years 1-5: Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3301	13.7845	14.3523	0.0223		0.7390	0.7390		0.6799	0.6799		2,160.7571	2,160.7571	0.6988		2,175.4326
Paving	5.4134					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**6.7434**	**13.7845**	**14.3523**	**0.0223**		**0.7390**	**0.7390**		**0.6799**	**0.6799**		**2,160.7571**	**2,160.7571**	**0.6988**		**2,175.4326**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0383	0.0361	0.4710	1.5300e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		107.8746	107.8746	4.0200e-003		107.9590

Total	**0.0383**	**0.0361**	**0.4710**	**1.5300e-003**	**0.1232**	**7.8000e-004**	**0.1240**	**0.0327**	**7.2000e-004**	**0.0334**		**107.8746**	**107.8746**	**4.0200e-003**		**107.9590**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5490	11.0645	16.9276	0.0223		0.5982	0.5982		0.5982	0.5982	0.0000	2,160.7571	2,160.7571	0.6988		2,175.4326
Paving	5.4134					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**5.9624**	**11.0645**	**16.9276**	**0.0223**		**0.5982**	**0.5982**		**0.5982**	**0.5982**	**0.0000**	**2,160.7571**	**2,160.7571**	**0.6988**		**2,175.4326**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0383	0.0361	0.4710	1.5300e-003	0.1232	7.8000e-004	0.1240	0.0327	7.2000e-004	0.0334		107.8746	107.8746	4.0200e-003		107.9590
Total	**0.0383**	**0.0361**	**0.4710**	**1.5300e-003**	**0.1232**	**7.8000e-004**	**0.1240**	**0.0327**	**7.2000e-004**	**0.0334**		**107.8746**	**107.8746**	**4.0200e-003**		**107.9590**

3.6 Years 1-5: Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	193.0615					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9057

Total	**193.3037**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9057**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3885	0.3661	4.7725	0.0155	1.2486	7.8700e-003	1.2565	0.3312	7.2900e-003	0.3385		1,093.1293	1,093.1293	0.0407		1,093.9847
Total	**0.3885**	**0.3661**	**4.7725**	**0.0155**	**1.2486**	**7.8700e-003**	**1.2565**	**0.3312**	**7.2900e-003**	**0.3385**		**1,093.1293**	**1,093.1293**	**0.0407**		**1,093.9847**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	193.0615					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0218		281.9057
Total	**193.1210**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9057**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3885	0.3661	4.7725	0.0155	1.2486	7.8700e-003	1.2565	0.3312	7.2900e-003	0.3385		1,093.1293	1,093.1293	0.0407		1,093.9847

Total	**0.3885**	**0.3661**	**4.7725**	**0.0155**	**1.2486**	**7.8700e-003**	**1.2565**	**0.3312**	**7.2900e-003**	**0.3385**		**1,093.1293**	**1,093.1293**	**0.0407**		**1,093.9847**

3.7 Years 5-10: Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.7250	38.8640	32.9264	0.0391		1.9309	1.9309		1.7764	1.7764		3,792.2816	3,792.2816	1.2265		3,818.0381
Total	**3.7250**	**38.8640**	**32.9264**	**0.0391**	**18.0663**	**1.9309**	**19.9971**	**9.9307**	**1.7764**	**11.7071**		**3,792.2816**	**3,792.2816**	**1.2265**		**3,818.0381**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0460	0.0434	0.5652	1.8400e-003	3.0077	9.3000e-004	3.0087	0.3244	8.6000e-004	0.3253		129.4495	129.4495	4.8200e-003		129.5508
Total	**0.0460**	**0.0434**	**0.5652**	**1.8400e-003**	**3.0077**	**9.3000e-004**	**3.0087**	**0.3244**	**8.6000e-004**	**0.3253**		**129.4495**	**129.4495**	**4.8200e-003**		**129.5508**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0974	0.0000	6.0974	3.3516	0.0000	3.3516			0.0000			0.0000
Off-Road	0.9515	19.4584	23.4003	0.0391		0.9611	0.9611		0.9611	0.9611	0.0000	3,792.2816	3,792.2816	1.2265		3,818.0381

Total	**0.9515**	**19.4584**	**23.4003**	**0.0391**	**6.0974**	**0.9611**	**7.0584**	**3.3516**	**0.9611**	**4.3127**	**0.0000**	**3,792.2816**	**3,792.2816**	**1.2265**		**3,818.0381**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0460	0.0434	0.5652	1.8400e-003	0.6004	9.3000e-004	0.6013	0.0840	8.6000e-004	0.0849		129.4495	129.4495	4.8200e-003		129.5508
Total	**0.0460**	**0.0434**	**0.5652**	**1.8400e-003**	**0.6004**	**9.3000e-004**	**0.6013**	**0.0840**	**8.6000e-004**	**0.0849**		**129.4495**	**129.4495**	**4.8200e-003**		**129.5508**

3.8 Years 5-10: Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6277	0.0000	6.6277	3.3756	0.0000	3.3756			0.0000			0.0000
Off-Road	4.5501	49.3839	38.4257	0.0617		2.2619	2.2619		2.0810	2.0810		5,977.7088	5,977.7088	1.9333		6,018.3084
Total	**4.5501**	**49.3839**	**38.4257**	**0.0617**	**6.6277**	**2.2619**	**8.8897**	**3.3756**	**2.0810**	**5.4566**		**5,977.7088**	**5,977.7088**	**1.9333**		**6,018.3084**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0482	0.6280	2.0400e-003	3.3419	1.0400e-003	3.3430	0.3604	9.6000e-004	0.3614		143.8328	143.8328	5.3600e-003		143.9454

Total	**0.0511**	**0.0482**	**0.6280**	**2.0400e-003**	**3.3419**	**1.0400e-003**	**3.3430**	**0.3604**	**9.6000e-004**	**0.3614**		**143.8328**	**143.8328**	**5.3600e-003**		**143.9454**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2369	0.0000	2.2369	1.1393	0.0000	1.1393			0.0000			0.0000
Off-Road	1.5128	29.7798	37.9432	0.0617		1.3234	1.3234		1.3234	1.3234	0.0000	5,977.7088	5,977.7088	1.9333		6,018.3084
Total	**1.5128**	**29.7798**	**37.9432**	**0.0617**	**2.2369**	**1.3234**	**3.5602**	**1.1393**	**1.3234**	**2.4627**	**0.0000**	**5,977.7088**	**5,977.7088**	**1.9333**		**6,018.3084**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0482	0.6280	2.0400e-003	0.6671	1.0400e-003	0.6681	0.0933	9.6000e-004	0.0943		143.8328	143.8328	5.3600e-003		143.9454
Total	**0.0511**	**0.0482**	**0.6280**	**2.0400e-003**	**0.6671**	**1.0400e-003**	**0.6681**	**0.0933**	**9.6000e-004**	**0.0943**		**143.8328**	**143.8328**	**5.3600e-003**		**143.9454**

3.8 Years 5-10: Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6277	0.0000	6.6277	3.3756	0.0000	3.3756			0.0000			0.0000
Off-Road	4.1944	44.4928	36.7579	0.0617		2.0140	2.0140		1.8529	1.8529		5,979.1158	5,979.1158	1.9338		6,019.7249

Total	**4.1944**	**44.4928**	**36.7579**	**0.0617**	**6.6277**	**2.0140**	**8.6418**	**3.3756**	**1.8529**	**5.2285**		**5,979.1158**	**5,979.1158**	**1.9338**		**6,019.7249**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0484	0.0452	0.5922	2.0400e-003	3.3419	1.0400e-003	3.3430	0.3604	9.7000e-004	0.3614		141.4572	141.4572	5.1200e-003		141.5648
Total	**0.0484**	**0.0452**	**0.5922**	**2.0400e-003**	**3.3419**	**1.0400e-003**	**3.3430**	**0.3604**	**9.7000e-004**	**0.3614**		**141.4572**	**141.4572**	**5.1200e-003**		**141.5648**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2369	0.0000	2.2369	1.1393	0.0000	1.1393			0.0000			0.0000
Off-Road	1.5128	29.7798	37.9432	0.0617		1.3234	1.3234		1.3234	1.3234	0.0000	5,979.1157	5,979.1157	1.9338		6,019.7249
Total	**1.5128**	**29.7798**	**37.9432**	**0.0617**	**2.2369**	**1.3234**	**3.5602**	**1.1393**	**1.3234**	**2.4627**	**0.0000**	**5,979.1157**	**5,979.1157**	**1.9338**		**6,019.7249**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0484	0.0452	0.5922	2.0400e-003	0.6671	1.0400e-003	0.6681	0.0933	9.7000e-004	0.0943		141.4572	141.4572	5.1200e-003		141.5648

Total	**0.0484**	**0.0452**	**0.5922**	**2.0400e-003**	**0.6671**	**1.0400e-003**	**0.6681**	**0.0933**	**9.7000e-004**	**0.0943**		**141.4572**	**141.4572**	**5.1200e-003**		**141.5648**

3.9 Years 5-10: Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8931	17.3403	16.5376	0.0268		0.9549	0.9549		0.8979	0.8979		2,542.7817	2,542.7817	0.6126		2,555.6462
Total	**1.8931**	**17.3403**	**16.5376**	**0.0268**		**0.9549**	**0.9549**		**0.8979**	**0.8979**		**2,542.7817**	**2,542.7817**	**0.6126**		**2,555.6462**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.9149	12.3301	20.1379	0.0609	56.9106	0.2293	57.1399	5.9929	0.2110	6.2039		5,705.3089	5,705.3089	0.0408		5,706.1664
Worker	1.5527	1.4514	19.0100	0.0655	107.2760	0.0335	107.3095	11.5700	0.0311	11.6011		4,540.7748	4,540.7748	0.1645		4,544.2294
Total	**3.4675**	**13.7815**	**39.1479**	**0.1264**	**164.1865**	**0.2629**	**164.4494**	**17.5629**	**0.2421**	**17.8050**		**10,246.0836**	**10,246.0836**	**0.2053**		**10,250.3957**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0268		0.9016	0.9016		0.9016	0.9016	0.0000	2,542.7817	2,542.7817	0.6126		2,555.6462
Total	**0.6712**	**14.1741**	**17.8156**	**0.0268**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,542.7817**	**2,542.7817**	**0.6126**		**2,555.6462**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.9149	12.3301	20.1379	0.0609	10.4447	0.2293	10.6740	1.3530	0.2110	1.5640		5,705.3089	5,705.3089	0.0408		5,706.1664
Worker	1.5527	1.4514	19.0100	0.0655	21.4128	0.0335	21.4463	2.9960	0.0311	3.0271		4,540.7748	4,540.7748	0.1645		4,544.2294
Total	**3.4675**	**13.7815**	**39.1479**	**0.1264**	**31.8575**	**0.2629**	**32.1203**	**4.3490**	**0.2421**	**4.5911**		**10,246.0836**	**10,246.0836**	**0.2053**		**10,250.3957**

3.9 Years 5-10: Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6992	15.5364	16.3276	0.0268		0.8057	0.8057		0.7581	0.7581		2,543.7497	2,543.7497	0.6085		2,556.5286
Total	**1.6992**	**15.5364**	**16.3276**	**0.0268**		**0.8057**	**0.8057**		**0.7581**	**0.7581**		**2,543.7497**	**2,543.7497**	**0.6085**		**2,556.5286**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.8588	10.8638	19.7196	0.0608	56.9107	0.2250	57.1357	5.9930	0.2070	6.2000		5,700.1008	5,700.1008	0.0415		5,700.9727
Worker	1.4751	1.3704	18.0153	0.0655	107.2760	0.0339	107.3099	11.5700	0.0315	11.6014		4,471.8125	4,471.8125	0.1580		4,475.1312

Total	**3.3339**	**12.2341**	**37.7350**	**0.1263**	**164.1867**	**0.2589**	**164.4456**	**17.5630**	**0.2384**	**17.8014**		**10,171.9133**	**10,171.9133**	**0.1996**		**10,176.1039**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0268		0.9016	0.9016		0.9016	0.9016	0.0000	2,543.7497	2,543.7497	0.6085		2,556.5286
Total	**0.6712**	**14.1741**	**17.8156**	**0.0268**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,543.7497**	**2,543.7497**	**0.6085**		**2,556.5286**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.8588	10.8638	19.7196	0.0608	10.4449	0.2250	10.6699	1.3531	0.2070	1.5601		5,700.1008	5,700.1008	0.0415		5,700.9727
Worker	1.4751	1.3704	18.0153	0.0655	21.4128	0.0339	21.4467	2.9960	0.0315	3.0275		4,471.8125	4,471.8125	0.1580		4,475.1312
Total	**3.3339**	**12.2341**	**37.7350**	**0.1263**	**31.8577**	**0.2589**	**32.1166**	**4.3491**	**0.2384**	**4.5876**		**10,171.9133**	**10,171.9133**	**0.1996**		**10,176.1039**

3.9 Years 5-10: Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5661	14.3126	16.2093	0.0268		0.6967	0.6967		0.6557	0.6557		2,544.6262	2,544.6262	0.6044		2,557.3191
Total	**1.5661**	**14.3126**	**16.2093**	**0.0268**		**0.6967**	**0.6967**		**0.6557**	**0.6557**		**2,544.6262**	**2,544.6262**	**0.6044**		**2,557.3191**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.7677	9.7426	19.1696	0.0607	56.9109	0.2136	57.1245	5.9931	0.1965	6.1896		5,692.3087	5,692.3087	0.0393		5,693.1340
Worker	1.4027	1.2988	17.1047	0.0655	107.2760	0.0343	107.3102	11.5700	0.0318	11.6018		4,409.7301	4,409.7301	0.1523		4,412.9286
Total	**3.1704**	**11.0414**	**36.2743**	**0.1262**	**164.1869**	**0.2479**	**164.4348**	**17.5631**	**0.2283**	**17.7914**		**10,102.0388**	**10,102.0388**	**0.1916**		**10,106.0626**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0268		0.9016	0.9016		0.9016	0.9016	0.0000	2,544.6262	2,544.6262	0.6044		2,557.3191
Total	**0.6712**	**14.1741**	**17.8156**	**0.0268**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,544.6262**	**2,544.6262**	**0.6044**		**2,557.3191**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.7677	9.7426	19.1696	0.0607	10.4450	0.2136	10.6586	1.3532	0.1965	1.5497		5,692.3087	5,692.3087	0.0393		5,693.1340
Worker	1.4027	1.2988	17.1047	0.0655	21.4128	0.0343	21.4471	2.9960	0.0318	3.0278		4,409.7301	4,409.7301	0.1523		4,412.9286

Total	**3.1704**	**11.0414**	**36.2743**	**0.1262**	**31.8578**	**0.2479**	**32.1057**	**4.3492**	**0.2283**	**4.5775**		**10,102.0388**	**10,102.0388**	**0.1916**		**10,106.0626**

3.9 Years 5-10: Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4653	13.3774	16.1332	0.0268		0.6106	0.6106		0.5744	0.5744		2,545.1154	2,545.1154	0.6009		2,557.7349
Total	**1.4653**	**13.3774**	**16.1332**	**0.0268**		**0.6106**	**0.6106**		**0.5744**	**0.5744**		**2,545.1154**	**2,545.1154**	**0.6009**		**2,557.7349**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.7125	9.6261	18.7871	0.0607	56.9112	0.2144	57.1256	5.9932	0.1973	6.1905		5,693.6336	5,693.6336	0.0394		5,694.4618
Worker	1.3379	1.2379	16.3576	0.0655	107.2760	0.0346	107.3106	11.5700	0.0321	11.6021		4,354.8240	4,354.8240	0.1474		4,357.9199
Total	**3.0503**	**10.8640**	**35.1447**	**0.1262**	**164.1872**	**0.2491**	**164.4362**	**17.5632**	**0.2294**	**17.7926**		**10,048.4576**	**10,048.4576**	**0.1869**		**10,052.3816**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0268		0.9016	0.9016		0.9016	0.9016	0.0000	2,545.1154	2,545.1154	0.6009		2,557.7349
Total	**0.6712**	**14.1741**	**17.8156**	**0.0268**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,545.1154**	**2,545.1154**	**0.6009**		**2,557.7349**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.7125	9.6261	18.7871	0.0607	10.4453	0.2144	10.6598	1.3533	0.1973	1.5506		5,693.6336	5,693.6336	0.0394		5,694.4618
Worker	1.3379	1.2379	16.3576	0.0655	21.4128	0.0346	21.4474	2.9960	0.0321	3.0281		4,354.8240	4,354.8240	0.1474		4,357.9199
Total	**3.0503**	**10.8640**	**35.1447**	**0.1262**	**31.8581**	**0.2491**	**32.1072**	**4.3493**	**0.2294**	**4.5787**		**10,048.4576**	**10,048.4576**	**0.1869**		**10,052.3816**

3.10 Years 5-10: Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9690	9.3453	14.3254	0.0223		0.4601	0.4601		0.4233	0.4233		2,160.5812	2,160.5812	0.6988		2,175.2555
Paving	5.3402					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**6.3092**	**9.3453**	**14.3254**	**0.0223**		**0.4601**	**0.4601**		**0.4233**	**0.4233**		**2,160.5812**	**2,160.5812**	**0.6988**		**2,175.2555**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0313	0.0289	0.3822	1.5300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		101.7482	101.7482	3.4400e-003		101.8206

Total	**0.0313**	**0.0289**	**0.3822**	**1.5300e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**101.7482**	**101.7482**	**3.4400e-003**		**101.8206**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5490	11.0645	16.9276	0.0223		0.5982	0.5982		0.5982	0.5982	0.0000	2,160.5812	2,160.5812	0.6988		2,175.2555
Paving	5.3402					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**5.8892**	**11.0645**	**16.9276**	**0.0223**		**0.5982**	**0.5982**		**0.5982**	**0.5982**	**0.0000**	**2,160.5812**	**2,160.5812**	**0.6988**		**2,175.2555**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0313	0.0289	0.3822	1.5300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		101.7482	101.7482	3.4400e-003		101.8206
Total	**0.0313**	**0.0289**	**0.3822**	**1.5300e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**101.7482**	**101.7482**	**3.4400e-003**		**101.8206**

3.10 Years 5-10: Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8973	8.4215	14.2781	0.0223		0.4109	0.4109		0.3781	0.3781		2,159.7967	2,159.7967	0.6985		2,174.4656
Paving	5.3402					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Total	**6.2375**	**8.4215**	**14.2781**	**0.0223**		**0.4109**	**0.4109**		**0.3781**	**0.3781**		**2,159.7967**	**2,159.7967**	**0.6985**		**2,174.4656**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0300	0.0278	0.3682	1.5300e-003	0.1232	8.2000e-004	0.1240	0.0327	7.6000e-004	0.0334		100.6278	100.6278	3.3500e-003		100.6982
Total	**0.0300**	**0.0278**	**0.3682**	**1.5300e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.6000e-004**	**0.0334**		**100.6278**	**100.6278**	**3.3500e-003**		**100.6982**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5490	11.0645	16.9276	0.0223		0.5982	0.5982		0.5982	0.5982	0.0000	2,159.7967	2,159.7967	0.6985		2,174.4656
Paving	5.3402					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**5.8892**	**11.0645**	**16.9276**	**0.0223**		**0.5982**	**0.5982**		**0.5982**	**0.5982**	**0.0000**	**2,159.7967**	**2,159.7967**	**0.6985**		**2,174.4656**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0300	0.0278	0.3682	1.5300e-003	0.1232	8.2000e-004	0.1240	0.0327	7.6000e-004	0.0334		100.6278	100.6278	3.3500e-003		100.6982

Total	**0.0300**	**0.0278**	**0.3682**	**1.5300e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.6000e-004**	**0.0334**		**100.6278**	**100.6278**	**3.3500e-003**		**100.6982**

3.11 Years 5-10: Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	68.2375					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.7705
Total	**68.4084**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.7705**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2560	0.2368	3.1424	0.0131	1.0515	6.9900e-003	1.0585	0.2789	6.4900e-003	0.2854		858.6906	858.6906	0.0286		859.2911
Total	**0.2560**	**0.2368**	**3.1424**	**0.0131**	**1.0515**	**6.9900e-003**	**1.0585**	**0.2789**	**6.4900e-003**	**0.2854**		**858.6906**	**858.6906**	**0.0286**		**859.2911**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	68.2375					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0154		281.7705

Total	**68.2969**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.7705**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2560	0.2368	3.1424	0.0131	1.0515	6.9900e-003	1.0585	0.2789	6.4900e-003	0.2854		858.6906	858.6906	0.0286		859.2911
Total	**0.2560**	**0.2368**	**3.1424**	**0.0131**	**1.0515**	**6.9900e-003**	**1.0585**	**0.2789**	**6.4900e-003**	**0.2854**		**858.6906**	**858.6906**	**0.0286**		**859.2911**

3.12 Years 10-30: Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.5083	23.5257	24.8879	0.0392		1.0293	1.0293		0.9470	0.9470		3,793.8403	3,793.8403	1.2270		3,819.6074
Total	**2.5083**	**23.5257**	**24.8879**	**0.0392**	**18.0663**	**1.0293**	**19.0956**	**9.9307**	**0.9470**	**10.8776**		**3,793.8403**	**3,793.8403**	**1.2270**		**3,819.6074**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0360	0.0333	0.4419	1.8400e-003	3.0077	9.8000e-004	3.0087	0.3244	9.1000e-004	0.3253		120.7534	120.7534	4.0200e-003		120.8378

Total	**0.0360**	**0.0333**	**0.4419**	**1.8400e-003**	**3.0077**	**9.8000e-004**	**3.0087**	**0.3244**	**9.1000e-004**	**0.3253**		**120.7534**	**120.7534**	**4.0200e-003**		**120.8378**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0974	0.0000	6.0974	3.3516	0.0000	3.3516			0.0000			0.0000
Off-Road	0.9515	19.4584	23.4003	0.0392		0.9611	0.9611		0.9611	0.9611	0.0000	3,793.8403	3,793.8403	1.2270		3,819.6074
Total	**0.9515**	**19.4584**	**23.4003**	**0.0392**	**6.0974**	**0.9611**	**7.0584**	**3.3516**	**0.9611**	**4.3127**	**0.0000**	**3,793.8403**	**3,793.8403**	**1.2270**		**3,819.6074**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0360	0.0333	0.4419	1.8400e-003	0.6004	9.8000e-004	0.6013	0.0840	9.1000e-004	0.0849		120.7534	120.7534	4.0200e-003		120.8378
Total	**0.0360**	**0.0333**	**0.4419**	**1.8400e-003**	**0.6004**	**9.8000e-004**	**0.6013**	**0.0840**	**9.1000e-004**	**0.0849**		**120.7534**	**120.7534**	**4.0200e-003**		**120.8378**

3.12 Years 10-30: Site Preparation - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.5083	23.5257	24.8879	0.0392		1.0293	1.0293		0.9470	0.9470		3,793.8403	3,793.8403	1.2270		3,819.6074

Total	**2.5083**	**23.5257**	**24.8879**	**0.0392**	**18.0663**	**1.0293**	**19.0956**	**9.9307**	**0.9470**	**10.8776**		**3,793.8403**	**3,793.8403**	**1.2270**		**3,819.6074**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0347	0.0321	0.4281	1.8400e-003	3.0077	1.0000e-003	3.0087	0.3244	9.2000e-004	0.3253		119.5988	119.5988	3.9300e-003		119.6812
Total	**0.0347**	**0.0321**	**0.4281**	**1.8400e-003**	**3.0077**	**1.0000e-003**	**3.0087**	**0.3244**	**9.2000e-004**	**0.3253**		**119.5988**	**119.5988**	**3.9300e-003**		**119.6812**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0974	0.0000	6.0974	3.3516	0.0000	3.3516			0.0000			0.0000
Off-Road	0.9515	19.4584	23.4003	0.0392		0.9611	0.9611		0.9611	0.9611	0.0000	3,793.8403	3,793.8403	1.2270		3,819.6074
Total	**0.9515**	**19.4584**	**23.4003**	**0.0392**	**6.0974**	**0.9611**	**7.0584**	**3.3516**	**0.9611**	**4.3127**	**0.0000**	**3,793.8403**	**3,793.8403**	**1.2270**		**3,819.6074**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0347	0.0321	0.4281	1.8400e-003	0.6004	1.0000e-003	0.6014	0.0840	9.2000e-004	0.0849		119.5988	119.5988	3.9300e-003		119.6812

Total	**0.0347**	**0.0321**	**0.4281**	**1.8400e-003**	**0.6004**	**1.0000e-003**	**0.6014**	**0.0840**	**9.2000e-004**	**0.0849**		**119.5988**	**119.5988**	**3.9300e-003**		**119.6812**

3.13 Years 10-30: Grading - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4101	0.0000	6.4101	3.3521	0.0000	3.3521			0.0000			0.0000
Off-Road	3.0022	27.2606	31.3515	0.0618		1.1867	1.1867		1.0918	1.0918		5,982.3526	5,982.3526	1.9348		6,022.9837
Total	**3.0022**	**27.2606**	**31.3515**	**0.0618**	**6.4101**	**1.1867**	**7.5968**	**3.3521**	**1.0918**	**4.4439**		**5,982.3526**	**5,982.3526**	**1.9348**		**6,022.9837**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0385	0.0357	0.4757	2.0400e-003	3.3419	1.1100e-003	3.3430	0.3604	1.0300e-003	0.3615		132.8875	132.8875	4.3600e-003		132.9791
Total	**0.0385**	**0.0357**	**0.4757**	**2.0400e-003**	**3.3419**	**1.1100e-003**	**3.3430**	**0.3604**	**1.0300e-003**	**0.3615**		**132.8875**	**132.8875**	**4.3600e-003**		**132.9791**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.1634	0.0000	2.1634	1.1313	0.0000	1.1313			0.0000			0.0000
Off-Road	1.5128	29.7798	37.9432	0.0618		1.3234	1.3234		1.3234	1.3234	0.0000	5,982.3526	5,982.3526	1.9348		6,022.9837

Total	**1.5128**	**29.7798**	**37.9432**	**0.0618**	**2.1634**	**1.3234**	**3.4868**	**1.1313**	**1.3234**	**2.4547**	**0.0000**	**5,982.3526**	**5,982.3526**	**1.9348**		**6,022.9837**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0385	0.0357	0.4757	2.0400e-003	0.6671	1.1100e-003	0.6682	0.0933	1.0300e-003	0.0944		132.8875	132.8875	4.3600e-003		132.9791
Total	**0.0385**	**0.0357**	**0.4757**	**2.0400e-003**	**0.6671**	**1.1100e-003**	**0.6682**	**0.0933**	**1.0300e-003**	**0.0944**		**132.8875**	**132.8875**	**4.3600e-003**		**132.9791**

3.13 Years 10-30: Grading - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4101	0.0000	6.4101	3.3521	0.0000	3.3521			0.0000			0.0000
Off-Road	3.0022	27.2606	31.3515	0.0618		1.1867	1.1867		1.0918	1.0918		5,982.3526	5,982.3526	1.9348		6,022.9837
Total	**3.0022**	**27.2606**	**31.3515**	**0.0618**	**6.4101**	**1.1867**	**7.5968**	**3.3521**	**1.0918**	**4.4439**		**5,982.3526**	**5,982.3526**	**1.9348**		**6,022.9837**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0371	0.0345	0.4621	2.0400e-003	3.3419	1.1200e-003	3.3431	0.3604	1.0400e-003	0.3615		131.7794	131.7794	4.2700e-003		131.8691

Total	**0.0371**	**0.0345**	**0.4621**	**2.0400e-003**	**3.3419**	**1.1200e-003**	**3.3431**	**0.3604**	**1.0400e-003**	**0.3615**		**131.7794**	**131.7794**	**4.2700e-003**		**131.8691**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.1634	0.0000	2.1634	1.1313	0.0000	1.1313			0.0000			0.0000
Off-Road	1.5128	29.7798	37.9432	0.0618		1.3234	1.3234		1.3234	1.3234	0.0000	5,982.3526	5,982.3526	1.9348		6,022.9837
Total	**1.5128**	**29.7798**	**37.9432**	**0.0618**	**2.1634**	**1.3234**	**3.4868**	**1.1313**	**1.3234**	**2.4547**	**0.0000**	**5,982.3526**	**5,982.3526**	**1.9348**		**6,022.9837**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0371	0.0345	0.4621	2.0400e-003	0.6671	1.1200e-003	0.6682	0.0933	1.0400e-003	0.0944		131.7794	131.7794	4.2700e-003		131.8691
Total	**0.0371**	**0.0345**	**0.4621**	**2.0400e-003**	**0.6671**	**1.1200e-003**	**0.6682**	**0.0933**	**1.0400e-003**	**0.0944**		**131.7794**	**131.7794**	**4.2700e-003**		**131.8691**

3.14 Years 10-30: Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097	16.0518	0.0269		0.5250	0.5250		0.4939	0.4939		2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**1.3615**	**12.4097**	**16.0518**	**0.0269**		**0.5250**	**0.5250**		**0.4939**	**0.4939**		**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.5093	14.3274	27.9237	0.0933	87.4713	0.3302	87.8014	9.2117	0.3038	9.5154		8,754.7404	8,754.7404	0.0608		8,756.0181
Worker	1.8787	1.7475	23.3845	0.1033	169.1017	0.0567	169.1584	18.2380	0.0526	18.2906		6,668.0393	6,668.0393	0.2160		6,672.5756
Total	**4.3880**	**16.0748**	**51.3082**	**0.1966**	**256.5730**	**0.3869**	**256.9598**	**27.4497**	**0.3564**	**27.8060**		**15,422.7798**	**15,422.7798**	**0.2769**		**15,428.5936**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0269		0.9016	0.9016		0.9016	0.9016	0.0000	2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**0.6712**	**14.1741**	**17.8156**	**0.0269**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.5093	14.3274	27.9237	0.0933	16.0548	0.3302	16.3850	2.0803	0.3038	2.3840		8,754.7404	8,754.7404	0.0608		8,756.0181
Worker	1.8787	1.7475	23.3845	0.1033	33.7535	0.0567	33.8102	4.7227	0.0526	4.7753		6,668.0393	6,668.0393	0.2160		6,672.5756

Total	**4.3880**	**16.0748**	**51.3082**	**0.1966**	**49.8083**	**0.3869**	**50.1952**	**6.8030**	**0.3564**	**7.1593**		**15,422.7798**	**15,422.7798**	**0.2769**		**15,428.5936**

3.14 Years 10-30: Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097	16.0518	0.0269		0.5250	0.5250		0.4939	0.4939		2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**1.3615**	**12.4097**	**16.0518**	**0.0269**		**0.5250**	**0.5250**		**0.4939**	**0.4939**		**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.4973	14.2033	27.6925	0.0933	87.4714	0.3301	87.8015	9.2117	0.3037	9.5154		8,755.4910	8,755.4910	0.0609		8,756.7695
Worker	1.8130	1.6945	22.7805	0.1033	169.1017	0.0573	169.1590	18.2380	0.0532	18.2912		6,620.1791	6,620.1791	0.2118		6,624.6259
Total	**4.3103**	**15.8978**	**50.4731**	**0.1966**	**256.5731**	**0.3874**	**256.9605**	**27.4497**	**0.3569**	**27.8066**		**15,375.6701**	**15,375.6701**	**0.2726**		**15,381.3954**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0269		0.9016	0.9016		0.9016	0.9016	0.0000	2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**0.6712**	**14.1741**	**17.8156**	**0.0269**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.4973	14.2033	27.6925	0.0933	16.0550	0.3301	16.3851	2.0803	0.3037	2.3841		8,755.4910	8,755.4910	0.0609		8,756.7695
Worker	1.8130	1.6945	22.7805	0.1033	33.7535	0.0573	33.8108	4.7227	0.0532	4.7758		6,620.1791	6,620.1791	0.2118		6,624.6259
Total	**4.3103**	**15.8978**	**50.4731**	**0.1966**	**49.8085**	**0.3874**	**50.1959**	**6.8030**	**0.3569**	**7.1599**		**15,375.6701**	**15,375.6701**	**0.2726**		**15,381.3954**

3.14 Years 10-30: Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097	16.0518	0.0269		0.5250	0.5250		0.4939	0.4939		2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**1.3615**	**12.4097**	**16.0518**	**0.0269**		**0.5250**	**0.5250**		**0.4939**	**0.4939**		**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.4657	14.1002	27.4815	0.0933	87.4715	0.3301	87.8016	9.2118	0.3037	9.5155		8,756.1629	8,756.1629	0.0609		8,757.4422
Worker	1.7471	1.6447	22.2105	0.1033	169.1017	0.0578	169.1595	18.2380	0.0536	18.2916		6,579.5873	6,579.5873	0.2077		6,583.9493

Total	**4.2128**	**15.7449**	**49.6920**	**0.1966**	**256.5732**	**0.3879**	**256.9611**	**27.4498**	**0.3573**	**27.8071**		**15,335.7502**	**15,335.7502**	**0.2686**		**15,341.3916**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0269		0.9016	0.9016		0.9016	0.9016	0.0000	2,545.8905	2,545.8905	0.5975		2,558.4386
Total	**0.6712**	**14.1741**	**17.8156**	**0.0269**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,545.8905**	**2,545.8905**	**0.5975**		**2,558.4386**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.4657	14.1002	27.4815	0.0933	16.0551	0.3301	16.3852	2.0804	0.3037	2.3841		8,756.1629	8,756.1629	0.0609		8,757.4422
Worker	1.7471	1.6447	22.2105	0.1033	33.7535	0.0578	33.8113	4.7227	0.0536	4.7763		6,579.5873	6,579.5873	0.2077		6,583.9493
Total	**4.2128**	**15.7449**	**49.6920**	**0.1966**	**49.8086**	**0.3879**	**50.1965**	**6.8031**	**0.3573**	**7.1604**		**15,335.7502**	**15,335.7502**	**0.2686**		**15,341.3916**

3.14 Years 10-30: Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179	16.1313	0.0308		0.1476	0.1476		0.1476	0.1476		2,884.8300	2,884.8300	0.1158		2,887.2617
Total	**1.3041**	**7.9179**	**16.1313**	**0.0308**		**0.1476**	**0.1476**		**0.1476**	**0.1476**		**2,884.8300**	**2,884.8300**	**0.1158**		**2,887.2617**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.4429	13.9878	27.1345	0.0933	87.4716	0.3301	87.8016	9.2118	0.3037	9.5154		8,756.3808	8,756.3808	0.0610		8,757.6608
Worker	1.6832	1.5982	21.7111	0.1033	169.1017	0.0581	169.1598	18.2380	0.0540	18.2919		6,545.3927	6,545.3927	0.2040		6,549.6764
Total	**4.1262**	**15.5860**	**48.8456**	**0.1966**	**256.5733**	**0.3882**	**256.9615**	**27.4498**	**0.3576**	**27.8074**		**15,301.7735**	**15,301.7735**	**0.2649**		**15,307.3372**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8300	2,884.8300	0.1158		2,887.2617
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8300**	**2,884.8300**	**0.1158**		**2,887.2617**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.4429	13.9878	27.1345	0.0933	16.0552	0.3301	16.3852	2.0804	0.3037	2.3841		8,756.3808	8,756.3808	0.0610		8,757.6608
Worker	1.6832	1.5982	21.7111	0.1033	33.7535	0.0581	33.8116	4.7227	0.0540	4.7766		6,545.3927	6,545.3927	0.2040		6,549.6764

Total	**4.1262**	**15.5860**	**48.8456**	**0.1966**	**49.8087**	**0.3882**	**50.1968**	**6.8031**	**0.3576**	**7.1607**		**15,301.7735**	**15,301.7735**	**0.2649**		**15,307.3372**

3.14 Years 10-30: Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179	16.1313	0.0308		0.1476	0.1476		0.1476	0.1476		2,884.8300	2,884.8300	0.1158		2,887.2617
Total	**1.3041**	**7.9179**	**16.1313**	**0.0308**		**0.1476**	**0.1476**		**0.1476**	**0.1476**		**2,884.8300**	**2,884.8300**	**0.1158**		**2,887.2617**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.4173	13.9087	27.0211	0.0933	87.4718	0.3302	87.8021	9.2119	0.3038	9.5157		8,757.6764	8,757.6764	0.0610		8,758.9575
Worker	1.6150	1.5555	21.2647	0.1033	169.1017	0.0584	169.1601	18.2380	0.0542	18.2922		6,517.0754	6,517.0754	0.2006		6,521.2887
Total	**4.0323**	**15.4642**	**48.2858**	**0.1966**	**256.5735**	**0.3886**	**256.9621**	**27.4499**	**0.3580**	**27.8079**		**15,274.7517**	**15,274.7517**	**0.2616**		**15,280.2462**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8300	2,884.8300	0.1158		2,887.2617
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8300**	**2,884.8300**	**0.1158**		**2,887.2617**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.4173	13.9087	27.0211	0.0933	16.0554	0.3302	16.3856	2.0805	0.3038	2.3843		8,757.6764	8,757.6764	0.0610		8,758.9575
Worker	1.6150	1.5555	21.2647	0.1033	33.7535	0.0584	33.8119	4.7227	0.0542	4.7768		6,517.0754	6,517.0754	0.2006		6,521.2887
Total	**4.0323**	**15.4642**	**48.2858**	**0.1966**	**49.8089**	**0.3886**	**50.1975**	**6.8032**	**0.3580**	**7.1612**		**15,274.7517**	**15,274.7517**	**0.2616**		**15,280.2462**

3.14 Years 10-30: Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179	16.1313	0.0308		0.1476	0.1476		0.1476	0.1476		2,884.8300	2,884.8300	0.1158		2,887.2617
Total	**1.3041**	**7.9179**	**16.1313**	**0.0308**		**0.1476**	**0.1476**		**0.1476**	**0.1476**		**2,884.8300**	**2,884.8300**	**0.1158**		**2,887.2617**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.3687	13.8066	26.8466	0.0933	87.4720	0.3303	87.8024	9.2120	0.3039	9.5159		8,758.5331	8,758.5331	0.0611		8,759.8152
Worker	1.5565	1.5197	20.8948	0.1033	169.1017	0.0586	169.1603	18.2380	0.0544	18.2924		6,493.7034	6,493.7034	0.1978		6,497.8563

Total	**3.9251**	**15.3264**	**47.7413**	**0.1966**	**256.5737**	**0.3890**	**256.9627**	**27.4500**	**0.3583**	**27.8083**		**15,252.2365**	**15,252.2365**	**0.2588**		**15,257.6715**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8300	2,884.8300	0.1158		2,887.2617
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8300**	**2,884.8300**	**0.1158**		**2,887.2617**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.3687	13.8066	26.8466	0.0933	16.0556	0.3303	16.3859	2.0806	0.3039	2.3845		8,758.5331	8,758.5331	0.0611		8,759.8152
Worker	1.5565	1.5197	20.8948	0.1033	33.7535	0.0586	33.8121	4.7227	0.0544	4.7770		6,493.7034	6,493.7034	0.1978		6,497.8563
Total	**3.9251**	**15.3264**	**47.7413**	**0.1966**	**49.8091**	**0.3890**	**50.1981**	**6.8033**	**0.3583**	**7.1616**		**15,252.2365**	**15,252.2365**	**0.2588**		**15,257.6715**

3.14 Years 10-30: Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179	16.1313	0.0308		0.1476	0.1476		0.1476	0.1476		2,884.8300	2,884.8300	0.1158		2,887.2617
Total	**1.3041**	**7.9179**	**16.1313**	**0.0308**		**0.1476**	**0.1476**		**0.1476**	**0.1476**		**2,884.8300**	**2,884.8300**	**0.1158**		**2,887.2617**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.3339	13.7155	26.6641	0.0934	87.4722	0.3304	87.8027	9.2121	0.3040	9.5160		8,759.5195	8,759.5195	0.0611		8,760.8023
Worker	1.5065	1.4901	20.5907	0.1033	169.1017	0.0588	169.1605	18.2380	0.0545	18.2925		6,474.5515	6,474.5515	0.1953		6,478.6532
Total	**3.8403**	**15.2056**	**47.2547**	**0.1967**	**256.5739**	**0.3892**	**256.9631**	**27.4501**	**0.3585**	**27.8086**		**15,234.0710**	**15,234.0710**	**0.2564**		**15,239.4555**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8300	2,884.8300	0.1158		2,887.2617
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8300**	**2,884.8300**	**0.1158**		**2,887.2617**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.3339	13.7155	26.6641	0.0934	16.0558	0.3304	16.3862	2.0807	0.3040	2.3847		8,759.5195	8,759.5195	0.0611		8,760.8023
Worker	1.5065	1.4901	20.5907	0.1033	33.7535	0.0588	33.8123	4.7227	0.0545	4.7772		6,474.5515	6,474.5515	0.1953		6,478.6532

Total	**3.8403**	**15.2056**	**47.2547**	**0.1967**	**49.8093**	**0.3892**	**50.1985**	**6.8033**	**0.3585**	**7.1619**		**15,234.0710**	**15,234.0710**	**0.2564**		**15,239.4555**

3.14 Years 10-30: Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179	16.1313	0.0308		0.1476	0.1476		0.1476	0.1476		2,884.8300	2,884.8300	0.1158		2,887.2617
Total	**1.3041**	**7.9179**	**16.1313**	**0.0308**		**0.1476**	**0.1476**		**0.1476**	**0.1476**		**2,884.8300**	**2,884.8300**	**0.1158**		**2,887.2617**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.3139	13.6457	26.5399	0.0934	87.4724	0.3304	87.8027	9.2121	0.3040	9.5161		8,760.1229	8,760.1229	0.0611		8,761.4062
Worker	1.4617	1.4648	20.3006	0.1033	169.1017	0.0589	169.1606	18.2380	0.0546	18.2926		6,458.6502	6,458.6502	0.1930		6,462.7037
Total	**3.7756**	**15.1105**	**46.8405**	**0.1967**	**256.5740**	**0.3893**	**256.9633**	**27.4501**	**0.3586**	**27.8087**		**15,218.7731**	**15,218.7731**	**0.2541**		**15,224.1099**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8300	2,884.8300	0.1158		2,887.2617
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8300**	**2,884.8300**	**0.1158**		**2,887.2617**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.3139	13.6457	26.5399	0.0934	16.0559	0.3304	16.3863	2.0807	0.3040	2.3847		8,760.1229	8,760.1229	0.0611		8,761.4062
Worker	1.4617	1.4648	20.3006	0.1033	33.7535	0.0589	33.8124	4.7227	0.0546	4.7773		6,458.6502	6,458.6502	0.1930		6,462.7037
Total	**3.7756**	**15.1105**	**46.8405**	**0.1967**	**49.8094**	**0.3893**	**50.1987**	**6.8034**	**0.3586**	**7.1620**		**15,218.7731**	**15,218.7731**	**0.2541**		**15,224.1099**

3.14 Years 10-30: Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2123	7.1510	16.0922	0.0308		0.0901	0.0901		0.0901	0.0901		2,884.8300	2,884.8300	0.1075		2,887.0878
Total	**1.2123**	**7.1510**	**16.0922**	**0.0308**		**0.0901**	**0.0901**		**0.0901**	**0.0901**		**2,884.8300**	**2,884.8300**	**0.1075**		**2,887.0878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.2862	13.5924	26.4121	0.0934	87.4725	0.3303	87.8028	9.2122	0.3039	9.5160		8,760.9139	8,760.9139	0.0611		8,762.1974
Worker	1.4229	1.4448	20.0525	0.1033	169.1017	0.0590	169.1606	18.2380	0.0547	18.2927		6,445.6076	6,445.6076	0.1910		6,449.6189

Total	**3.7091**	**15.0372**	**46.4646**	**0.1967**	**256.5742**	**0.3893**	**256.9634**	**27.4502**	**0.3586**	**27.8087**		**15,206.5215**	**15,206.5215**	**0.2521**		**15,211.8163**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8300	2,884.8300	0.1075		2,887.0878
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8300**	**2,884.8300**	**0.1075**		**2,887.0878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.2862	13.5924	26.4121	0.0934	16.0561	0.3303	16.3864	2.0808	0.3039	2.3847		8,760.9139	8,760.9139	0.0611		8,762.1974
Worker	1.4229	1.4448	20.0525	0.1033	33.7535	0.0590	33.8124	4.7227	0.0547	4.7774		6,445.6076	6,445.6076	0.1910		6,449.6189
Total	**3.7091**	**15.0372**	**46.4646**	**0.1967**	**49.8096**	**0.3893**	**50.1988**	**6.8035**	**0.3586**	**7.1620**		**15,206.5215**	**15,206.5215**	**0.2521**		**15,211.8163**

3.14 Years 10-30: Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2123	7.1510	16.0922	0.0308		0.0901	0.0901		0.0901	0.0901		2,884.8300	2,884.8300	0.1075		2,887.0878
Total	**1.2123**	**7.1510**	**16.0922**	**0.0308**		**0.0901**	**0.0901**		**0.0901**	**0.0901**		**2,884.8300**	**2,884.8300**	**0.1075**		**2,887.0878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					86.7461	0.0000	86.7461	8.9276	0.0000	8.9276			0.0000			0.0000
Worker					168.0134	0.0000	168.0134	17.8063	0.0000	17.8063			0.0000			0.0000
Total					**254.7595**	**0.0000**	**254.7595**	**26.7340**	**0.0000**	**26.7340**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8300	2,884.8300	0.1075		2,887.0878
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8300**	**2,884.8300**	**0.1075**		**2,887.0878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					15.3296	0.0000	15.3296	1.7963	0.0000	1.7963			0.0000			0.0000
Worker					32.6652	0.0000	32.6652	4.2910	0.0000	4.2910			0.0000			0.0000

Total					**47.9949**	**0.0000**	**47.9949**	**6.0873**	**0.0000**	**6.0873**			**0.0000**			**0.0000**

3.14 Years 10-30: Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2123	7.1510	16.0922	0.0308		0.0901	0.0901		0.0901	0.0901		2,884.8300	2,884.8300	0.1075		2,887.0878
Total	**1.2123**	**7.1510**	**16.0922**	**0.0308**		**0.0901**	**0.0901**		**0.0901**	**0.0901**		**2,884.8300**	**2,884.8300**	**0.1075**		**2,887.0878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					86.7461	0.0000	86.7461	8.9276	0.0000	8.9276			0.0000			0.0000
Worker					168.0134	0.0000	168.0134	17.8063	0.0000	17.8063			0.0000			0.0000
Total					**254.7595**	**0.0000**	**254.7595**	**26.7340**	**0.0000**	**26.7340**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8300	2,884.8300	0.1075		2,887.0878
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8300**	**2,884.8300**	**0.1075**		**2,887.0878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					15.3296	0.0000	15.3296	1.7963	0.0000	1.7963			0.0000			0.0000
Worker					32.6652	0.0000	32.6652	4.2910	0.0000	4.2910			0.0000			0.0000
Total					**47.9949**	**0.0000**	**47.9949**	**6.0873**	**0.0000**	**6.0873**			**0.0000**			**0.0000**

3.14 Years 10-30: Building Construction - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2123	7.1510	16.0922	0.0308		0.0901	0.0901		0.0901	0.0901		2,884.8300	2,884.8300	0.1075		2,887.0878
Total	**1.2123**	**7.1510**	**16.0922**	**0.0308**		**0.0901**	**0.0901**		**0.0901**	**0.0901**		**2,884.8300**	**2,884.8300**	**0.1075**		**2,887.0878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					86.7461	0.0000	86.7461	8.9276	0.0000	8.9276			0.0000			0.0000
Worker					168.0134	0.0000	168.0134	17.8063	0.0000	17.8063			0.0000			0.0000

Total					**254.7595**	**0.0000**	**254.7595**	**26.7340**	**0.0000**	**26.7340**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8300	2,884.8300	0.1075		2,887.0878
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8300**	**2,884.8300**	**0.1075**		**2,887.0878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					15.3296	0.0000	15.3296	1.7963	0.0000	1.7963			0.0000			0.0000
Worker					32.6652	0.0000	32.6652	4.2910	0.0000	4.2910			0.0000			0.0000
Total					**47.9949**	**0.0000**	**47.9949**	**6.0873**	**0.0000**	**6.0873**			**0.0000**			**0.0000**

3.14 Years 10-30: Building Construction - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2123	7.1510	16.0922	0.0308		0.0901	0.0901		0.0901	0.0901		2,884.8300	2,884.8300	0.1075		2,887.0878
Total	**1.2123**	**7.1510**	**16.0922**	**0.0308**		**0.0901**	**0.0901**		**0.0901**	**0.0901**		**2,884.8300**	**2,884.8300**	**0.1075**		**2,887.0878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					86.7461	0.0000	86.7461	8.9276	0.0000	8.9276			0.0000			0.0000
Worker					168.0134	0.0000	168.0134	17.8063	0.0000	17.8063			0.0000			0.0000
Total					**254.7595**	**0.0000**	**254.7595**	**26.7340**	**0.0000**	**26.7340**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8300	2,884.8300	0.1075		2,887.0878
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8300**	**2,884.8300**	**0.1075**		**2,887.0878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					15.3296	0.0000	15.3296	1.7963	0.0000	1.7963			0.0000			0.0000
Worker					32.6652	0.0000	32.6652	4.2910	0.0000	4.2910			0.0000			0.0000

Total					**47.9949**	**0.0000**	**47.9949**	**6.0873**	**0.0000**	**6.0873**			**0.0000**			**0.0000**

3.14 Years 10-30: Building Construction - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1926	6.8826	16.0929	0.0308		0.0734	0.0734		0.0734	0.0734		2,884.8303	2,884.8303	0.1038		2,887.0091
Total	**1.1926**	**6.8826**	**16.0929**	**0.0308**		**0.0734**	**0.0734**		**0.0734**	**0.0734**		**2,884.8303**	**2,884.8303**	**0.1038**		**2,887.0091**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					86.7461	0.0000	86.7461	8.9276	0.0000	8.9276			0.0000			0.0000
Worker					168.0134	0.0000	168.0134	17.8063	0.0000	17.8063			0.0000			0.0000
Total					**254.7595**	**0.0000**	**254.7595**	**26.7340**	**0.0000**	**26.7340**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8303	2,884.8303	0.1038		2,887.0091
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8303**	**2,884.8303**	**0.1038**		**2,887.0091**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					15.3296	0.0000	15.3296	1.7963	0.0000	1.7963			0.0000			0.0000
Worker					32.6652	0.0000	32.6652	4.2910	0.0000	4.2910			0.0000			0.0000
Total					**47.9949**	**0.0000**	**47.9949**	**6.0873**	**0.0000**	**6.0873**			**0.0000**			**0.0000**

3.14 Years 10-30: Building Construction - 2041

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1926	6.8826	16.0929	0.0308		0.0734	0.0734		0.0734	0.0734		2,884.8303	2,884.8303	0.1038		2,887.0091
Total	**1.1926**	**6.8826**	**16.0929**	**0.0308**		**0.0734**	**0.0734**		**0.0734**	**0.0734**		**2,884.8303**	**2,884.8303**	**0.1038**		**2,887.0091**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					86.7461	0.0000	86.7461	8.9276	0.0000	8.9276			0.0000			0.0000
Worker					168.0134	0.0000	168.0134	17.8063	0.0000	17.8063			0.0000			0.0000

Total					**254.7595**	**0.0000**	**254.7595**	**26.7340**	**0.0000**	**26.7340**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8303	2,884.8303	0.1038		2,887.0091
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8303**	**2,884.8303**	**0.1038**		**2,887.0091**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					15.3296	0.0000	15.3296	1.7963	0.0000	1.7963			0.0000			0.0000
Worker					32.6652	0.0000	32.6652	4.2910	0.0000	4.2910			0.0000			0.0000
Total					**47.9949**	**0.0000**	**47.9949**	**6.0873**	**0.0000**	**6.0873**			**0.0000**			**0.0000**

3.14 Years 10-30: Building Construction - 2042

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1926	6.8826	16.0929	0.0308		0.0734	0.0734		0.0734	0.0734		2,884.8303	2,884.8303	0.1038		2,887.0091
Total	**1.1926**	**6.8826**	**16.0929**	**0.0308**		**0.0734**	**0.0734**		**0.0734**	**0.0734**		**2,884.8303**	**2,884.8303**	**0.1038**		**2,887.0091**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					86.7461	0.0000	86.7461	8.9276	0.0000	8.9276			0.0000			0.0000
Worker					168.0134	0.0000	168.0134	17.8063	0.0000	17.8063			0.0000			0.0000
Total					**254.7595**	**0.0000**	**254.7595**	**26.7340**	**0.0000**	**26.7340**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8303	2,884.8303	0.1038		2,887.0091
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8303**	**2,884.8303**	**0.1038**		**2,887.0091**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					15.3296	0.0000	15.3296	1.7963	0.0000	1.7963			0.0000			0.0000
Worker					32.6652	0.0000	32.6652	4.2910	0.0000	4.2910			0.0000			0.0000

Total					**47.9949**	**0.0000**	**47.9949**	**6.0873**	**0.0000**	**6.0873**			**0.0000**			**0.0000**

3.14 Years 10-30: Building Construction - 2043

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1926	6.8826	16.0929	0.0308		0.0734	0.0734		0.0734	0.0734		2,884.8303	2,884.8303	0.1038		2,887.0091
Total	**1.1926**	**6.8826**	**16.0929**	**0.0308**		**0.0734**	**0.0734**		**0.0734**	**0.0734**		**2,884.8303**	**2,884.8303**	**0.1038**		**2,887.0091**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					86.7461	0.0000	86.7461	8.9276	0.0000	8.9276			0.0000			0.0000
Worker					168.0134	0.0000	168.0134	17.8063	0.0000	17.8063			0.0000			0.0000
Total					**254.7595**	**0.0000**	**254.7595**	**26.7340**	**0.0000**	**26.7340**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6712	14.1741	17.8156	0.0308		0.9016	0.9016		0.9016	0.9016	0.0000	2,884.8303	2,884.8303	0.1038		2,887.0091
Total	**0.6712**	**14.1741**	**17.8156**	**0.0308**		**0.9016**	**0.9016**		**0.9016**	**0.9016**	**0.0000**	**2,884.8303**	**2,884.8303**	**0.1038**		**2,887.0091**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					15.3296	0.0000	15.3296	1.7963	0.0000	1.7963			0.0000			0.0000
Worker					32.6652	0.0000	32.6652	4.2910	0.0000	4.2910			0.0000			0.0000
Total					**47.9949**	**0.0000**	**47.9949**	**6.0873**	**0.0000**	**6.0873**			**0.0000**			**0.0000**

3.15 Years 10-30: Paving - 2043

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9902	3.5998	15.4879	0.0275		0.1138	0.1138		0.1138	0.1138		2,599.9866	2,599.9866	0.0874		2,601.8224
Paving	1.3627					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3529**	**3.5998**	**15.4879**	**0.0275**		**0.1138**	**0.1138**		**0.1138**	**0.1138**		**2,599.9866**	**2,599.9866**	**0.0874**		**2,601.8224**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.1071	0.0000	0.1071	0.0263	0.0000	0.0263			0.0000			0.0000

Total					**0.1071**	**0.0000**	**0.1071**	**0.0263**	**0.0000**	**0.0263**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5490	11.0645	16.9276	0.0275		0.5982	0.5982		0.5982	0.5982	0.0000	2,599.9866	2,599.9866	0.0874		2,601.8224
Paving	1.3627					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9117**	**11.0645**	**16.9276**	**0.0275**		**0.5982**	**0.5982**		**0.5982**	**0.5982**	**0.0000**	**2,599.9866**	**2,599.9866**	**0.0874**		**2,601.8224**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.1071	0.0000	0.1071	0.0263	0.0000	0.0263			0.0000			0.0000
Total					**0.1071**	**0.0000**	**0.1071**	**0.0263**	**0.0000**	**0.0263**			**0.0000**			**0.0000**

3.15 Years 10-30: Paving - 2044

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9902	3.5998	15.4879	0.0275		0.1138	0.1138		0.1138	0.1138		2,599.9866	2,599.9866	0.0874		2,601.8224
Paving	1.3627					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Total	**2.3529**	**3.5998**	**15.4879**	**0.0275**		**0.1138**	**0.1138**		**0.1138**	**0.1138**		**2,599.9866**	**2,599.9866**	**0.0874**		**2,601.8224**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.1071	0.0000	0.1071	0.0263	0.0000	0.0263			0.0000			0.0000
Total					**0.1071**	**0.0000**	**0.1071**	**0.0263**	**0.0000**	**0.0263**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5490	11.0645	16.9276	0.0275		0.5982	0.5982		0.5982	0.5982	0.0000	2,599.9866	2,599.9866	0.0874		2,601.8224
Paving	1.3627					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9117**	**11.0645**	**16.9276**	**0.0275**		**0.5982**	**0.5982**		**0.5982**	**0.5982**	**0.0000**	**2,599.9866**	**2,599.9866**	**0.0874**		**2,601.8224**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.1071	0.0000	0.1071	0.0263	0.0000	0.0263			0.0000			0.0000

Total					**0.1071**	**0.0000**	**0.1071**	**0.0263**	**0.0000**	**0.0263**			**0.0000**			**0.0000**

3.16 Years 10-30: Architectural Coating - 2044

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	45.5828					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1149	0.7270	1.7923	2.9700e-003		7.4300e-003	7.4300e-003		7.4300e-003	7.4300e-003		281.4481	281.4481	9.9000e-003		281.6561
Total	**45.6977**	**0.7270**	**1.7923**	**2.9700e-003**		**7.4300e-003**	**7.4300e-003**		**7.4300e-003**	**7.4300e-003**		**281.4481**	**281.4481**	**9.9000e-003**		**281.6561**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					1.4422	0.0000	1.4422	0.3540	0.0000	0.3540			0.0000			0.0000
Total					**1.4422**	**0.0000**	**1.4422**	**0.3540**	**0.0000**	**0.3540**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	45.5828					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	9.9000e-003		281.6561

Total	**45.6423**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**9.9000e-003**		**281.6561**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					1.4422	0.0000	1.4422	0.3540	0.0000	0.3540			0.0000			0.0000
Total					**1.4422**	**0.0000**	**1.4422**	**0.3540**	**0.0000**	**0.3540**			**0.0000**			**0.0000**

3.16 Years 10-30: Architectural Coating - 2045

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	45.5828					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1149	0.7270	1.7923	2.9700e-003		7.4300e-003	7.4300e-003		7.4300e-003	7.4300e-003		281.4481	281.4481	9.9000e-003		281.6561
Total	**45.6977**	**0.7270**	**1.7923**	**2.9700e-003**		**7.4300e-003**	**7.4300e-003**		**7.4300e-003**	**7.4300e-003**		**281.4481**	**281.4481**	**9.9000e-003**		**281.6561**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					1.4422	0.0000	1.4422	0.3540	0.0000	0.3540			0.0000			0.0000

Total					**1.4422**	**0.0000**	**1.4422**	**0.3540**	**0.0000**	**0.3540**			**0.0000**			**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	45.5828					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	9.9000e-003		281.6561
Total	**45.6423**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**9.9000e-003**		**281.6561**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					1.4422	0.0000	1.4422	0.3540	0.0000	0.3540			0.0000			0.0000
Total					**1.4422**	**0.0000**	**1.4422**	**0.3540**	**0.0000**	**0.3540**			**0.0000**			**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Implement Trip Reduction Program

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	101.0650	115.0826	628.5540	1.7158	102.2468	2.3956	104.6423	27.3185	2.2120	29.5305		123,758.9240	123,758.9240	2.9772		123,821.4454
Unmitigated	101.0650	115.0826	628.5540	1.7158	102.2468	2.3956	104.6423	27.3185	2.2120	29.5305		123,758.9240	123,758.9240	2.9772		123,821.4454

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	2,174.04	2,292.84	1991.88	1,925,587	1,925,587
City Park	0.00	0.00	0.00		
Condo/Townhouse	1,488.00	1,565.50	1364.00	1,317,551	1,317,551
General Light Industry	41,639.20	7,885.78	4064.10	28,442,317	28,442,317
General Office Building	576.00	232.20	38.40	333,396	333,396
Office Park	1,818.00	735.00	120.00	1,103,253	1,103,253
Regional Shopping Center	5,426.40	6,315.50	3189.20	2,855,190	2,855,190
Single Family Housing	1,902.12	2,003.76	1744.82	1,684,714	1,684,714
Parking Lot	0.00	0.00	0.00		
Total	55,023.76	21,030.58	12,512.40	37,662,007	37,662,007

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	3.35	2.26	2.33	42.60	21.00	36.40	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	3.35	2.26	2.33	42.60	21.00	36.40	86	11	3
General Light Industry	2.94	2.26	2.26	59.00	28.00	13.00	92	5	3
General Office Building	2.94	2.26	2.26	33.00	48.00	19.00	77	19	4
Office Park	2.94	2.26	2.26	33.00	48.00	19.00	82	15	3
Regional Shopping Center	2.94	2.26	2.26	16.30	64.70	19.00	54	35	11
Single Family Housing	3.35	2.26	2.33	42.60	21.00	36.40	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.439610	0.064325	0.188519	0.165588	0.061617	0.008591	0.013985	0.042670	0.001725	0.001053	0.008236	0.000439	0.003642

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
NaturalGas Mitigated	1.0889	9.6816	6.7210	0.0594		0.7523	0.7523		0.7523	0.7523		11,878.7767	11,878.7767	0.2277	0.2178	11,951.0689
NaturalGas Unmitigated	1.1994	10.6671	7.4272	0.0654		0.8286	0.8286		0.8286	0.8286		13,083.8458	13,083.8458	0.2508	0.2399	13,163.4719

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	14584.1	0.1573	1.3440	0.5719	8.5800e-003		0.1087	0.1087		0.1087	0.1087		1,715.7763	1,715.7763	0.0329	0.0315	1,726.2182
General Light Industry	57508.8	0.6202	5.6381	4.7360	0.0338		0.4285	0.4285		0.4285	0.4285		6,765.7438	6,765.7438	0.1297	0.1240	6,806.9189
General Office Building	2151.78	0.0232	0.2110	0.1772	1.2700e-003		0.0160	0.0160		0.0160	0.0160		253.1507	253.1507	4.8500e-003	4.6400e-003	254.6913
Office Park	7076.71	0.0763	0.6938	0.5828	4.1600e-003		0.0527	0.0527		0.0527	0.0527		832.5544	832.5544	0.0160	0.0153	837.6212
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	4336.16	0.0468	0.4251	0.3571	2.5500e-003		0.0323	0.0323		0.0323	0.0323		510.1370	510.1370	9.7800e-003	9.3500e-003	513.2416
Single Family Housing	16971	0.1830	1.5640	0.6655	9.9800e-003		0.1265	0.1265		0.1265	0.1265		1,996.5885	1,996.5885	0.0383	0.0366	2,008.7394
Apartments Mid Rise	8584.11	0.0926	0.7911	0.3366	5.0500e-003		0.0640	0.0640		0.0640	0.0640		1,009.8951	1,009.8951	0.0194	0.0185	1,016.0411
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.1994**	**10.6671**	**7.4272**	**0.0654**		**0.8287**	**0.8287**		**0.8287**	**0.8287**		**13,083.8458**	**13,083.8458**	**0.2508**	**0.2399**	**13,163.4719**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	51.7814	0.5584	5.0766	4.2644	0.0305		0.3858	0.3858		0.3858	0.3858		6,091.9272	6,091.9272	0.1168	0.1117	6,129.0016
General Office Building	1.94433	0.0210	0.1906	0.1601	1.1400e-003		0.0145	0.0145		0.0145	0.0145		228.7446	228.7446	4.3800e-003	4.1900e-003	230.1367
Office Park	6.36904	0.0687	0.6244	0.5245	3.7500e-003		0.0475	0.0475		0.0475	0.0475		749.2990	749.2990	0.0144	0.0137	753.8591
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	3.91932	0.0423	0.3843	0.3228	2.3100e-003		0.0292	0.0292		0.0292	0.0292		461.0959	461.0959	8.8400e-003	8.4500e-003	463.9020
Single Family Housing	15.6673	0.1690	1.4439	0.6144	9.2200e-003		0.1167	0.1167		0.1167	0.1167		1,843.2140	1,843.2140	0.0353	0.0338	1,854.4315
Apartments Mid Rise	7.9119	0.0853	0.7291	0.3103	4.6500e-003		0.0590	0.0590		0.0590	0.0590		930.8112	930.8112	0.0178	0.0171	936.4760
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	13.3763	0.1443	1.2327	0.5246	7.8700e-003		0.0997	0.0997		0.0997	0.0997		1,573.6849	1,573.6849	0.0302	0.0289	1,583.2621
Total		**1.0889**	**9.6816**	**6.7210**	**0.0594**		**0.7523**	**0.7523**		**0.7523**	**0.7523**		**11,878.7767**	**11,878.7767**	**0.2277**	**0.2178**	**11,951.0689**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	283.8001	0.7166	59.3720	2.6900e-003		0.7311	0.7311		0.7268	0.7268	0.0000	6,527.9778	6,527.9778	0.1940	0.1179	6,568.5901
Unmitigated	284.9060	0.9012	78.1895	4.1500e-003		0.8417	0.8417		0.8374	0.8374	0.0000	6,570.4807	6,570.4807	0.2585	0.1179	6,612.4486

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	8.8818					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	273.0843					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.5893	3.0000e-005	0.0322	0.0000		0.4072	0.4072		0.4029	0.4029	0.0000	6,429.1765	6,429.1765	0.1232	0.1179	6,468.3034
Landscaping	2.3505	0.9012	78.1574	4.1500e-003		0.4345	0.4345		0.4345	0.4345		141.3042	141.3042	0.1353		144.1453
Total	**284.9060**	**0.9012**	**78.1895**	**4.1500e-003**		**0.8417**	**0.8417**		**0.8374**	**0.8374**	**0.0000**	**6,570.4807**	**6,570.4807**	**0.2585**	**0.1179**	**6,612.4486**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	8.8818					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	273.0843					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.5893	3.0000e-005	0.0322	0.0000		0.4072	0.4072		0.4029	0.4029	0.0000	6,429.1765	6,429.1765	0.1232	0.1179	6,468.3034
Landscaping	1.2446	0.7165	59.3399	2.6900e-003		0.3239	0.3239		0.3239	0.3239		98.8014	98.8014	0.0707		100.2867
Total	**283.8001**	**0.7166**	**59.3720**	**2.6900e-003**		**0.7311**	**0.7311**		**0.7268**	**0.7268**	**0.0000**	**6,527.9778**	**6,527.9778**	**0.1940**	**0.1179**	**6,568.5901**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

CalEEMod Greenhouse Gas Emission Estimates for the 1996 HPMP

1996 HP Master Plan

Placer County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	2,661.00	1000sqft	309.36	2,661,000.00	0
Parking Lot	226.30	Acre	226.30	9,857,628.00	0
City Park	45.90	Acre	45.90	1,999,404.00	0
Regional Shopping Center	248.00	1000sqft	28.50	248,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2035
Utility Company	Roseville Electric				
CO2 Intensity (lb/MWhr)	642	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Updated Roseville Electric CO2 intensity factor for 2020

Land Use - Land uses were obtained from Table 9: Current and Proposed Land Use Comparison.

Construction Phase - Assumed construction schedule

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Adjusted worker and vender trip rates using the same methodology found in CalEEMod Appendix A.

On-road Fugitive Dust - Assumed 0.1 miles of unpaved road.

Grading - Total Acres Disturbed

Architectural Coating - Adjusted architectural coating square footage using equations found in CalEEMod Appendix A.

Vehicle Trips - Traffic trip rates are based on the Fehr Peers Preliminary Traffic Study for Campus Oaks Technical Memorandum dated August 28, 2014.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Area Coating - Adjusted architectural coating square footage using methodology found in CalEEMod Appendix A.

Energy Use - Adjusted Title 24 engergy use to reflect the changes per the 2013 Title 24 requirements.

Water And Wastewater -

Solid Waste -

Construction Off-road Equipment Mitigation - Same mitigation reflected in the 1996 HPMP EIR.

Mobile Commute Mitigation - 1996 HP Master Plan EIR - MM 4.10-3

Energy Mitigation - 1996 HP Master Plan EIR - MM 4.10-3. Exceed Title 24 by 10%

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tblTripsAndVMT	WorkerTripNumber	6,177.00	301.00
tblTripsAndVMT	WorkerTripNumber	1,235.00	60.00
tblTripsAndVMT	WorkerTripNumber	6,177.00	301.00
tblTripsAndVMT	WorkerTripNumber	6,177.00	301.00

tblTripsAndVMT	WorkerTripNumber	1,235.00	60.00
tblTripsAndVMT	WorkerTripNumber	1,235.00	60.00
tblTripsAndVMT	WorkerTripNumber	6,177.00	301.00
tblVehicleTrips	CC_TL	7.30	5.55
tblVehicleTrips	CC_TL	7.30	5.85
tblVehicleTrips	CC_TL	7.30	5.85
tblVehicleTrips	CNW_TL	7.30	5.55
tblVehicleTrips	CNW_TL	7.30	5.55
tblVehicleTrips	CNW_TL	7.30	5.55
tblVehicleTrips	CW_TL	9.50	7.22
tblVehicleTrips	CW_TL	9.50	7.22
tblVehicleTrips	CW_TL	9.50	7.22
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	1.32	1.99
tblVehicleTrips	ST_TR	49.97	35.08
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	0.68	1.02
tblVehicleTrips	SU_TR	25.24	17.72
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	6.97	10.49
tblVehicleTrips	WD_TR	42.94	30.14

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.4478	3.4648	3.5326	5.3100e-003	3.2256	0.1758	3.4014	0.4118	0.1640	0.5758	0.0000	468.0249	468.0249	0.0616	0.0000	469.3175
2016	2.8985	2.3618	2.6985	4.6300e-003	2.9685	0.1221	3.0906	0.3248	0.1144	0.4392	0.0000	396.9167	396.9167	0.0417	0.0000	397.7932
2020	0.2656	2.1010	2.6091	5.2000e-003	3.1669	0.0953	3.2622	0.4054	0.0888	0.4942	0.0000	415.7839	415.7839	0.0560	0.0000	416.9601
2021	2.7641	1.3898	2.1504	4.7000e-003	3.0272	0.0620	3.0892	0.3312	0.0581	0.3893	0.0000	368.6521	368.6521	0.0383	0.0000	369.4558
2025	0.1814	1.2872	2.2090	5.0900e-003	3.0891	0.0492	3.1383	0.4009	0.0458	0.4467	0.0000	401.0656	401.0656	0.0540	0.0000	402.1993
2026	2.7230	1.0363	2.0184	4.8300e-003	3.1153	0.0382	3.1535	0.3408	0.0358	0.3766	0.0000	372.8130	372.8130	0.0379	0.0000	373.6085
2030	0.1708	0.8472	2.0119	5.2800e-003	3.0554	0.0204	3.0758	0.3959	0.0199	0.4157	0.0000	420.5577	420.5577	0.0123	0.0000	420.8154
2031	2.7185	0.7826	1.9904	5.1600e-003	3.1737	0.0176	3.1914	0.3472	0.0171	0.3643	0.0000	395.9578	395.9578	0.0106	0.0000	396.1813
2035	0.1521	0.7250	1.9132	5.1600e-003	2.9615	0.0148	2.9764	0.3830	0.0144	0.3974	0.0000	410.2464	410.2464	0.0111	0.0000	410.4795
2036	2.6428	0.4353	1.0156	1.9200e-003	3.2006	6.4100e-003	3.2070	0.3410	6.4100e-003	0.3474	0.0000	163.6717	163.6717	6.1200e-003	0.0000	163.8002
2040	0.0913	0.4247	1.0667	2.3000e-003	2.8762	6.5400e-003	2.8828	0.3661	6.5400e-003	0.3726	0.0000	204.9814	204.9814	7.2100e-003	0.0000	205.1328
2041	2.6420	0.4182	1.0317	1.9600e-003	3.2587	5.0300e-003	3.2637	0.3472	5.0300e-003	0.3522	0.0000	166.2888	166.2888	5.9400e-003	0.0000	166.4135
Total	**17.6978**	**15.2738**	**24.2474**	**0.0515**	**37.1187**	**0.6134**	**37.7321**	**4.3953**	**0.5761**	**4.9713**	**0.0000**	**4,184.9598**	**4,184.9598**	**0.3427**	**0.0000**	**4,192.1569**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.2215	2.0755	3.2724	5.3100e-003	0.6816	0.0787	0.7603	0.1172	0.0775	0.1948	0.0000	468.0246	468.0246	0.0616	0.0000	469.3173
2016	2.7463	1.5450	2.6790	4.6300e-003	0.6107	0.0625	0.6731	0.0894	0.0615	0.1509	0.0000	396.9165	396.9165	0.0417	0.0000	397.7930
2020	0.1499	1.6639	2.6168	5.2000e-003	0.6696	0.0709	0.7405	0.1155	0.0703	0.1858	0.0000	415.7837	415.7837	0.0560	0.0000	416.9599
2021	2.6948	1.2134	2.2356	4.7000e-003	0.6227	0.0588	0.6814	0.0911	0.0582	0.1493	0.0000	368.6519	368.6519	0.0383	0.0000	369.4556
2025	0.1249	1.4761	2.3580	5.0900e-003	0.6549	0.0688	0.7237	0.1146	0.0683	0.1829	0.0000	401.0653	401.0653	0.0540	0.0000	402.1990
2026	2.6829	1.1514	2.1320	4.8300e-003	0.6407	0.0599	0.7007	0.0937	0.0594	0.1531	0.0000	372.8128	372.8128	0.0379	0.0000	373.6083
2030	0.1159	1.4305	2.2427	5.2800e-003	0.6476	0.0676	0.7153	0.1131	0.0671	0.1803	0.0000	420.5574	420.5574	0.0123	0.0000	420.8151
2031	2.6777	1.1548	2.0922	5.1600e-003	0.6525	0.0610	0.7135	0.0954	0.0604	0.1558	0.0000	395.9576	395.9576	0.0106	0.0000	396.1811
2035	0.1074	1.4013	2.1550	5.1600e-003	0.6277	0.0663	0.6939	0.1094	0.0658	0.1752	0.0000	410.2462	410.2462	0.0111	0.0000	410.4792
2036	2.6083	0.8734	1.1215	1.9200e-003	0.6326	0.0548	0.6875	0.0846	0.0548	0.1394	0.0000	163.6715	163.6715	6.1200e-003	0.0000	163.8000
2040	0.0506	1.1369	1.3115	2.3000e-003	0.5890	0.0592	0.6483	0.0972	0.0592	0.1564	0.0000	204.9812	204.9812	7.2100e-003	0.0000	205.1325
2041	2.6090	0.8876	1.1393	1.9600e-003	0.6441	0.0557	0.6998	0.0861	0.0557	0.1418	0.0000	166.2886	166.2886	5.9400e-003	0.0000	166.4133

Total	**16.7892**	**16.0097**	**25.3559**	**0.0515**	**7.6737**	**0.7642**	**8.4379**	**1.2073**	**0.7583**	**1.9656**	**0.0000**	**4,184.9573**	**4,184.9573**	**0.3427**	**0.0000**	**4,192.1544**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**5.13**	**-4.82**	**-4.57**	**0.00**	**79.33**	**-24.58**	**77.64**	**72.53**	**-31.63**	**60.46**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	59.0197	2.6000e-004	0.0291	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	0.0568	0.0568	1.5000e-004	0.0000	0.0599
Energy	0.2237	2.0333	1.7080	0.0122		0.1545	0.1545		0.1545	0.1545	0.0000	12,385.5482	12,385.5482	0.0424	0.0406	12,399.0190
Mobile	9.6610	18.9677	97.4565	0.3278	21.1931	0.4425	21.6356	5.6833	0.4083	6.0916	0.0000	21,607.7849	21,607.7849	0.5105	0.0000	21,618.5061
Waste						0.0000	0.0000		0.0000	0.0000	723.4578	0.0000	723.4578	42.7551	0.0000	1,621.3155
Water						0.0000	0.0000		0.0000	0.0000	201.0521	1,065.7891	1,266.8412	20.6500	0.4876	1,851.6438
Total	**68.9043**	**21.0012**	**99.1935**	**0.3400**	**21.1931**	**0.5972**	**21.7902**	**5.6833**	**0.5630**	**6.2462**	**924.5099**	**35,059.1790**	**35,983.6889**	**63.9582**	**0.5282**	**37,490.5443**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	59.0197	2.6000e-004	0.0291	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	0.0568	0.0568	1.5000e-004	0.0000	0.0599
Energy	0.2014	1.8312	1.5382	0.0110		0.1392	0.1392		0.1392	0.1392	0.0000	12,021.9630	12,021.9630	0.0382	0.0366	12,034.0948
Mobile	9.6088	18.7046	96.4625	0.3218	20.7830	0.4351	21.2181	5.5733	0.4015	5.9748	0.0000	21,207.3067	21,207.3067	0.5017	0.0000	21,217.8431
Waste						0.0000	0.0000		0.0000	0.0000	723.4578	0.0000	723.4578	42.7551	0.0000	1,621.3155
Water						0.0000	0.0000		0.0000	0.0000	201.0521	1,065.7891	1,266.8412	20.6500	0.4876	1,851.6438
Total	**68.8299**	**20.5361**	**98.0297**	**0.3328**	**20.7830**	**0.5744**	**21.3573**	**5.5733**	**0.5407**	**6.1140**	**924.5099**	**34,295.1156**	**35,219.6254**	**63.9452**	**0.5241**	**36,724.9570**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.11**	**2.21**	**1.17**	**2.14**	**1.93**	**3.82**	**1.99**	**1.93**	**3.95**	**2.12**	**0.00**	**2.18**	**2.12**	**0.02**	**0.76**	**2.04**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Years 1-5: Site Preparation	Site Preparation	7/1/2015	7/12/2015	5	8	
2	Years 1-5: Grading	Grading	7/13/2015	8/10/2015	5	21	
3	Years 1-5: Building Construction	Building Construction	8/11/2015	5/22/2016	5	204	
4	Years 1-5: Paving	Paving	5/23/2016	6/12/2016	5	15	
5	Years 1-5: Architectural Coating	Architectural Coating	6/13/2016	7/4/2016	5	16	
6	Years 5-10: Site Preparation	Site Preparation	7/3/2020	7/14/2020	5	8	
7	Years 5-10: Grading	Grading	7/15/2020	8/12/2020	5	21	
8	Years 5-10: Building Construction	Building Construction	8/13/2020	5/25/2021	5	204	
9	Years 5-10: Paving	Paving	5/26/2021	6/15/2021	5	15	
10	Years 5-10: Architectural Coating	Architectural Coating	6/16/2021	7/7/2021	5	16	
11	Years 10-15: Site Preparation	Site Preparation	7/6/2025	7/17/2025	5	9	
12	Years 10-15: Grading	Grading	7/18/2025	8/15/2025	5	21	
13	Years 10-15: Building Construction	Building Construction	8/16/2025	5/28/2026	5	204	
14	Years 10-15: Paving	Paving	5/29/2026	6/18/2026	5	15	

15	Years 10-15: Architectural Coating	Architectural Coating	6/19/2026	7/10/2026	5	16	
16	Years 15-20: Site Preparation	Site Preparation	7/9/2030	7/20/2030	5	9	
17	Years 15-20: Grading	Grading	7/21/2030	8/18/2030	5	20	
18	Years 15-20: Building Construction	Building Construction	8/19/2030	5/31/2031	5	205	
19	Years 15-20: Paving	Paving	6/1/2031	6/21/2031	5	15	
20	Years 15-20: Architectural Coating	Architectural Coating	6/22/2031	7/13/2031	5	15	
21	Years 20-25: Site Preparation	Site Preparation	7/12/2035	7/23/2035	5	8	
22	Years 20-25: Grading	Grading	7/24/2035	8/21/2035	5	21	
23	Years 20-25: Building Construction	Building Construction	8/22/2035	6/2/2036	5	204	
24	Years 20-25: Paving	Paving	6/3/2036	6/23/2036	5	15	
25	Years 20-35: Architectural Coating	Architectural Coating	6/24/2036	7/15/2036	5	16	
26	Years 25-30: Site Preparation	Site Preparation	7/14/2040	7/25/2040	5	8	
27	Years 25-30: Grading	Grading	7/26/2040	8/23/2040	5	21	
28	Years 25-30: Building Construction	Building Construction	8/24/2040	6/5/2041	5	204	
29	Years 25-30: Paving	Paving	6/6/2041	6/26/2041	5	15	
30	Years 25-30: Architectural Coating	Architectural Coating	6/27/2041	7/18/2041	5	16	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 734,750; Non-Residential Outdoor: 244,917 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Years 1-5: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 1-5: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 1-5: Grading	Excavators	2	8.00	162	0.38
Years 1-5: Grading	Graders	1	8.00	174	0.41
Years 1-5: Grading	Rubber Tired Dozers	1	8.00	255	0.40
Years 1-5: Grading	Scrapers	2	8.00	361	0.48
Years 1-5: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 1-5: Building Construction	Cranes	1	7.00	226	0.29
Years 1-5: Building Construction	Forklifts	3	8.00	89	0.20
Years 1-5: Building Construction	Generator Sets	1	8.00	84	0.74
Years 1-5: Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 1-5: Building Construction	Welders	1	8.00	46	0.45
Years 1-5: Paving	Pavers	2	8.00	125	0.42
Years 1-5: Paving	Paving Equipment	2	8.00	130	0.36
Years 1-5: Paving	Rollers	2	8.00	80	0.38
Years 1-5: Architectural Coating	Air Compressors	1	6.00	78	0.48
Years 5-10: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 5-10: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 5-10: Grading	Excavators	2	8.00	162	0.38
Years 5-10: Grading	Graders	1	8.00	174	0.41
Years 5-10: Grading	Rubber Tired Dozers	1	8.00	255	0.40
Years 5-10: Grading	Scrapers	2	8.00	361	0.48

Years 5-10: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 5-10: Building Construction	Cranes	1	7.00	226	0.29
Years 5-10: Building Construction	Forklifts	3	8.00	89	0.20
Years 5-10: Building Construction	Generator Sets	1	8.00	84	0.74
Years 5-10: Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 5-10: Building Construction	Welders	1	8.00	46	0.45
Years 5-10: Paving	Pavers	2	8.00	125	0.42
Years 5-10: Paving	Paving Equipment	2	8.00	130	0.36
Years 5-10: Paving	Rollers	2	8.00	80	0.38
Years 5-10: Architectural Coating	Air Compressors	1	6.00	78	0.48
Years 10-15: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 10-15: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 10-15: Grading	Excavators	2	8.00	162	0.38
Years 10-15: Grading	Graders	1	8.00	174	0.41
Years 10-15: Grading	Rubber Tired Dozers	1	8.00	255	0.40
Years 10-15: Grading	Scrapers	2	8.00	361	0.48
Years 10-15: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 10-15: Building Construction	Cranes	1	7.00	226	0.29
Years 10-15: Building Construction	Forklifts	3	8.00	89	0.20
Years 10-15: Building Construction	Generator Sets	1	8.00	84	0.74
Years 10-15: Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 10-15: Building Construction	Welders	1	8.00	46	0.45
Years 10-15: Paving	Pavers	2	8.00	125	0.42
Years 10-15: Paving	Paving Equipment	2	8.00	130	0.36

Years 10-15: Paving	Rollers	2	8.00	80	0.38
Years 10-15: Architectural Coating	Air Compressors	1	6.00	78	0.48
Years 15-20: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 15-20: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 15-20: Grading	Excavators	2	8.00	162	0.38
Years 15-20: Grading	Graders	1	8.00	174	0.41
Years 15-20: Grading	Rubber Tired Dozers	1	8.00	255	0.40
Years 15-20: Grading	Scrapers	2	8.00	361	0.48
Years 15-20: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 15-20: Building Construction	Cranes	1	7.00	226	0.29
Years 15-20: Building Construction	Forklifts	3	8.00	89	0.20
Years 15-20: Building Construction	Generator Sets	1	8.00	84	0.74
Years 15-20: Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 15-20: Building Construction	Welders	1	8.00	46	0.45
Years 15-20: Paving	Pavers	2	8.00	125	0.42
Years 15-20: Paving	Paving Equipment	2	8.00	130	0.36
Years 15-20: Paving	Rollers	2	8.00	80	0.38
Years 15-20: Architectural Coating	Air Compressors	1	6.00	78	0.48
Years 20-25: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 20-25: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 20-25: Grading	Excavators	2	8.00	162	0.38
Years 20-25: Grading	Graders	1	8.00	174	0.41
Years 20-25: Grading	Rubber Tired Dozers	1	8.00	255	0.40
Years 20-25: Grading	Scrapers	2	8.00	361	0.48

Years 20-25: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 20-25: Building Construction	Cranes	1	7.00	226	0.29
Years 20-25: Building Construction	Forklifts	3	8.00	89	0.20
Years 20-25: Building Construction	Generator Sets	1	8.00	84	0.74
Years 20-25: Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 20-25: Building Construction	Welders	1	8.00	46	0.45
Years 20-25: Paving	Pavers	2	8.00	125	0.42
Years 20-25: Paving	Paving Equipment	2	8.00	130	0.36
Years 20-25: Paving	Rollers	2	8.00	80	0.38
Years 20-35: Architectural Coating	Air Compressors	1	6.00	78	0.48
Years 25-30: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 25-30: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 25-30: Grading	Excavators	2	8.00	162	0.38
Years 25-30: Grading	Graders	1	8.00	174	0.41
Years 25-30: Grading	Rubber Tired Dozers	1	8.00	255	0.40
Years 25-30: Grading	Scrapers	2	8.00	361	0.48
Years 25-30: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 25-30: Building Construction	Cranes	1	7.00	226	0.29
Years 25-30: Building Construction	Forklifts	3	8.00	89	0.20
Years 25-30: Building Construction	Generator Sets	1	8.00	84	0.74
Years 25-30: Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 25-30: Building Construction	Welders	1	8.00	46	0.45
Years 25-30: Paving	Pavers	2	8.00	125	0.42
Years 25-30: Paving	Paving Equipment	2	8.00	130	0.36

Years 25-30: Paving	Rollers	2	8.00	80	0.38
Years 25-30: Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Years 1-5: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 1-5: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 1-5: Building Construction	9	301.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 1-5: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 1-5: Architectural	1	60.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Building Construction	9	301.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Architectural	1	60.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-15: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-15: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-15: Building	9	301.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-15: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-15: Architectural	1	60.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 15-20: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 15-20: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 15-20: Building	9	301.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Years 15-20: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 15-20: Architectural	1	60.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 20-25: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 20-25: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 20-25: Building	9	301.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 20-25: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 20-35: Architectural	1	60.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 25-30: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 25-30: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 25-30: Building	9	301.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 25-30: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 25-30: Architectural	1	60.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Years 1-5: Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0723	0.0000	0.0723	0.0397	0.0000	0.0397	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0210	0.2276	0.1705	1.6000e-004		0.0124	0.0124		0.0114	0.0114	0.0000	14.9205	14.9205	4.4500e-003	0.0000	15.0140
Total	**0.0210**	**0.2276**	**0.1705**	**1.6000e-004**	**0.0723**	**0.0124**	**0.0846**	**0.0397**	**0.0114**	**0.0511**	**0.0000**	**14.9205**	**14.9205**	**4.4500e-003**	**0.0000**	**15.0140**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.3000e-004	3.4000e-003	1.0000e-005	9.6800e-003	0.0000	9.6900e-003	1.0600e-003	0.0000	1.0600e-003	0.0000	0.5165	0.5165	3.0000e-005	0.0000	0.5170
Total	**2.7000e-004**	**3.3000e-004**	**3.4000e-003**	**1.0000e-005**	**9.6800e-003**	**0.0000**	**9.6900e-003**	**1.0600e-003**	**0.0000**	**1.0600e-003**	**0.0000**	**0.5165**	**0.5165**	**3.0000e-005**	**0.0000**	**0.5170**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0244	0.0000	0.0244	0.0134	0.0000	0.0134	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8100e-003	0.0778	0.0936	1.6000e-004		3.8400e-003	3.8400e-003		3.8400e-003	3.8400e-003	0.0000	14.9204	14.9204	4.4500e-003	0.0000	15.0140
Total	**3.8100e-003**	**0.0778**	**0.0936**	**1.6000e-004**	**0.0244**	**3.8400e-003**	**0.0282**	**0.0134**	**3.8400e-003**	**0.0173**	**0.0000**	**14.9204**	**14.9204**	**4.4500e-003**	**0.0000**	**15.0140**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.3000e-004	3.4000e-003	1.0000e-005	2.0100e-003	0.0000	2.0100e-003	2.9000e-004	0.0000	3.0000e-004	0.0000	0.5165	0.5165	3.0000e-005	0.0000	0.5170

Total	**2.7000e-004**	**3.3000e-004**	**3.4000e-003**	**1.0000e-005**	**2.0100e-003**	**0.0000**	**2.0100e-003**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**0.0000**	**0.5165**	**0.5165**	**3.0000e-005**	**0.0000**	**0.5170**

3.3 Years 1-5: Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0928	0.0000	0.0928	0.0380	0.0000	0.0380	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0711	0.8300	0.5338	6.5000e-004		0.0399	0.0399		0.0367	0.0367	0.0000	61.7843	61.7843	0.0185	0.0000	62.1717
Total	**0.0711**	**0.8300**	**0.5338**	**6.5000e-004**	**0.0928**	**0.0399**	**0.1327**	**0.0380**	**0.0367**	**0.0747**	**0.0000**	**61.7843**	**61.7843**	**0.0185**	**0.0000**	**62.1717**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	9.6000e-004	9.9200e-003	2.0000e-005	0.0283	1.0000e-005	0.0283	3.0900e-003	1.0000e-005	3.1000e-003	0.0000	1.5064	1.5064	8.0000e-005	0.0000	1.5080
Total	**7.8000e-004**	**9.6000e-004**	**9.9200e-003**	**2.0000e-005**	**0.0283**	**1.0000e-005**	**0.0283**	**3.0900e-003**	**1.0000e-005**	**3.1000e-003**	**0.0000**	**1.5064**	**1.5064**	**8.0000e-005**	**0.0000**	**1.5080**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0313	0.0000	0.0313	0.0128	0.0000	0.0128	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.4070	0.3984	6.5000e-004		0.0139	0.0139		0.0139	0.0139	0.0000	61.7843	61.7843	0.0185	0.0000	62.1716

Total	**0.0159**	**0.4070**	**0.3984**	**6.5000e-004**	**0.0313**	**0.0139**	**0.0452**	**0.0128**	**0.0139**	**0.0267**	**0.0000**	**61.7843**	**61.7843**	**0.0185**	**0.0000**	**62.1716**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	9.6000e-004	9.9200e-003	2.0000e-005	5.8600e-003	1.0000e-005	5.8700e-003	8.5000e-004	1.0000e-005	8.7000e-004	0.0000	1.5064	1.5064	8.0000e-005	0.0000	1.5080
Total	**7.8000e-004**	**9.6000e-004**	**9.9200e-003**	**2.0000e-005**	**5.8600e-003**	**1.0000e-005**	**5.8700e-003**	**8.5000e-004**	**1.0000e-005**	**8.7000e-004**	**0.0000**	**1.5064**	**1.5064**	**8.0000e-005**	**0.0000**	**1.5080**

3.4 Years 1-5: Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1884	1.5465	0.9653	1.3800e-003		0.1090	0.1090		0.1025	0.1025	0.0000	125.6571	125.6571	0.0315	0.0000	126.3192
Total	**0.1884**	**1.5465**	**0.9653**	**1.3800e-003**		**0.1090**	**0.1090**		**0.1025**	**0.1025**	**0.0000**	**125.6571**	**125.6571**	**0.0315**	**0.0000**	**126.3192**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1087	0.7887	1.1174	1.6600e-003	0.9374	0.0137	0.9510	0.1018	0.0126	0.1144	0.0000	152.4402	152.4402	1.3800e-003	0.0000	152.4692
Worker	0.0575	0.0707	0.7322	1.4400e-003	2.0851	8.9000e-004	2.0860	0.2282	8.1000e-004	0.2290	0.0000	111.1999	111.1999	5.6500e-003	0.0000	111.3184

Total	**0.1662**	**0.8594**	**1.8496**	**3.1000e-003**	**3.0225**	**0.0145**	**3.0371**	**0.3300**	**0.0134**	**0.3433**	**0.0000**	**263.6401**	**263.6401**	**7.0300e-003**	**0.0000**	**263.7876**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0346	0.7300	0.9175	1.3800e-003		0.0464	0.0464		0.0464	0.0464	0.0000	125.6569	125.6569	0.0315	0.0000	126.3190
Total	**0.0346**	**0.7300**	**0.9175**	**1.3800e-003**		**0.0464**	**0.0464**		**0.0464**	**0.0464**	**0.0000**	**125.6569**	**125.6569**	**0.0315**	**0.0000**	**126.3190**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1087	0.7887	1.1174	1.6600e-003	0.1858	0.0137	0.1994	0.0268	0.0126	0.0393	0.0000	152.4402	152.4402	1.3800e-003	0.0000	152.4692
Worker	0.0575	0.0707	0.7322	1.4400e-003	0.4322	8.9000e-004	0.4331	0.0631	8.1000e-004	0.0639	0.0000	111.1999	111.1999	5.6500e-003	0.0000	111.3184
Total	**0.1662**	**0.8594**	**1.8496**	**3.1000e-003**	**0.6180**	**0.0145**	**0.6325**	**0.0899**	**0.0134**	**0.1032**	**0.0000**	**263.6401**	**263.6401**	**7.0300e-003**	**0.0000**	**263.7876**

3.4 Years 1-5: Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1720	1.4396	0.9346	1.3500e-003		0.0994	0.0994		0.0934	0.0934	0.0000	122.2876	122.2876	0.0303	0.0000	122.9245
Total	**0.1720**	**1.4396**	**0.9346**	**1.3500e-003**		**0.0994**	**0.0994**		**0.0934**	**0.0934**	**0.0000**	**122.2876**	**122.2876**	**0.0303**	**0.0000**	**122.9245**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0892	0.6713	0.9782	1.6300e-003	0.9192	0.0108	0.9300	0.0998	9.9500e-003	0.1098	0.0000	147.6692	147.6692	1.2000e-003	0.0000	147.6943
Worker	0.0499	0.0616	0.6348	1.4100e-003	2.0447	8.3000e-004	2.0455	0.2237	7.6000e-004	0.2245	0.0000	105.0618	105.0618	5.0200e-003	0.0000	105.1672
Total	**0.1391**	**0.7329**	**1.6130**	**3.0400e-003**	**2.9638**	**0.0117**	**2.9755**	**0.3236**	**0.0107**	**0.3343**	**0.0000**	**252.7310**	**252.7310**	**6.2200e-003**	**0.0000**	**252.8616**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0339	0.7158	0.8997	1.3500e-003		0.0455	0.0455		0.0455	0.0455	0.0000	122.2874	122.2874	0.0303	0.0000	122.9243
Total	**0.0339**	**0.7158**	**0.8997**	**1.3500e-003**		**0.0455**	**0.0455**		**0.0455**	**0.0455**	**0.0000**	**122.2874**	**122.2874**	**0.0303**	**0.0000**	**122.9243**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0892	0.6713	0.9782	1.6300e-003	0.1822	0.0108	0.1930	0.0262	9.9500e-003	0.0362	0.0000	147.6692	147.6692	1.2000e-003	0.0000	147.6943
Worker	0.0499	0.0616	0.6348	1.4100e-003	0.4239	8.3000e-004	0.4247	0.0619	7.6000e-004	0.0626	0.0000	105.0618	105.0618	5.0200e-003	0.0000	105.1672

Total	**0.1391**	**0.7329**	**1.6130**	**3.0400e-003**	**0.6060**	**0.0117**	**0.6177**	**0.0881**	**0.0107**	**0.0988**	**0.0000**	**252.7310**	**252.7310**	**6.2200e-003**	**0.0000**	**252.8616**

3.5 Years 1-5: Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0157	0.1679	0.1111	1.7000e-004		9.4600e-003	9.4600e-003		8.7000e-003	8.7000e-003	0.0000	15.7604	15.7604	4.7500e-003	0.0000	15.8602
Paving	0.2965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3121**	**0.1679**	**0.1111**	**1.7000e-004**		**9.4600e-003**	**9.4600e-003**		**8.7000e-003**	**8.7000e-003**	**0.0000**	**15.7604**	**15.7604**	**4.7500e-003**	**0.0000**	**15.8602**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	4.6000e-004	4.7000e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.7776	0.7776	4.0000e-005	0.0000	0.7784
Total	**3.7000e-004**	**4.6000e-004**	**4.7000e-003**	**1.0000e-005**	**8.8000e-004**	**1.0000e-005**	**8.9000e-004**	**2.4000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.7776**	**0.7776**	**4.0000e-005**	**0.0000**	**0.7784**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1200e-003	0.0830	0.1270	1.7000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	15.7603	15.7603	4.7500e-003	0.0000	15.8602
Paving	0.2965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.3006**	**0.0830**	**0.1270**	**1.7000e-004**		**4.4900e-003**	**4.4900e-003**		**4.4900e-003**	**4.4900e-003**	**0.0000**	**15.7603**	**15.7603**	**4.7500e-003**	**0.0000**	**15.8602**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	4.6000e-004	4.7000e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.7776	0.7776	4.0000e-005	0.0000	0.7784
Total	**3.7000e-004**	**4.6000e-004**	**4.7000e-003**	**1.0000e-005**	**8.8000e-004**	**1.0000e-005**	**8.9000e-004**	**2.4000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.7776**	**0.7776**	**4.0000e-005**	**0.0000**	**0.7784**

3.6 Years 1-5: Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.2704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9500e-003	0.0190	0.0151	2.0000e-005		1.5700e-003	1.5700e-003		1.5700e-003	1.5700e-003	0.0000	2.0426	2.0426	2.4000e-004	0.0000	2.0477
Total	**2.2733**	**0.0190**	**0.0151**	**2.0000e-005**		**1.5700e-003**	**1.5700e-003**		**1.5700e-003**	**1.5700e-003**	**0.0000**	**2.0426**	**2.0426**	**2.4000e-004**	**0.0000**	**2.0477**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5700e-003	1.9400e-003	0.0201	4.0000e-005	3.7700e-003	3.0000e-005	3.8000e-003	1.0000e-003	2.0000e-005	1.0300e-003	0.0000	3.3176	3.3176	1.6000e-004	0.0000	3.3210

Total	**1.5700e-003**	**1.9400e-003**	**0.0201**	**4.0000e-005**	**3.7700e-003**	**3.0000e-005**	**3.8000e-003**	**1.0000e-003**	**2.0000e-005**	**1.0300e-003**	**0.0000**	**3.3176**	**3.3176**	**1.6000e-004**	**0.0000**	**3.3210**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.2704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8000e-004	0.0109	0.0147	2.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	2.0426	2.0426	2.4000e-004	0.0000	2.0477
Total	**2.2709**	**0.0109**	**0.0147**	**2.0000e-005**		**7.6000e-004**	**7.6000e-004**		**7.6000e-004**	**7.6000e-004**	**0.0000**	**2.0426**	**2.0426**	**2.4000e-004**	**0.0000**	**2.0477**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5700e-003	1.9400e-003	0.0201	4.0000e-005	3.7700e-003	3.0000e-005	3.8000e-003	1.0000e-003	2.0000e-005	1.0300e-003	0.0000	3.3176	3.3176	1.6000e-004	0.0000	3.3210
Total	**1.5700e-003**	**1.9400e-003**	**0.0201**	**4.0000e-005**	**3.7700e-003**	**3.0000e-005**	**3.8000e-003**	**1.0000e-003**	**2.0000e-005**	**1.0300e-003**	**0.0000**	**3.3176**	**3.3176**	**1.6000e-004**	**0.0000**	**3.3210**

3.7 Years 5-10: Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0723	0.0000	0.0723	0.0397	0.0000	0.0397	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0149	0.1555	0.1317	1.6000e-004		7.7200e-003	7.7200e-003		7.1100e-003	7.1100e-003	0.0000	13.7612	13.7612	4.4500e-003	0.0000	13.8547

Total	**0.0149**	**0.1555**	**0.1317**	**1.6000e-004**	**0.0723**	**7.7200e-003**	**0.0800**	**0.0397**	**7.1100e-003**	**0.0468**	**0.0000**	**13.7612**	**13.7612**	**4.4500e-003**	**0.0000**	**13.8547**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.9000e-004	1.9600e-003	1.0000e-005	9.6800e-003	0.0000	9.6900e-003	1.0600e-003	0.0000	1.0600e-003	0.0000	0.4256	0.4256	2.0000e-005	0.0000	0.4260
Total	**1.5000e-004**	**1.9000e-004**	**1.9600e-003**	**1.0000e-005**	**9.6800e-003**	**0.0000**	**9.6900e-003**	**1.0600e-003**	**0.0000**	**1.0600e-003**	**0.0000**	**0.4256**	**0.4256**	**2.0000e-005**	**0.0000**	**0.4260**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0244	0.0000	0.0244	0.0134	0.0000	0.0134	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8100e-003	0.0778	0.0936	1.6000e-004		3.8400e-003	3.8400e-003		3.8400e-003	3.8400e-003	0.0000	13.7612	13.7612	4.4500e-003	0.0000	13.8547
Total	**3.8100e-003**	**0.0778**	**0.0936**	**1.6000e-004**	**0.0244**	**3.8400e-003**	**0.0282**	**0.0134**	**3.8400e-003**	**0.0173**	**0.0000**	**13.7612**	**13.7612**	**4.4500e-003**	**0.0000**	**13.8547**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.9000e-004	1.9600e-003	1.0000e-005	2.0100e-003	0.0000	2.0100e-003	2.9000e-004	0.0000	3.0000e-004	0.0000	0.4256	0.4256	2.0000e-005	0.0000	0.4260

Total	**1.5000e-004**	**1.9000e-004**	**1.9600e-003**	**1.0000e-005**	**2.0100e-003**	**0.0000**	**2.0100e-003**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**0.0000**	**0.4256**	**0.4256**	**2.0000e-005**	**0.0000**	**0.4260**

3.8 Years 5-10: Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0928	0.0000	0.0928	0.0380	0.0000	0.0380	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0478	0.5185	0.4035	6.5000e-004		0.0238	0.0238		0.0219	0.0219	0.0000	56.9403	56.9403	0.0184	0.0000	57.3270
Total	**0.0478**	**0.5185**	**0.4035**	**6.5000e-004**	**0.0928**	**0.0238**	**0.1166**	**0.0380**	**0.0219**	**0.0598**	**0.0000**	**56.9403**	**56.9403**	**0.0184**	**0.0000**	**57.3270**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	5.7000e-004	5.7300e-003	2.0000e-005	0.0283	1.0000e-005	0.0283	3.0900e-003	1.0000e-005	3.1000e-003	0.0000	1.2413	1.2413	5.0000e-005	0.0000	1.2424
Total	**4.5000e-004**	**5.7000e-004**	**5.7300e-003**	**2.0000e-005**	**0.0283**	**1.0000e-005**	**0.0283**	**3.0900e-003**	**1.0000e-005**	**3.1000e-003**	**0.0000**	**1.2413**	**1.2413**	**5.0000e-005**	**0.0000**	**1.2424**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0313	0.0000	0.0313	0.0128	0.0000	0.0128	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.4070	0.3984	6.5000e-004		0.0139	0.0139		0.0139	0.0139	0.0000	56.9402	56.9402	0.0184	0.0000	57.3270

Total	**0.0159**	**0.4070**	**0.3984**	**6.5000e-004**	**0.0313**	**0.0139**	**0.0452**	**0.0128**	**0.0139**	**0.0267**	**0.0000**	**56.9402**	**56.9402**	**0.0184**	**0.0000**	**57.3270**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	5.7000e-004	5.7300e-003	2.0000e-005	5.8600e-003	1.0000e-005	5.8700e-003	8.5000e-004	1.0000e-005	8.6000e-004	0.0000	1.2413	1.2413	5.0000e-005	0.0000	1.2424
Total	**4.5000e-004**	**5.7000e-004**	**5.7300e-003**	**2.0000e-005**	**5.8600e-003**	**1.0000e-005**	**5.8700e-003**	**8.5000e-004**	**1.0000e-005**	**8.6000e-004**	**0.0000**	**1.2413**	**1.2413**	**5.0000e-005**	**0.0000**	**1.2424**

3.9 Years 5-10: Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1066	0.9637	0.8488	1.3500e-003		0.0562	0.0562		0.0529	0.0529	0.0000	116.4782	116.4782	0.0284	0.0000	117.0741
Total	**0.1066**	**0.9637**	**0.8488**	**1.3500e-003**		**0.0562**	**0.0562**		**0.0529**	**0.0529**	**0.0000**	**116.4782**	**116.4782**	**0.0284**	**0.0000**	**117.0741**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0635	0.4214	0.8029	1.6200e-003	0.9192	6.8100e-003	0.9260	0.0998	6.2700e-003	0.1061	0.0000	137.0895	137.0895	1.0000e-003	0.0000	137.1106
Worker	0.0322	0.0411	0.4145	1.4000e-003	2.0447	7.9000e-004	2.0454	0.2237	7.3000e-004	0.2245	0.0000	89.8478	89.8478	3.7000e-003	0.0000	89.9254

Total	**0.0957**	**0.4625**	**1.2174**	**3.0200e-003**	**2.9639**	**7.6000e-003**	**2.9715**	**0.3236**	**7.0000e-003**	**0.3306**	**0.0000**	**226.9373**	**226.9373**	**4.7000e-003**	**0.0000**	**227.0360**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0339	0.7158	0.8997	1.3500e-003		0.0455	0.0455		0.0455	0.0455	0.0000	116.4781	116.4781	0.0284	0.0000	117.0740
Total	**0.0339**	**0.7158**	**0.8997**	**1.3500e-003**		**0.0455**	**0.0455**		**0.0455**	**0.0455**	**0.0000**	**116.4781**	**116.4781**	**0.0284**	**0.0000**	**117.0740**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0635	0.4214	0.8029	1.6200e-003	0.1822	6.8100e-003	0.1890	0.0262	6.2700e-003	0.0325	0.0000	137.0895	137.0895	1.0000e-003	0.0000	137.1106
Worker	0.0322	0.0411	0.4145	1.4000e-003	0.4239	7.9000e-004	0.4246	0.0619	7.3000e-004	0.0626	0.0000	89.8478	89.8478	3.7000e-003	0.0000	89.9254
Total	**0.0957**	**0.4625**	**1.2174**	**3.0200e-003**	**0.6060**	**7.6000e-003**	**0.6136**	**0.0881**	**7.0000e-003**	**0.0951**	**0.0000**	**226.9373**	**226.9373**	**4.7000e-003**	**0.0000**	**227.0360**

3.9 Years 5-10: Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0975	0.8930	0.8517	1.3800e-003		0.0492	0.0492		0.0462	0.0462	0.0000	118.7988	118.7988	0.0286	0.0000	119.3998
Total	**0.0975**	**0.8930**	**0.8517**	**1.3800e-003**		**0.0492**	**0.0492**		**0.0462**	**0.0462**	**0.0000**	**118.7988**	**118.7988**	**0.0286**	**0.0000**	**119.3998**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0565	0.3488	0.7642	1.6400e-003	0.9374	6.2300e-003	0.9436	0.1018	5.7300e-003	0.1076	0.0000	139.5643	139.5643	1.0200e-003	0.0000	139.5856
Worker	0.0311	0.0393	0.3972	1.4300e-003	2.0851	8.1000e-004	2.0860	0.2282	7.5000e-004	0.2289	0.0000	90.1043	90.1043	3.6000e-003	0.0000	90.1800
Total	**0.0876**	**0.3881**	**1.1613**	**3.0700e-003**	**3.0226**	**7.0400e-003**	**3.0296**	**0.3300**	**6.4800e-003**	**0.3365**	**0.0000**	**229.6686**	**229.6686**	**4.6200e-003**	**0.0000**	**229.7656**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0346	0.7300	0.9175	1.3800e-003		0.0464	0.0464		0.0464	0.0464	0.0000	118.7987	118.7987	0.0286	0.0000	119.3997
Total	**0.0346**	**0.7300**	**0.9175**	**1.3800e-003**		**0.0464**	**0.0464**		**0.0464**	**0.0464**	**0.0000**	**118.7987**	**118.7987**	**0.0286**	**0.0000**	**119.3997**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0565	0.3488	0.7642	1.6400e-003	0.1858	6.2300e-003	0.1920	0.0268	5.7300e-003	0.0325	0.0000	139.5643	139.5643	1.0200e-003	0.0000	139.5856
Worker	0.0311	0.0393	0.3972	1.4300e-003	0.4322	8.1000e-004	0.4331	0.0631	7.5000e-004	0.0639	0.0000	90.1043	90.1043	3.6000e-003	0.0000	90.1800

Total	**0.0876**	**0.3881**	**1.1613**	**3.0700e-003**	**0.6180**	**7.0400e-003**	**0.6251**	**0.0899**	**6.4800e-003**	**0.0964**	**0.0000**	**229.6686**	**229.6686**	**4.6200e-003**	**0.0000**	**229.7656**

3.10 Years 5-10: Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.2300e-003	0.0950	0.1077	1.7000e-004		4.9900e-003	4.9900e-003		4.5900e-003	4.5900e-003	0.0000	14.6981	14.6981	4.7500e-003	0.0000	14.7979
Paving	0.2965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3057**	**0.0950**	**0.1077**	**1.7000e-004**		**4.9900e-003**	**4.9900e-003**		**4.5900e-003**	**4.5900e-003**	**0.0000**	**14.6981**	**14.6981**	**4.7500e-003**	**0.0000**	**14.7979**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	2.9000e-004	2.8800e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.6539	0.6539	3.0000e-005	0.0000	0.6545
Total	**2.3000e-004**	**2.9000e-004**	**2.8800e-003**	**1.0000e-005**	**8.8000e-004**	**1.0000e-005**	**8.9000e-004**	**2.4000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.6539**	**0.6539**	**3.0000e-005**	**0.0000**	**0.6545**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1200e-003	0.0830	0.1270	1.7000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	14.6981	14.6981	4.7500e-003	0.0000	14.7979
Paving	0.2965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.3006**	**0.0830**	**0.1270**	**1.7000e-004**		**4.4900e-003**	**4.4900e-003**		**4.4900e-003**	**4.4900e-003**	**0.0000**	**14.6981**	**14.6981**	**4.7500e-003**	**0.0000**	**14.7979**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	2.9000e-004	2.8800e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.6539	0.6539	3.0000e-005	0.0000	0.6545
Total	**2.3000e-004**	**2.9000e-004**	**2.8800e-003**	**1.0000e-005**	**8.8000e-004**	**1.0000e-005**	**8.9000e-004**	**2.4000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.6539**	**0.6539**	**3.0000e-005**	**0.0000**	**0.6545**

3.11 Years 5-10: Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.2704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7500e-003	0.0122	0.0145	2.0000e-005		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	2.0426	2.0426	1.4000e-004	0.0000	2.0456
Total	**2.2721**	**0.0122**	**0.0145**	**2.0000e-005**		**7.5000e-004**	**7.5000e-004**		**7.5000e-004**	**7.5000e-004**	**0.0000**	**2.0426**	**2.0426**	**1.4000e-004**	**0.0000**	**2.0456**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.6000e-004	1.2200e-003	0.0123	4.0000e-005	3.7700e-003	3.0000e-005	3.7900e-003	1.0000e-003	2.0000e-005	1.0300e-003	0.0000	2.7901	2.7901	1.1000e-004	0.0000	2.7924

Total	**9.6000e-004**	**1.2200e-003**	**0.0123**	**4.0000e-005**	**3.7700e-003**	**3.0000e-005**	**3.7900e-003**	**1.0000e-003**	**2.0000e-005**	**1.0300e-003**	**0.0000**	**2.7901**	**2.7901**	**1.1000e-004**	**0.0000**	**2.7924**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.2704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8000e-004	0.0109	0.0147	2.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	2.0426	2.0426	1.4000e-004	0.0000	2.0455
Total	**2.2709**	**0.0109**	**0.0147**	**2.0000e-005**		**7.6000e-004**	**7.6000e-004**		**7.6000e-004**	**7.6000e-004**	**0.0000**	**2.0426**	**2.0426**	**1.4000e-004**	**0.0000**	**2.0455**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.6000e-004	1.2200e-003	0.0123	4.0000e-005	3.7700e-003	3.0000e-005	3.7900e-003	1.0000e-003	2.0000e-005	1.0300e-003	0.0000	2.7901	2.7901	1.1000e-004	0.0000	2.7924
Total	**9.6000e-004**	**1.2200e-003**	**0.0123**	**4.0000e-005**	**3.7700e-003**	**3.0000e-005**	**3.7900e-003**	**1.0000e-003**	**2.0000e-005**	**1.0300e-003**	**0.0000**	**2.7901**	**2.7901**	**1.1000e-004**	**0.0000**	**2.7924**

3.12 Years 10-15: Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0813	0.0000	0.0813	0.0447	0.0000	0.0447	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0113	0.1059	0.1120	1.8000e-004		4.6300e-003	4.6300e-003		4.2600e-003	4.2600e-003	0.0000	15.4877	15.4877	5.0100e-003	0.0000	15.5929

Total	**0.0113**	**0.1059**	**0.1120**	**1.8000e-004**	**0.0813**	**4.6300e-003**	**0.0859**	**0.0447**	**4.2600e-003**	**0.0490**	**0.0000**	**15.4877**	**15.4877**	**5.0100e-003**	**0.0000**	**15.5929**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	1.7000e-004	1.7000e-003	1.0000e-005	0.0109	0.0000	0.0109	1.1900e-003	0.0000	1.2000e-003	0.0000	0.4463	0.4463	2.0000e-005	0.0000	0.4467
Total	**1.3000e-004**	**1.7000e-004**	**1.7000e-003**	**1.0000e-005**	**0.0109**	**0.0000**	**0.0109**	**1.1900e-003**	**0.0000**	**1.2000e-003**	**0.0000**	**0.4463**	**0.4463**	**2.0000e-005**	**0.0000**	**0.4467**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0274	0.0000	0.0274	0.0151	0.0000	0.0151	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.2800e-003	0.0876	0.1053	1.8000e-004		4.3200e-003	4.3200e-003		4.3200e-003	4.3200e-003	0.0000	15.4877	15.4877	5.0100e-003	0.0000	15.5929
Total	**4.2800e-003**	**0.0876**	**0.1053**	**1.8000e-004**	**0.0274**	**4.3200e-003**	**0.0318**	**0.0151**	**4.3200e-003**	**0.0194**	**0.0000**	**15.4877**	**15.4877**	**5.0100e-003**	**0.0000**	**15.5929**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	1.7000e-004	1.7000e-003	1.0000e-005	2.2600e-003	0.0000	2.2600e-003	3.3000e-004	0.0000	3.3000e-004	0.0000	0.4463	0.4463	2.0000e-005	0.0000	0.4467

Total	**1.3000e-004**	**1.7000e-004**	**1.7000e-003**	**1.0000e-005**	**2.2600e-003**	**0.0000**	**2.2600e-003**	**3.3000e-004**	**0.0000**	**3.3000e-004**	**0.0000**	**0.4463**	**0.4463**	**2.0000e-005**	**0.0000**	**0.4467**

3.13 Years 10-15: Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0928	0.0000	0.0928	0.0380	0.0000	0.0380	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0315	0.2862	0.3292	6.5000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	56.9845	56.9845	0.0184	0.0000	57.3716
Total	**0.0315**	**0.2862**	**0.3292**	**6.5000e-004**	**0.0928**	**0.0125**	**0.1053**	**0.0380**	**0.0115**	**0.0494**	**0.0000**	**56.9845**	**56.9845**	**0.0184**	**0.0000**	**57.3716**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	4.3000e-004	4.4000e-003	2.0000e-005	0.0283	1.0000e-005	0.0283	3.0900e-003	1.0000e-005	3.1000e-003	0.0000	1.1571	1.1571	4.0000e-005	0.0000	1.1580
Total	**3.5000e-004**	**4.3000e-004**	**4.4000e-003**	**2.0000e-005**	**0.0283**	**1.0000e-005**	**0.0283**	**3.0900e-003**	**1.0000e-005**	**3.1000e-003**	**0.0000**	**1.1571**	**1.1571**	**4.0000e-005**	**0.0000**	**1.1580**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0313	0.0000	0.0313	0.0128	0.0000	0.0128	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.4070	0.3984	6.5000e-004		0.0139	0.0139		0.0139	0.0139	0.0000	56.9845	56.9845	0.0184	0.0000	57.3715

Total	**0.0159**	**0.4070**	**0.3984**	**6.5000e-004**	**0.0313**	**0.0139**	**0.0452**	**0.0128**	**0.0139**	**0.0267**	**0.0000**	**56.9845**	**56.9845**	**0.0184**	**0.0000**	**57.3715**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	4.3000e-004	4.4000e-003	2.0000e-005	5.8600e-003	1.0000e-005	5.8700e-003	8.5000e-004	1.0000e-005	8.7000e-004	0.0000	1.1571	1.1571	4.0000e-005	0.0000	1.1580
Total	**3.5000e-004**	**4.3000e-004**	**4.4000e-003**	**2.0000e-005**	**5.8600e-003**	**1.0000e-005**	**5.8700e-003**	**8.5000e-004**	**1.0000e-005**	**8.7000e-004**	**0.0000**	**1.1571**	**1.1571**	**4.0000e-005**	**0.0000**	**1.1580**

3.14 Years 10-15: Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0667	0.6081	0.7865	1.3200e-003		0.0257	0.0257		0.0242	0.0242	0.0000	113.1701	113.1701	0.0266	0.0000	113.7278
Total	**0.0667**	**0.6081**	**0.7865**	**1.3200e-003**		**0.0257**	**0.0257**		**0.0242**	**0.0242**	**0.0000**	**113.1701**	**113.1701**	**0.0266**	**0.0000**	**113.7278**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0469	0.2559	0.6660	1.5600e-003	0.8919	5.5600e-003	0.8975	0.0969	5.1100e-003	0.1020	0.0000	132.5497	132.5497	9.4000e-004	0.0000	132.5694
Worker	0.0245	0.0305	0.3092	1.3600e-003	1.9839	8.1000e-004	1.9847	0.2171	7.5000e-004	0.2178	0.0000	81.2701	81.2701	2.9900e-003	0.0000	81.3329

Total	**0.0714**	**0.2864**	**0.9752**	**2.9200e-003**	**2.8759**	**6.3700e-003**	**2.8822**	**0.3140**	**5.8600e-003**	**0.3198**	**0.0000**	**213.8198**	**213.8198**	**3.9300e-003**	**0.0000**	**213.9022**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0329	0.6945	0.8730	1.3200e-003		0.0442	0.0442		0.0442	0.0442	0.0000	113.1699	113.1699	0.0266	0.0000	113.7277
Total	**0.0329**	**0.6945**	**0.8730**	**1.3200e-003**		**0.0442**	**0.0442**		**0.0442**	**0.0442**	**0.0000**	**113.1699**	**113.1699**	**0.0266**	**0.0000**	**113.7277**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0469	0.2559	0.6660	1.5600e-003	0.1768	5.5600e-003	0.1823	0.0255	5.1100e-003	0.0306	0.0000	132.5497	132.5497	9.4000e-004	0.0000	132.5694
Worker	0.0245	0.0305	0.3092	1.3600e-003	0.4113	8.1000e-004	0.4121	0.0600	7.5000e-004	0.0608	0.0000	81.2701	81.2701	2.9900e-003	0.0000	81.3329
Total	**0.0714**	**0.2864**	**0.9752**	**2.9200e-003**	**0.5881**	**6.3700e-003**	**0.5944**	**0.0855**	**5.8600e-003**	**0.0914**	**0.0000**	**213.8198**	**213.8198**	**3.9300e-003**	**0.0000**	**213.9022**

3.14 Years 10-15: Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0722	0.6577	0.8507	1.4200e-003		0.0278	0.0278		0.0262	0.0262	0.0000	122.4084	122.4084	0.0287	0.0000	123.0118
Total	**0.0722**	**0.6577**	**0.8507**	**1.4200e-003**		**0.0278**	**0.0278**		**0.0262**	**0.0262**	**0.0000**	**122.4084**	**122.4084**	**0.0287**	**0.0000**	**123.0118**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0495	0.2733	0.7109	1.6900e-003	0.9647	5.9900e-003	0.9707	0.1048	5.5200e-003	0.1103	0.0000	143.3809	143.3809	1.0100e-003	0.0000	143.4022
Worker	0.0255	0.0318	0.3232	1.4700e-003	2.1459	8.8000e-004	2.1468	0.2348	8.2000e-004	0.2356	0.0000	87.0529	87.0529	3.1600e-003	0.0000	87.1192
Total	**0.0750**	**0.3051**	**1.0341**	**3.1600e-003**	**3.1106**	**6.8700e-003**	**3.1175**	**0.3396**	**6.3400e-003**	**0.3459**	**0.0000**	**230.4338**	**230.4338**	**4.1700e-003**	**0.0000**	**230.5213**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0356	0.7512	0.9442	1.4200e-003		0.0478	0.0478		0.0478	0.0478	0.0000	122.4083	122.4083	0.0287	0.0000	123.0116
Total	**0.0356**	**0.7512**	**0.9442**	**1.4200e-003**		**0.0478**	**0.0478**		**0.0478**	**0.0478**	**0.0000**	**122.4083**	**122.4083**	**0.0287**	**0.0000**	**123.0116**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0495	0.2733	0.7109	1.6900e-003	0.1912	5.9900e-003	0.1972	0.0276	5.5200e-003	0.0331	0.0000	143.3809	143.3809	1.0100e-003	0.0000	143.4022
Worker	0.0255	0.0318	0.3232	1.4700e-003	0.4448	8.8000e-004	0.4457	0.0649	8.2000e-004	0.0658	0.0000	87.0529	87.0529	3.1600e-003	0.0000	87.1192

Total	**0.0750**	**0.3051**	**1.0341**	**3.1600e-003**	**0.6361**	**6.8700e-003**	**0.6429**	**0.0925**	**6.3400e-003**	**0.0988**	**0.0000**	**230.4338**	**230.4338**	**4.1700e-003**	**0.0000**	**230.5213**

3.15 Years 10-15: Paving - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.7300e-003	0.0632	0.1071	1.7000e-004		3.0800e-003	3.0800e-003		2.8400e-003	2.8400e-003	0.0000	14.6950	14.6950	4.7500e-003	0.0000	14.7948
Paving	0.2965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3032**	**0.0632**	**0.1071**	**1.7000e-004**		**3.0800e-003**	**3.0800e-003**		**2.8400e-003**	**2.8400e-003**	**0.0000**	**14.6950**	**14.6950**	**4.7500e-003**	**0.0000**	**14.7948**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	2.2000e-004	2.2800e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.6139	0.6139	2.0000e-005	0.0000	0.6144
Total	**1.8000e-004**	**2.2000e-004**	**2.2800e-003**	**1.0000e-005**	**8.8000e-004**	**1.0000e-005**	**8.9000e-004**	**2.4000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.6139**	**0.6139**	**2.0000e-005**	**0.0000**	**0.6144**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1200e-003	0.0830	0.1270	1.7000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	14.6950	14.6950	4.7500e-003	0.0000	14.7948
Paving	0.2965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.3006**	**0.0830**	**0.1270**	**1.7000e-004**		**4.4900e-003**	**4.4900e-003**		**4.4900e-003**	**4.4900e-003**	**0.0000**	**14.6950**	**14.6950**	**4.7500e-003**	**0.0000**	**14.7948**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	2.2000e-004	2.2800e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.6139	0.6139	2.0000e-005	0.0000	0.6144
Total	**1.8000e-004**	**2.2000e-004**	**2.2800e-003**	**1.0000e-005**	**8.8000e-004**	**1.0000e-005**	**8.9000e-004**	**2.4000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.6139**	**0.6139**	**2.0000e-005**	**0.0000**	**0.6144**

3.16 Years 10-15: Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.2704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3700e-003	9.1600e-003	0.0145	2.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	2.0426	2.0426	1.1000e-004	0.0000	2.0449
Total	**2.2718**	**9.1600e-003**	**0.0145**	**2.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**2.0426**	**2.0426**	**1.1000e-004**	**0.0000**	**2.0449**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7000e-004	9.6000e-004	9.7300e-003	4.0000e-005	3.7700e-003	3.0000e-005	3.8000e-003	1.0000e-003	2.0000e-005	1.0300e-003	0.0000	2.6193	2.6193	9.0000e-005	0.0000	2.6213

Total	**7.7000e-004**	**9.6000e-004**	**9.7300e-003**	**4.0000e-005**	**3.7700e-003**	**3.0000e-005**	**3.8000e-003**	**1.0000e-003**	**2.0000e-005**	**1.0300e-003**	**0.0000**	**2.6193**	**2.6193**	**9.0000e-005**	**0.0000**	**2.6213**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.2704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8000e-004	0.0109	0.0147	2.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	2.0426	2.0426	1.1000e-004	0.0000	2.0449
Total	**2.2709**	**0.0109**	**0.0147**	**2.0000e-005**		**7.6000e-004**	**7.6000e-004**		**7.6000e-004**	**7.6000e-004**	**0.0000**	**2.0426**	**2.0426**	**1.1000e-004**	**0.0000**	**2.0449**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7000e-004	9.6000e-004	9.7300e-003	4.0000e-005	3.7700e-003	3.0000e-005	3.8000e-003	1.0000e-003	2.0000e-005	1.0300e-003	0.0000	2.6193	2.6193	9.0000e-005	0.0000	2.6213
Total	**7.7000e-004**	**9.6000e-004**	**9.7300e-003**	**4.0000e-005**	**3.7700e-003**	**3.0000e-005**	**3.8000e-003**	**1.0000e-003**	**2.0000e-005**	**1.0300e-003**	**0.0000**	**2.6193**	**2.6193**	**9.0000e-005**	**0.0000**	**2.6213**

3.17 Years 15-20: Site Preparation - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0813	0.0000	0.0813	0.0447	0.0000	0.0447	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0109	0.0588	0.0762	1.9000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	18.3949	18.3949	8.9000e-004	0.0000	18.4135

Total	**0.0109**	**0.0588**	**0.0762**	**1.9000e-004**	**0.0813**	**1.9000e-003**	**0.0832**	**0.0447**	**1.9000e-003**	**0.0466**	**0.0000**	**18.3949**	**18.3949**	**8.9000e-004**	**0.0000**	**18.4135**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.4000e-004	1.4700e-003	1.0000e-005	0.0109	0.0000	0.0109	1.1900e-003	0.0000	1.2000e-003	0.0000	0.4300	0.4300	1.0000e-005	0.0000	0.4303
Total	**1.1000e-004**	**1.4000e-004**	**1.4700e-003**	**1.0000e-005**	**0.0109**	**0.0000**	**0.0109**	**1.1900e-003**	**0.0000**	**1.2000e-003**	**0.0000**	**0.4300**	**0.4300**	**1.0000e-005**	**0.0000**	**0.4303**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0274	0.0000	0.0274	0.0151	0.0000	0.0151	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.2800e-003	0.0876	0.1053	1.9000e-004		4.3200e-003	4.3200e-003		4.3200e-003	4.3200e-003	0.0000	18.3949	18.3949	8.9000e-004	0.0000	18.4135
Total	**4.2800e-003**	**0.0876**	**0.1053**	**1.9000e-004**	**0.0274**	**4.3200e-003**	**0.0318**	**0.0151**	**4.3200e-003**	**0.0194**	**0.0000**	**18.3949**	**18.3949**	**8.9000e-004**	**0.0000**	**18.4135**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	1.4000e-004	1.4700e-003	1.0000e-005	2.2600e-003	0.0000	2.2600e-003	3.3000e-004	0.0000	3.3000e-004	0.0000	0.4300	0.4300	1.0000e-005	0.0000	0.4303

Total	**1.1000e-004**	**1.4000e-004**	**1.4700e-003**	**1.0000e-005**	**2.2600e-003**	**0.0000**	**2.2600e-003**	**3.3000e-004**	**0.0000**	**3.3000e-004**	**0.0000**	**0.4300**	**0.4300**	**1.0000e-005**	**0.0000**	**0.4303**

3.18 Years 15-20: Grading - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0898	0.0000	0.0898	0.0363	0.0000	0.0363	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0327	0.1367	0.2593	6.8000e-004		4.9500e-003	4.9500e-003		4.9500e-003	4.9500e-003	0.0000	64.9952	64.9952	2.6400e-003	0.0000	65.0506
Total	**0.0327**	**0.1367**	**0.2593**	**6.8000e-004**	**0.0898**	**4.9500e-003**	**0.0948**	**0.0363**	**4.9500e-003**	**0.0413**	**0.0000**	**64.9952**	**64.9952**	**2.6400e-003**	**0.0000**	**65.0506**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	3.5000e-004	3.6300e-003	2.0000e-005	0.0269	1.0000e-005	0.0269	2.9400e-003	1.0000e-005	2.9500e-003	0.0000	1.0618	1.0618	4.0000e-005	0.0000	1.0626
Total	**2.8000e-004**	**3.5000e-004**	**3.6300e-003**	**2.0000e-005**	**0.0269**	**1.0000e-005**	**0.0269**	**2.9400e-003**	**1.0000e-005**	**2.9500e-003**	**0.0000**	**1.0618**	**1.0618**	**4.0000e-005**	**0.0000**	**1.0626**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0303	0.0000	0.0303	0.0123	0.0000	0.0123	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0151	0.3877	0.3794	6.8000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	64.9952	64.9952	2.6400e-003	0.0000	65.0506

Total	**0.0151**	**0.3877**	**0.3794**	**6.8000e-004**	**0.0303**	**0.0132**	**0.0435**	**0.0123**	**0.0132**	**0.0255**	**0.0000**	**64.9952**	**64.9952**	**2.6400e-003**	**0.0000**	**65.0506**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	3.5000e-004	3.6300e-003	2.0000e-005	5.5800e-003	1.0000e-005	5.5900e-003	8.1000e-004	1.0000e-005	8.2000e-004	0.0000	1.0618	1.0618	4.0000e-005	0.0000	1.0626
Total	**2.8000e-004**	**3.5000e-004**	**3.6300e-003**	**2.0000e-005**	**5.5800e-003**	**1.0000e-005**	**5.5900e-003**	**8.1000e-004**	**1.0000e-005**	**8.2000e-004**	**0.0000**	**1.0618**	**1.0618**	**4.0000e-005**	**0.0000**	**1.0626**

3.19 Years 15-20: Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0633	0.3840	0.7824	1.4900e-003		7.1600e-003	7.1600e-003		7.1600e-003	7.1600e-003	0.0000	126.9281	126.9281	5.0900e-003	0.0000	127.0351
Total	**0.0633**	**0.3840**	**0.7824**	**1.4900e-003**		**7.1600e-003**	**7.1600e-003**		**7.1600e-003**	**7.1600e-003**	**0.0000**	**126.9281**	**126.9281**	**5.0900e-003**	**0.0000**	**127.0351**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0433	0.2416	0.6242	1.5400e-003	0.8828	5.4900e-003	0.8883	0.0959	5.0500e-003	0.1010	0.0000	131.2458	131.2458	9.3000e-004	0.0000	131.2653
Worker	0.0203	0.0257	0.2646	1.3500e-003	1.9637	8.4000e-004	1.9645	0.2149	7.8000e-004	0.2156	0.0000	77.5019	77.5019	2.6700e-003	0.0000	77.5580

Total	**0.0636**	**0.2673**	**0.8888**	**2.8900e-003**	**2.8465**	**6.3300e-003**	**2.8528**	**0.3108**	**5.8300e-003**	**0.3166**	**0.0000**	**208.7477**	**208.7477**	**3.6000e-003**	**0.0000**	**208.8233**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0326	0.6875	0.8641	1.4900e-003		0.0437	0.0437		0.0437	0.0437	0.0000	126.9279	126.9279	5.0900e-003	0.0000	127.0349
Total	**0.0326**	**0.6875**	**0.8641**	**1.4900e-003**		**0.0437**	**0.0437**		**0.0437**	**0.0437**	**0.0000**	**126.9279**	**126.9279**	**5.0900e-003**	**0.0000**	**127.0349**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0433	0.2416	0.6242	1.5400e-003	0.1750	5.4900e-003	0.1805	0.0252	5.0500e-003	0.0303	0.0000	131.2458	131.2458	9.3000e-004	0.0000	131.2653
Worker	0.0203	0.0257	0.2646	1.3500e-003	0.4071	8.4000e-004	0.4079	0.0594	7.8000e-004	0.0602	0.0000	77.5019	77.5019	2.6700e-003	0.0000	77.5580
Total	**0.0636**	**0.2673**	**0.8888**	**2.8900e-003**	**0.5821**	**6.3300e-003**	**0.5884**	**0.0847**	**5.8300e-003**	**0.0905**	**0.0000**	**208.7477**	**208.7477**	**3.6000e-003**	**0.0000**	**208.8233**

3.19 Years 15-20: Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0704	0.4276	0.8711	1.6600e-003		7.9700e-003	7.9700e-003		7.9700e-003	7.9700e-003	0.0000	141.3220	141.3220	5.6700e-003	0.0000	141.4411
Total	**0.0704**	**0.4276**	**0.8711**	**1.6600e-003**		**7.9700e-003**	**7.9700e-003**		**7.9700e-003**	**7.9700e-003**	**0.0000**	**141.3220**	**141.3220**	**5.6700e-003**	**0.0000**	**141.4411**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0477	0.2675	0.6914	1.7200e-003	0.9830	6.1200e-003	0.9891	0.1068	5.6300e-003	0.1124	0.0000	146.1510	146.1510	1.0400e-003	0.0000	146.1727
Worker	0.0217	0.0278	0.2881	1.5000e-003	2.1864	9.4000e-004	2.1873	0.2392	8.7000e-004	0.2401	0.0000	85.9070	85.9070	2.9200e-003	0.0000	85.9684
Total	**0.0693**	**0.2953**	**0.9795**	**3.2200e-003**	**3.1693**	**7.0600e-003**	**3.1764**	**0.3460**	**6.5000e-003**	**0.3525**	**0.0000**	**232.0579**	**232.0579**	**3.9600e-003**	**0.0000**	**232.1411**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0363	0.7654	0.9620	1.6600e-003		0.0487	0.0487		0.0487	0.0487	0.0000	141.3218	141.3218	5.6700e-003	0.0000	141.4409
Total	**0.0363**	**0.7654**	**0.9620**	**1.6600e-003**		**0.0487**	**0.0487**		**0.0487**	**0.0487**	**0.0000**	**141.3218**	**141.3218**	**5.6700e-003**	**0.0000**	**141.4409**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0477	0.2675	0.6914	1.7200e-003	0.1949	6.1200e-003	0.2010	0.0281	5.6300e-003	0.0337	0.0000	146.1510	146.1510	1.0400e-003	0.0000	146.1727
Worker	0.0217	0.0278	0.2881	1.5000e-003	0.4532	9.4000e-004	0.4542	0.0662	8.7000e-004	0.0670	0.0000	85.9070	85.9070	2.9200e-003	0.0000	85.9684

Total	**0.0693**	**0.2953**	**0.9795**	**3.2200e-003**	**0.6481**	**7.0600e-003**	**0.6551**	**0.0943**	**6.5000e-003**	**0.1008**	**0.0000**	**232.0579**	**232.0579**	**3.9600e-003**	**0.0000**	**232.1411**

3.20 Years 15-20: Paving - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0102	0.0524	0.1164	2.1000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	17.6900	17.6900	8.3000e-004	0.0000	17.7074
Paving	0.2965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3066**	**0.0524**	**0.1164**	**2.1000e-004**		**2.4300e-003**	**2.4300e-003**		**2.4300e-003**	**2.4300e-003**	**0.0000**	**17.6900**	**17.6900**	**8.3000e-004**	**0.0000**	**17.7074**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.9000e-004	1.9900e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.5946	0.5946	2.0000e-005	0.0000	0.5950
Total	**1.5000e-004**	**1.9000e-004**	**1.9900e-003**	**1.0000e-005**	**8.8000e-004**	**1.0000e-005**	**8.9000e-004**	**2.4000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.5946**	**0.5946**	**2.0000e-005**	**0.0000**	**0.5950**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1200e-003	0.0830	0.1270	2.1000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	17.6900	17.6900	8.3000e-004	0.0000	17.7074
Paving	0.2965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.3006**	**0.0830**	**0.1270**	**2.1000e-004**		**4.4900e-003**	**4.4900e-003**		**4.4900e-003**	**4.4900e-003**	**0.0000**	**17.6900**	**17.6900**	**8.3000e-004**	**0.0000**	**17.7074**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.9000e-004	1.9900e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.5946	0.5946	2.0000e-005	0.0000	0.5950
Total	**1.5000e-004**	**1.9000e-004**	**1.9900e-003**	**1.0000e-005**	**8.8000e-004**	**1.0000e-005**	**8.9000e-004**	**2.4000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.5946**	**0.5946**	**2.0000e-005**	**0.0000**	**0.5950**

3.21 Years 15-20: Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.2704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.8000e-004	6.4200e-003	0.0135	2.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	1.9149	1.9149	8.0000e-005	0.0000	1.9166
Total	**2.2714**	**6.4200e-003**	**0.0135**	**2.0000e-005**		**1.5000e-004**	**1.5000e-004**		**1.5000e-004**	**1.5000e-004**	**0.0000**	**1.9149**	**1.9149**	**8.0000e-005**	**0.0000**	**1.9166**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	7.7000e-004	7.9800e-003	4.0000e-005	3.5300e-003	3.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	2.3784	2.3784	8.0000e-005	0.0000	2.3801

Total	**6.0000e-004**	**7.7000e-004**	**7.9800e-003**	**4.0000e-005**	**3.5300e-003**	**3.0000e-005**	**3.5600e-003**	**9.4000e-004**	**2.0000e-005**	**9.6000e-004**	**0.0000**	**2.3784**	**2.3784**	**8.0000e-005**	**0.0000**	**2.3801**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.2704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5000e-004	0.0102	0.0137	2.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	1.9149	1.9149	8.0000e-005	0.0000	1.9166
Total	**2.2708**	**0.0102**	**0.0137**	**2.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**1.9149**	**1.9149**	**8.0000e-005**	**0.0000**	**1.9166**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	7.7000e-004	7.9800e-003	4.0000e-005	3.5300e-003	3.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	2.3784	2.3784	8.0000e-005	0.0000	2.3801
Total	**6.0000e-004**	**7.7000e-004**	**7.9800e-003**	**4.0000e-005**	**3.5300e-003**	**3.0000e-005**	**3.5600e-003**	**9.4000e-004**	**2.0000e-005**	**9.6000e-004**	**0.0000**	**2.3784**	**2.3784**	**8.0000e-005**	**0.0000**	**2.3801**

3.22 Years 20-25: Site Preparation - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0723	0.0000	0.0723	0.0397	0.0000	0.0397	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.6400e-003	0.0393	0.0651	1.7000e-004		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003	0.0000	16.3510	16.3510	7.0000e-004	0.0000	16.3658

Total	**8.6400e-003**	**0.0393**	**0.0651**	**1.7000e-004**	**0.0723**	**1.1300e-003**	**0.0734**	**0.0397**	**1.1300e-003**	**0.0409**	**0.0000**	**16.3510**	**16.3510**	**7.0000e-004**	**0.0000**	**16.3658**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	1.1000e-004	1.2000e-003	1.0000e-005	9.6800e-003	0.0000	9.6900e-003	1.0600e-003	0.0000	1.0600e-003	0.0000	0.3762	0.3762	1.0000e-005	0.0000	0.3765
Total	**9.0000e-005**	**1.1000e-004**	**1.2000e-003**	**1.0000e-005**	**9.6800e-003**	**0.0000**	**9.6900e-003**	**1.0600e-003**	**0.0000**	**1.0600e-003**	**0.0000**	**0.3762**	**0.3762**	**1.0000e-005**	**0.0000**	**0.3765**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0244	0.0000	0.0244	0.0134	0.0000	0.0134	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8100e-003	0.0778	0.0936	1.7000e-004		3.8400e-003	3.8400e-003		3.8400e-003	3.8400e-003	0.0000	16.3510	16.3510	7.0000e-004	0.0000	16.3657
Total	**3.8100e-003**	**0.0778**	**0.0936**	**1.7000e-004**	**0.0244**	**3.8400e-003**	**0.0282**	**0.0134**	**3.8400e-003**	**0.0173**	**0.0000**	**16.3510**	**16.3510**	**7.0000e-004**	**0.0000**	**16.3657**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	1.1000e-004	1.2000e-003	1.0000e-005	2.0100e-003	0.0000	2.0100e-003	2.9000e-004	0.0000	3.0000e-004	0.0000	0.3762	0.3762	1.0000e-005	0.0000	0.3765

Total	**9.0000e-005**	**1.1000e-004**	**1.2000e-003**	**1.0000e-005**	**2.0100e-003**	**0.0000**	**2.0100e-003**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**0.0000**	**0.3762**	**0.3762**	**1.0000e-005**	**0.0000**	**0.3765**

3.23 Years 20-25: Grading - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0928	0.0000	0.0928	0.0380	0.0000	0.0380	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0304	0.0994	0.2661	7.1000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003	0.0000	68.2451	68.2451	2.4400e-003	0.0000	68.2963
Total	**0.0304**	**0.0994**	**0.2661**	**7.1000e-004**	**0.0928**	**3.3200e-003**	**0.0961**	**0.0380**	**3.3200e-003**	**0.0413**	**0.0000**	**68.2451**	**68.2451**	**2.4400e-003**	**0.0000**	**68.2963**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	3.3000e-004	3.4900e-003	2.0000e-005	0.0283	1.0000e-005	0.0283	3.0900e-003	1.0000e-005	3.1000e-003	0.0000	1.0973	1.0973	4.0000e-005	0.0000	1.0981
Total	**2.5000e-004**	**3.3000e-004**	**3.4900e-003**	**2.0000e-005**	**0.0283**	**1.0000e-005**	**0.0283**	**3.0900e-003**	**1.0000e-005**	**3.1000e-003**	**0.0000**	**1.0973**	**1.0973**	**4.0000e-005**	**0.0000**	**1.0981**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0313	0.0000	0.0313	0.0128	0.0000	0.0128	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.4070	0.3984	7.1000e-004		0.0139	0.0139		0.0139	0.0139	0.0000	68.2450	68.2450	2.4400e-003	0.0000	68.2962

Total	**0.0159**	**0.4070**	**0.3984**	**7.1000e-004**	**0.0313**	**0.0139**	**0.0452**	**0.0128**	**0.0139**	**0.0267**	**0.0000**	**68.2450**	**68.2450**	**2.4400e-003**	**0.0000**	**68.2962**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	3.3000e-004	3.4900e-003	2.0000e-005	5.8600e-003	1.0000e-005	5.8700e-003	8.5000e-004	1.0000e-005	8.7000e-004	0.0000	1.0973	1.0973	4.0000e-005	0.0000	1.0981
Total	**2.5000e-004**	**3.3000e-004**	**3.4900e-003**	**2.0000e-005**	**5.8600e-003**	**1.0000e-005**	**5.8700e-003**	**8.5000e-004**	**1.0000e-005**	**8.7000e-004**	**0.0000**	**1.0973**	**1.0973**	**4.0000e-005**	**0.0000**	**1.0981**

3.24 Years 20-25: Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0570	0.3361	0.7563	1.4500e-003		4.2300e-003	4.2300e-003		4.2300e-003	4.2300e-003	0.0000	123.0025	123.0025	4.5800e-003	0.0000	123.0987
Total	**0.0570**	**0.3361**	**0.7563**	**1.4500e-003**		**4.2300e-003**	**4.2300e-003**		**4.2300e-003**	**4.2300e-003**	**0.0000**	**123.0025**	**123.0025**	**4.5800e-003**	**0.0000**	**123.0987**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0390	0.2274	0.5858	1.5000e-003	0.8556	5.3200e-003	0.8609	0.0929	4.9000e-003	0.0978	0.0000	127.2525	127.2525	9.0000e-004	0.0000	127.2715
Worker	0.0168	0.0224	0.2352	1.3100e-003	1.9029	8.2000e-004	1.9038	0.2082	7.6000e-004	0.2090	0.0000	73.9219	73.9219	2.4200e-003	0.0000	73.9727

Total	**0.0558**	**0.2498**	**0.8210**	**2.8100e-003**	**2.7585**	**6.1400e-003**	**2.7646**	**0.3012**	**5.6600e-003**	**0.3068**	**0.0000**	**201.1744**	**201.1744**	**3.3200e-003**	**0.0000**	**201.2442**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0316	0.6662	0.8373	1.4500e-003		0.0424	0.0424		0.0424	0.0424	0.0000	123.0023	123.0023	4.5800e-003	0.0000	123.0986
Total	**0.0316**	**0.6662**	**0.8373**	**1.4500e-003**		**0.0424**	**0.0424**		**0.0424**	**0.0424**	**0.0000**	**123.0023**	**123.0023**	**4.5800e-003**	**0.0000**	**123.0986**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0390	0.2274	0.5858	1.5000e-003	0.1696	5.3200e-003	0.1749	0.0245	4.9000e-003	0.0294	0.0000	127.2525	127.2525	9.0000e-004	0.0000	127.2715
Worker	0.0168	0.0224	0.2352	1.3100e-003	0.3945	8.2000e-004	0.3953	0.0576	7.6000e-004	0.0584	0.0000	73.9219	73.9219	2.4200e-003	0.0000	73.9727
Total	**0.0558**	**0.2498**	**0.8210**	**2.8100e-003**	**0.5641**	**6.1400e-003**	**0.5702**	**0.0820**	**5.6600e-003**	**0.0877**	**0.0000**	**201.1744**	**201.1744**	**3.3200e-003**	**0.0000**	**201.2442**

3.24 Years 20-25: Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0667	0.3933	0.8851	1.7000e-003		4.9500e-003	4.9500e-003		4.9500e-003	4.9500e-003	0.0000	143.9391	143.9391	5.3600e-003	0.0000	144.0517
Total	**0.0667**	**0.3933**	**0.8851**	**1.7000e-003**		**4.9500e-003**	**4.9500e-003**		**4.9500e-003**	**4.9500e-003**	**0.0000**	**143.9391**	**143.9391**	**5.3600e-003**	**0.0000**	**144.0517**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.9875	0.0000	0.9875	0.1034	0.0000	0.1034	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					2.2091	0.0000	2.2091	0.2366	0.0000	0.2366	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**3.1966**	**0.0000**	**3.1966**	**0.3400**	**0.0000**	**0.3400**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0369	0.7796	0.9799	1.7000e-003		0.0496	0.0496		0.0496	0.0496	0.0000	143.9389	143.9389	5.3600e-003	0.0000	144.0515
Total	**0.0369**	**0.7796**	**0.9799**	**1.7000e-003**		**0.0496**	**0.0496**		**0.0496**	**0.0496**	**0.0000**	**143.9389**	**143.9389**	**5.3600e-003**	**0.0000**	**144.0515**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.1848	0.0000	0.1848	0.0233	0.0000	0.0233	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.4438	0.0000	0.4438	0.0603	0.0000	0.0603	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total					**0.6286**	**0.0000**	**0.6286**	**0.0836**	**0.0000**	**0.0836**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.25 Years 20-25: Paving - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.3700e-003	0.0359	0.1162	2.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	17.6900	17.6900	6.8000e-004	0.0000	17.7043
Paving	0.2965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3048**	**0.0359**	**0.1162**	**2.1000e-004**		**1.3700e-003**	**1.3700e-003**		**1.3700e-003**	**1.3700e-003**	**0.0000**	**17.6900**	**17.6900**	**6.8000e-004**	**0.0000**	**17.7043**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					7.6000e-004	0.0000	7.6000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**7.6000e-004**	**0.0000**	**7.6000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1200e-003	0.0830	0.1270	2.1000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	17.6900	17.6900	6.8000e-004	0.0000	17.7043
Paving	0.2965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.3006**	**0.0830**	**0.1270**	**2.1000e-004**		**4.4900e-003**	**4.4900e-003**		**4.4900e-003**	**4.4900e-003**	**0.0000**	**17.6900**	**17.6900**	**6.8000e-004**	**0.0000**	**17.7043**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					7.6000e-004	0.0000	7.6000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**7.6000e-004**	**0.0000**	**7.6000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.26 Years 20-35: Architectural Coating - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.2704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.4000e-004	6.0600e-003	0.0144	2.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	2.0426	2.0426	8.0000e-005	0.0000	2.0442
Total	**2.2713**	**6.0600e-003**	**0.0144**	**2.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**	**0.0000**	**2.0426**	**2.0426**	**8.0000e-005**	**0.0000**	**2.0442**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					3.2500e-003	0.0000	3.2500e-003	8.0000e-004	0.0000	8.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total					**3.2500e-003**	**0.0000**	**3.2500e-003**	**8.0000e-004**	**0.0000**	**8.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.2704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8000e-004	0.0109	0.0147	2.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	2.0426	2.0426	8.0000e-005	0.0000	2.0442
Total	**2.2709**	**0.0109**	**0.0147**	**2.0000e-005**		**7.6000e-004**	**7.6000e-004**		**7.6000e-004**	**7.6000e-004**	**0.0000**	**2.0426**	**2.0426**	**8.0000e-005**	**0.0000**	**2.0442**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					3.2500e-003	0.0000	3.2500e-003	8.0000e-004	0.0000	8.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**3.2500e-003**	**0.0000**	**3.2500e-003**	**8.0000e-004**	**0.0000**	**8.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.27 Years 25-30: Site Preparation - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0723	0.0000	0.0723	0.0397	0.0000	0.0397	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.9500e-003	0.0314	0.0634	1.7000e-004		7.9000e-004	7.9000e-004		7.9000e-004	7.9000e-004	0.0000	16.3510	16.3510	6.3000e-004	0.0000	16.3643

Total	**7.9500e-003**	**0.0314**	**0.0634**	**1.7000e-004**	**0.0723**	**7.9000e-004**	**0.0731**	**0.0397**	**7.9000e-004**	**0.0405**	**0.0000**	**16.3510**	**16.3510**	**6.3000e-004**	**0.0000**	**16.3643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					9.6100e-003	0.0000	9.6100e-003	1.0300e-003	0.0000	1.0300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**9.6100e-003**	**0.0000**	**9.6100e-003**	**1.0300e-003**	**0.0000**	**1.0300e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0244	0.0000	0.0244	0.0134	0.0000	0.0134	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8100e-003	0.0778	0.0936	1.7000e-004		3.8400e-003	3.8400e-003		3.8400e-003	3.8400e-003	0.0000	16.3510	16.3510	6.3000e-004	0.0000	16.3643
Total	**3.8100e-003**	**0.0778**	**0.0936**	**1.7000e-004**	**0.0244**	**3.8400e-003**	**0.0282**	**0.0134**	**3.8400e-003**	**0.0173**	**0.0000**	**16.3510**	**16.3510**	**6.3000e-004**	**0.0000**	**16.3643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					1.9300e-003	0.0000	1.9300e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total					**1.9300e-003**	**0.0000**	**1.9300e-003**	**2.6000e-004**	**0.0000**	**2.6000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.28 Years 25-30: Grading - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0928	0.0000	0.0928	0.0380	0.0000	0.0380	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0284	0.0767	0.2631	7.1000e-004		2.3700e-003	2.3700e-003		2.3700e-003	2.3700e-003	0.0000	68.2450	68.2450	2.2500e-003	0.0000	68.2921
Total	**0.0284**	**0.0767**	**0.2631**	**7.1000e-004**	**0.0928**	**2.3700e-003**	**0.0952**	**0.0380**	**2.3700e-003**	**0.0403**	**0.0000**	**68.2450**	**68.2450**	**2.2500e-003**	**0.0000**	**68.2921**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.0280	0.0000	0.0280	3.0000e-003	0.0000	3.0000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.0280**	**0.0000**	**0.0280**	**3.0000e-003**	**0.0000**	**3.0000e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0313	0.0000	0.0313	0.0128	0.0000	0.0128	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.4070	0.3984	7.1000e-004		0.0139	0.0139		0.0139	0.0139	0.0000	68.2449	68.2449	2.2500e-003	0.0000	68.2921

Total	**0.0159**	**0.4070**	**0.3984**	**7.1000e-004**	**0.0313**	**0.0139**	**0.0452**	**0.0128**	**0.0139**	**0.0267**	**0.0000**	**68.2449**	**68.2449**	**2.2500e-003**	**0.0000**	**68.2921**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					5.6300e-003	0.0000	5.6300e-003	7.7000e-004	0.0000	7.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**5.6300e-003**	**0.0000**	**5.6300e-003**	**7.7000e-004**	**0.0000**	**7.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.29 Years 25-30: Building Construction - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0549	0.3166	0.7403	1.4200e-003		3.3800e-003	3.3800e-003		3.3800e-003	3.3800e-003	0.0000	120.3854	120.3854	4.3300e-003	0.0000	120.4763
Total	**0.0549**	**0.3166**	**0.7403**	**1.4200e-003**		**3.3800e-003**	**3.3800e-003**		**3.3800e-003**	**3.3800e-003**	**0.0000**	**120.3854**	**120.3854**	**4.3300e-003**	**0.0000**	**120.4763**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.8259	0.0000	0.8259	0.0865	0.0000	0.0865	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					1.8476	0.0000	1.8476	0.1979	0.0000	0.1979	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total					**2.6735**	**0.0000**	**2.6735**	**0.2844**	**0.0000**	**0.2844**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0309	0.6520	0.8195	1.4200e-003		0.0415	0.0415		0.0415	0.0415	0.0000	120.3853	120.3853	4.3300e-003	0.0000	120.4762
Total	**0.0309**	**0.6520**	**0.8195**	**1.4200e-003**		**0.0415**	**0.0415**		**0.0415**	**0.0415**	**0.0000**	**120.3853**	**120.3853**	**4.3300e-003**	**0.0000**	**120.4762**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.1546	0.0000	0.1546	0.0195	0.0000	0.0195	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.3712	0.0000	0.3712	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.5258**	**0.0000**	**0.5258**	**0.0699**	**0.0000**	**0.0699**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.29 Years 25-30: Building Construction - 2041

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0668	0.3854	0.9012	1.7300e-003		4.1100e-003	4.1100e-003		4.1100e-003	4.1100e-003	0.0000	146.5562	146.5562	5.2700e-003	0.0000	146.6668
Total	**0.0668**	**0.3854**	**0.9012**	**1.7300e-003**		**4.1100e-003**	**4.1100e-003**		**4.1100e-003**	**4.1100e-003**	**0.0000**	**146.5562**	**146.5562**	**5.2700e-003**	**0.0000**	**146.6668**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					1.0055	0.0000	1.0055	0.1053	0.0000	0.1053	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					2.2492	0.0000	2.2492	0.2409	0.0000	0.2409	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**3.2547**	**0.0000**	**3.2547**	**0.3462**	**0.0000**	**0.3462**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0376	0.7938	0.9977	1.7300e-003		0.0505	0.0505		0.0505	0.0505	0.0000	146.5560	146.5560	5.2700e-003	0.0000	146.6667
Total	**0.0376**	**0.7938**	**0.9977**	**1.7300e-003**		**0.0505**	**0.0505**		**0.0505**	**0.0505**	**0.0000**	**146.5560**	**146.5560**	**5.2700e-003**	**0.0000**	**146.6667**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.1882	0.0000	0.1882	0.0237	0.0000	0.0237	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.4519	0.0000	0.4519	0.0614	0.0000	0.0614	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total					**0.6401**	**0.0000**	**0.6401**	**0.0851**	**0.0000**	**0.0851**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.30 Years 25-30: Paving - 2041

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.4300e-003	0.0270	0.1162	2.1000e-004		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	17.6900	17.6900	5.9000e-004	0.0000	17.7025
Paving	0.2965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3039**	**0.0270**	**0.1162**	**2.1000e-004**		**8.5000e-004**	**8.5000e-004**		**8.5000e-004**	**8.5000e-004**	**0.0000**	**17.6900**	**17.6900**	**5.9000e-004**	**0.0000**	**17.7025**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					7.6000e-004	0.0000	7.6000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**7.6000e-004**	**0.0000**	**7.6000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1200e-003	0.0830	0.1270	2.1000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	17.6900	17.6900	5.9000e-004	0.0000	17.7025
Paving	0.2965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.3006**	**0.0830**	**0.1270**	**2.1000e-004**		**4.4900e-003**	**4.4900e-003**		**4.4900e-003**	**4.4900e-003**	**0.0000**	**17.6900**	**17.6900**	**5.9000e-004**	**0.0000**	**17.7025**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					7.6000e-004	0.0000	7.6000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**7.6000e-004**	**0.0000**	**7.6000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.31 Years 25-30: Architectural Coating - 2041

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.2704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.2000e-004	5.8200e-003	0.0143	2.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	2.0426	2.0426	7.0000e-005	0.0000	2.0441
Total	**2.2713**	**5.8200e-003**	**0.0143**	**2.0000e-005**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**2.0426**	**2.0426**	**7.0000e-005**	**0.0000**	**2.0441**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					3.2500e-003	0.0000	3.2500e-003	8.0000e-004	0.0000	8.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total					**3.2500e-003**	**0.0000**	**3.2500e-003**	**8.0000e-004**	**0.0000**	**8.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.2704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8000e-004	0.0109	0.0147	2.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	2.0426	2.0426	7.0000e-005	0.0000	2.0441
Total	**2.2709**	**0.0109**	**0.0147**	**2.0000e-005**		**7.6000e-004**	**7.6000e-004**		**7.6000e-004**	**7.6000e-004**	**0.0000**	**2.0426**	**2.0426**	**7.0000e-005**	**0.0000**	**2.0441**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					3.2500e-003	0.0000	3.2500e-003	8.0000e-004	0.0000	8.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**3.2500e-003**	**0.0000**	**3.2500e-003**	**8.0000e-004**	**0.0000**	**8.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Implement Trip Reduction Program

Encourage Telecommuting and Alternative Work Schedules

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	9.6088	18.7046	96.4625	0.3218	20.7830	0.4351	21.2181	5.5733	0.4015	5.9748	0.0000	21,207.3067	21,207.3067	0.5017	0.0000	21,217.8431
Unmitigated	9.6610	18.9677	97.4565	0.3278	21.1931	0.4425	21.6356	5.6833	0.4083	6.0916	0.0000	21,607.7849	21,607.7849	0.5105	0.0000	21,618.5061

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
General Light Industry	27,913.89	5,295.39	2714.22	47,391,452	46,462,495
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	7,474.72	8,699.84	4394.56	9,936,352	9,756,076
Total	35,388.61	13,995.23	7,108.78	57,327,804	56,218,571

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	7.22	5.55	5.55	33.00	48.00	19.00	66	28	6
General Light Industry	7.22	5.85	5.55	59.00	28.00	13.00	92	5	3

Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0			
Regional Shopping Center	7.22	5.85	5.55	16.30	64.70	19.00	54	35	11			

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.439610	0.064325	0.188519	0.165588	0.061617	0.008591	0.013985	0.042670	0.001725	0.001053	0.008236	0.000439	0.003642

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	10,028.5145	10,028.5145	0.0000	0.0000	10,028.5145
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	10,172.0815	10,172.0815	0.0000	0.0000	10,172.0815
NaturalGas Mitigated	0.2014	1.8312	1.5382	0.0110		0.1392	0.1392		0.1392	0.1392	0.0000	1,993.4485	1,993.4485	0.0382	0.0366	2,005.5803
NaturalGas Unmitigated	0.2237	2.0333	1.7080	0.0122		0.1545	0.1545		0.1545	0.1545	0.0000	2,213.4667	2,213.4667	0.0424	0.0406	2,226.9375

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.30888e+006	0.0125	0.1132	0.0951	6.8000e-004		8.6000e-003	8.6000e-003		8.6000e-003	8.6000e-003	0.0000	123.2106	123.2106	2.3600e-003	2.2600e-003	123.9605
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	3.91699e+007	0.2112	1.9201	1.6129	0.0115		0.1459	0.1459		0.1459	0.1459	0.0000	2,090.2561	2,090.2561	0.0401	0.0383	2,102.9771
Total		**0.2237**	**2.0333**	**1.7080**	**0.0122**		**0.1545**	**0.1545**		**0.1545**	**0.1545**	**0.0000**	**2,213.4667**	**2,213.4667**	**0.0424**	**0.0406**	**2,226.9375**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.08692e+006	0.0113	0.1023	0.0859	6.1000e-004		7.7700e-003	7.7700e-003		7.7700e-003	7.7700e-003	0.0000	111.3660	111.3660	2.1300e-003	2.0400e-003	112.0438
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	3.52689e+007	0.1902	1.7289	1.4523	0.0104		0.1314	0.1314		0.1314	0.1314	0.0000	1,882.0825	1,882.0825	0.0361	0.0345	1,893.5365
Total		**0.2014**	**1.8312**	**1.5382**	**0.0110**		**0.1392**	**0.1392**		**0.1392**	**0.1392**	**0.0000**	**1,993.4485**	**1,993.4485**	**0.0382**	**0.0365**	**2,005.5803**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
City Park	0		0.0000	0.0000	0.0000	0.0000
General Light Industry	2.32305e+007		6,764.8767	0.0000	0.0000	6,764.8767
Parking Lot	8.67471e+006		2,526.1310	0.0000	0.0000	2,526.1310
Regional Shopping Center	3.0256e+006		881.0738	0.0000	0.0000	881.0738
Total			**10,172.0815**	**0.0000**	**0.0000**	**10,172.0815**

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
City Park	0		0.0000	0.0000	0.0000	0.0000
General Light Industry	2.28261e+007		6,647.0919	0.0000	0.0000	6,647.0919
Parking Lot	8.67471e+006		2,526.1310	0.0000	0.0000	2,526.1310
Regional Shopping Center	2.93706e+006		855.2915	0.0000	0.0000	855.2915
Total			**10,028.5145**	**0.0000**	**0.0000**	**10,028.5145**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Mitigated	59.0197	2.6000e-004	0.0291	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	0.0568	0.0568	1.5000e-004	0.0000	0.0599
Unmitigated	59.0197	2.6000e-004	0.0291	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	0.0568	0.0568	1.5000e-004	0.0000	0.0599

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.3483					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	57.6687					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.6600e-003	2.6000e-004	0.0291	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	0.0568	0.0568	1.5000e-004	0.0000	0.0599
Total	**59.0197**	**2.6000e-004**	**0.0291**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**0.0568**	**0.0568**	**1.5000e-004**	**0.0000**	**0.0599**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.3483					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	57.6687					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.6600e-003	2.6000e-004	0.0291	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	0.0568	0.0568	1.5000e-004	0.0000	0.0599
Total	**59.0197**	**2.6000e-004**	**0.0291**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**0.0568**	**0.0568**	**1.5000e-004**	**0.0000**	**0.0599**

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		1,266.8412	20.6500	0.4876	1,851.6438
Unmitigated		1,266.8412	20.6500	0.4876	1,851.6438

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
City Park	0 / 54.689		55.7402	0.0000	0.0000	55.7402
General Light Industry	615.356 / 0		1,164.8516	20.0514	0.4735	1,732.7025
Parking Lot	0 / 0		0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	18.37 / 11.259		46.2493	0.5986	0.0141	63.2011
Total			**1,266.8412**	**20.6500**	**0.4876**	**1,851.6438**

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
City Park	0 / 54.689		55.7402	0.0000	0.0000	55.7402
General Light Industry	615.356 / 0		1,164.8516	20.0514	0.4735	1,732.7025
Parking Lot	0 / 0		0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	18.37 / 11.259		46.2493	0.5986	0.0141	63.2011
Total			**1,266.8412**	**20.6500**	**0.4876**	**1,851.6438**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			

Mitigated		723.4578	42.7551	0.0000	1,621.3155
Unmitigated		723.4578	42.7551	0.0000	1,621.3155

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
City Park	3.95		0.8018	0.0474	0.0000	1.7969
General Light Industry	3299.64		669.7971	39.5839	0.0000	1,501.0585
Parking Lot	0		0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	260.4		52.8589	3.1239	0.0000	118.4601
Total			**723.4578**	**42.7551**	**0.0000**	**1,621.3155**

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
City Park	3.95		0.8018	0.0474	0.0000	1.7969
General Light Industry	3299.64		669.7971	39.5839	0.0000	1,501.0585
Parking Lot	0		0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	260.4		52.8589	3.1239	0.0000	118.4601
Total			**723.4578**	**42.7551**	**0.0000**	**1,621.3155**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

CalEEMod Greenhouse Gas Emission Estimates for the Proposed HPCO Amendment

2015 HPCO Amendment

Placer County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	60.00	1000sqft	5.54	60,000.00	0
Office Park	300.00	1000sqft	32.85	300,000.00	0
General Light Industry	1,426.00	1000sqft	243.98	1,426,000.00	0
Parking Lot	150.83	Acre	150.83	6,570,154.80	0
City Park	71.01	Acre	71.01	3,093,195.60	0
Apartments Mid Rise	396.00	Dwelling Unit	21.97	396,000.00	1133
Condo/Townhouse	310.00	Dwelling Unit	35.60	310,000.00	887
Single Family Housing	242.00	Dwelling Unit	46.76	435,600.00	692
Regional Shopping Center	170.00	1000sqft	19.29	170,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2035
Utility Company	Roseville Electric				
CO2 Intensity (lb/MWhr)	642	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Used 2020 CO2 intensity factors

Land Use - Table 9: Current Proposed land Uses Comparison

Construction Phase - Assumed construction schedule

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Updated construction trips using trip rates for each land uses type provided by CalEEMod Appendix A

On-road Fugitive Dust - Assumed 0.1 miles of unpaved roads.

Grading - Total Acres Disturbed

Architectural Coating - Adjusted architectural coating during construction using equations found in the CalEEMod Appendix A.

Vehicle Trips - Traffic trip rates are based on the Fehr Peers Preliminary Traffic Study for Campus Oaks Technical Memorandum dated August 28, 2014.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Woodstoves - Assumed no wood buring fireplaces or stoves. Mid to low density houseing my have some gas firplaces, used CalEEMod defualt values.

Area Coating - removed open space square footages from architectural coating.

Energy Use - Updated to 2013 Title 24 Standards

Water And Wastewater -

Solid Waste -

Construction Off-road Equipment Mitigation - Used mitigation proposed in the 1996 HPMP EIR

Mobile Land Use Mitigation -

Mobile Commute Mitigation - 1996 HP Master Plan EIR - MM 4.10-3

Area Mitigation - Used mitigation proposed in the 1996 HPMP EIR

Energy Mitigation - 1996 HP Master Plan EIR - MM 4.10-3. Project would exceed Title 24 by 10%.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	2,623,150.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	2,623,150.00	265,000.00
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	2,623,150.00	713,000.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	7,869,450.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	7,869,450.00	795,000.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	7,869,450.00	2,139,000.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	770,580.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	770,580.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	2,311,740.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	2,311,740.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	100.00

tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	100
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblAreaCoating	Area_Nonresidential_Exterior	2623152	978000
tblAreaCoating	Area_Nonresidential_Interior	7869457	2934000
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	100	250
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	27.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	770.00	72.00
tblConstructionPhase	NumDays	770.00	290.00
tblConstructionPhase	NumDays	770.00	74.00
tblConstructionPhase	NumDays	10,850.00	4,072.00

tblConstructionPhase	NumDays	10,850.00	1,018.00
tblConstructionPhase	NumDays	10,850.00	1,019.00
tblConstructionPhase	NumDays	1,085.00	408.00
tblConstructionPhase	NumDays	1,085.00	103.00
tblConstructionPhase	NumDays	1,085.00	101.00
tblConstructionPhase	NumDays	770.00	290.00
tblConstructionPhase	NumDays	770.00	73.00
tblConstructionPhase	NumDays	770.00	74.00
tblConstructionPhase	NumDays	420.00	40.00
tblConstructionPhase	NumDays	420.00	159.00
tblConstructionPhase	NumDays	420.00	40.00
tblConstructionPhase	PhaseEndDate	7/7/2045	7/8/2045
tblConstructionPhase	PhaseEndDate	4/17/2043	4/19/2043
tblConstructionPhase	PhaseEndDate	12/13/2024	12/15/2024
tblConstructionPhase	PhaseEndDate	5/27/2044	5/29/2044
tblConstructionPhase	PhaseEndDate	2/13/2026	2/14/2026
tblEnergyUse	T24E	322.48	241.86
tblEnergyUse	T24E	301.15	225.86
tblEnergyUse	T24E	2.02	1.52
tblEnergyUse	T24E	3.93	2.95
tblEnergyUse	T24E	3.66	2.75
tblEnergyUse	T24E	4.76	3.57
tblEnergyUse	T24E	729.62	547.22
tblEnergyUse	T24NG	8,261.25	6,195.90

tblEnergyUse	T24NG	18,960.80	14,220.60
tblEnergyUse	T24NG	19.55	14.66
tblEnergyUse	T24NG	16.83	12.62
tblEnergyUse	T24NG	11.48	8.61
tblEnergyUse	T24NG	11.93	8.95
tblEnergyUse	T24NG	26,218.01	19,663.00
tblFireplaces	NumberGas	217.80	0.00
tblFireplaces	NumberNoFireplace	39.60	392.00
tblFireplaces	NumberNoFireplace	31.00	139.50
tblFireplaces	NumberNoFireplace	24.20	108.90
tblFireplaces	NumberWood	138.60	0.00
tblFireplaces	NumberWood	108.50	0.00
tblFireplaces	NumberWood	84.70	0.00
tblGrading	AcresOfGrading	1,020.00	149.26
tblGrading	AcresOfGrading	257.50	102.37
tblGrading	AcresOfGrading	252.50	57.68
tblLandUse	LotAcreage	1.38	5.54
tblLandUse	LotAcreage	6.89	32.85
tblLandUse	LotAcreage	32.74	243.98
tblLandUse	LotAcreage	10.42	21.97
tblLandUse	LotAcreage	19.38	35.60
tblLandUse	LotAcreage	78.57	46.76
tblLandUse	LotAcreage	3.90	19.29
tblOnRoadDust	VendorPercentPave	100.00	98.00

tblOnRoadDust	VendorPercentPave	100.00	98.00
tblOnRoadDust	VendorPercentPave	100.00	98.00
tblOnRoadDust	WorkerPercentPave	100.00	99.00
tblOnRoadDust	WorkerPercentPave	100.00	99.00
tblOnRoadDust	WorkerPercentPave	100.00	99.00
tblOnRoadDust	WorkerPercentPave	100.00	99.00
tblOnRoadDust	WorkerPercentPave	100.00	99.00
tblOnRoadDust	WorkerPercentPave	100.00	99.00
tblOnRoadDust	WorkerPercentPave	100.00	99.00
tblOnRoadDust	WorkerPercentPave	100.00	99.00
tblOnRoadDust	WorkerPercentPave	100.00	99.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	793.8	642
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblProjectCharacteristics	OperationalYear	2014	2035
tblTripsAndVMT	VendorTripNumber	2,006.00	395.00
tblTripsAndVMT	VendorTripNumber	2,006.00	294.00
tblTripsAndVMT	VendorTripNumber	2,006.00	257.00
tblTripsAndVMT	WorkerTripNumber	1,085.00	128.00
tblTripsAndVMT	WorkerTripNumber	5,423.00	1,012.00
tblTripsAndVMT	WorkerTripNumber	1,085.00	202.00
tblTripsAndVMT	WorkerTripNumber	5,423.00	762.00
tblTripsAndVMT	WorkerTripNumber	1,085.00	152.00
tblTripsAndVMT	WorkerTripNumber	5,423.00	642.00

tblVehicleTrips	CC_TL	7.30	2.26
tblVehicleTrips	CC_TL	7.30	2.26
tblVehicleTrips	CC_TL	7.30	2.26
tblVehicleTrips	CC_TL	7.30	2.26
tblVehicleTrips	CNW_TL	7.30	2.26
tblVehicleTrips	CNW_TL	7.30	2.26
tblVehicleTrips	CNW_TL	7.30	2.26
tblVehicleTrips	CNW_TL	7.30	2.26
tblVehicleTrips	CW_TL	9.50	2.94
tblVehicleTrips	CW_TL	9.50	2.94
tblVehicleTrips	CW_TL	9.50	2.94
tblVehicleTrips	CW_TL	9.50	2.94
tblVehicleTrips	HO_TL	7.50	2.33
tblVehicleTrips	HO_TL	7.50	2.33
tblVehicleTrips	HO_TL	7.50	2.33
tblVehicleTrips	HS_TL	7.30	2.26
tblVehicleTrips	HS_TL	7.30	2.26
tblVehicleTrips	HS_TL	7.30	2.26
tblVehicleTrips	HW_TL	10.80	3.35
tblVehicleTrips	HW_TL	10.80	3.35
tblVehicleTrips	HW_TL	10.80	3.35
tblVehicleTrips	ST_TR	7.16	5.79
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	7.16	5.05

tblVehicleTrips	ST_TR	1.32	5.53
tblVehicleTrips	ST_TR	2.37	3.87
tblVehicleTrips	ST_TR	1.64	2.45
tblVehicleTrips	ST_TR	49.97	37.15
tblVehicleTrips	ST_TR	10.08	8.28
tblVehicleTrips	SU_TR	6.07	5.03
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	6.07	4.40
tblVehicleTrips	SU_TR	0.68	2.85
tblVehicleTrips	SU_TR	0.98	0.64
tblVehicleTrips	SU_TR	0.76	0.40
tblVehicleTrips	SU_TR	25.24	18.76
tblVehicleTrips	SU_TR	8.77	7.21
tblVehicleTrips	WD_TR	6.59	5.49
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	6.59	4.80
tblVehicleTrips	WD_TR	6.97	29.20
tblVehicleTrips	WD_TR	11.01	9.60
tblVehicleTrips	WD_TR	11.42	6.06
tblVehicleTrips	WD_TR	42.94	31.92
tblVehicleTrips	WD_TR	9.57	7.86
tblWoodstoves	NumberCatalytic	19.80	0.00
tblWoodstoves	NumberCatalytic	15.50	0.00
tblWoodstoves	NumberCatalytic	12.10	0.00

tblWoodstoves	NumberNoncatalytic	19.80	0.00
tblWoodstoves	NumberNoncatalytic	15.50	0.00
tblWoodstoves	NumberNoncatalytic	12.10	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.4216	4.7798	3.2517	3.7400e-003	0.8979	0.2367	1.1347	0.3938	0.2178	0.6116	0.0000	354.4585	354.4585	0.1036	0.0000	356.6329
2016	1.2551	7.9800	11.8390	0.0213	19.7196	0.3292	20.0488	2.2749	0.3076	2.5825	0.0000	1,789.8188	1,789.8188	0.1227	0.0000	1,792.3952
2017	1.1345	7.1481	11.1369	0.0218	20.1140	0.2883	20.4023	2.1808	0.2697	2.4505	0.0000	1,782.7076	1,782.7076	0.1125	0.0000	1,785.0697
2018	1.0021	6.4188	10.3355	0.0218	20.1913	0.2465	20.4378	2.1892	0.2307	2.4199	0.0000	1,746.7659	1,746.7659	0.1089	0.0000	1,749.0527
2019	0.9121	5.6250	9.4147	0.0208	19.1091	0.2099	19.3190	2.0720	0.1964	2.2684	0.0000	1,630.0660	1,630.0660	0.1046	0.0000	1,632.2621
2020	7.6437	3.4636	3.0591	4.9700e-003	0.9118	0.1656	1.0774	0.4002	0.1526	0.5528	0.0000	420.6443	420.6443	0.1215	0.0000	423.1960
2021	0.6814	4.2339	7.8473	0.0187	16.7860	0.1638	16.9499	1.9538	0.1532	2.1070	0.0000	1,427.3292	1,427.3292	0.1030	0.0000	1,429.4922
2022	0.6422	3.6957	7.7276	0.0191	17.1613	0.1385	17.2998	1.8603	0.1297	1.9900	0.0000	1,447.7458	1,447.7458	0.0954	0.0000	1,449.7486

2023	0.6039	3.3719	7.5054	0.0191	17.1613	0.1229	17.2842	1.8603	0.1150	1.9753	0.0000	1,440.2271	1,440.2271	0.0940	0.0000	1,442.2001
2024	0.5913	3.1571	7.1360	0.0185	16.5020	0.1103	16.6123	1.7890	0.1031	1.8921	0.0000	1,391.6031	1,391.6031	0.0932	0.0000	1,393.5608
2025	2.8256	1.8090	2.2184	3.8600e-003	1.6299	0.0803	1.7102	0.8169	0.0740	0.8909	0.0000	322.7314	322.7314	0.0921	0.0000	324.6653
2026	0.3880	3.5029	4.0402	7.9400e-003	3.0907	0.1525	3.2432	1.5113	0.1403	1.6516	0.0000	690.5380	690.5380	0.2193	0.0000	695.1432
2027	0.5018	3.6445	5.9077	0.0145	10.0065	0.1437	10.1503	1.6272	0.1327	1.7599	0.0000	1,139.1712	1,139.1712	0.1900	0.0000	1,143.1611
2028	0.7209	3.7838	9.6032	0.0278	26.8183	0.1188	26.9371	2.9076	0.1107	3.0184	0.0000	2,036.0748	2,036.0748	0.1027	0.0000	2,038.2322
2029	0.7122	3.7766	9.5297	0.0279	26.9215	0.1193	27.0408	2.9188	0.1112	3.0300	0.0000	2,039.5377	2,039.5377	0.1027	0.0000	2,041.6934
2030	0.6943	3.1679	9.4132	0.0284	26.9215	0.0701	26.9916	2.9188	0.0661	2.9849	0.0000	2,075.9311	2,075.9311	0.0452	0.0000	2,076.8800
2031	0.6832	3.1504	9.3346	0.0284	26.9215	0.0701	26.9917	2.9188	0.0661	2.9850	0.0000	2,072.9657	2,072.9657	0.0448	0.0000	2,073.9064
2032	0.6724	3.1429	9.2895	0.0285	27.0247	0.0704	27.0952	2.9300	0.0664	2.9964	0.0000	2,078.4205	2,078.4205	0.0446	0.0000	2,079.3576
2033	0.6569	3.1018	9.1434	0.0283	26.8184	0.0699	26.8884	2.9077	0.0659	2.9736	0.0000	2,060.5571	2,060.5571	0.0440	0.0000	2,061.4812
2034	0.6491	3.0884	9.0814	0.0283	26.8185	0.0699	26.8884	2.9077	0.0659	2.9736	0.0000	2,058.8647	2,058.8647	0.0437	0.0000	2,059.7832
2035	0.6316	2.9897	9.0543	0.0284	26.9216	0.0627	26.9843	2.9189	0.0587	2.9776	0.0000	2,065.4220	2,065.4220	0.0427	0.0000	2,066.3185
2036	0.1588	0.9368	2.1081	4.0400e-003	26.7871	0.0118	26.7989	2.8362	0.0118	2.8480	0.0000	342.8367	342.8367	0.0128	0.0000	343.1050
2037	0.1582	0.9332	2.1000	4.0200e-003	26.6848	0.0118	26.6966	2.8254	0.0118	2.8372	0.0000	341.5281	341.5281	0.0127	0.0000	341.7954
2038	0.1582	0.9332	2.1000	4.0200e-003	26.6848	0.0118	26.6966	2.8254	0.0118	2.8372	0.0000	341.5281	341.5281	0.0127	0.0000	341.7954
2039	0.1576	0.9296	2.0920	4.0100e-003	26.5826	0.0117	26.5943	2.8146	0.0117	2.8263	0.0000	340.2196	340.2196	0.0127	0.0000	340.4859
2040	0.1556	0.8982	2.1001	4.0200e-003	26.6848	9.5800e-003	26.6944	2.8254	9.5800e-003	2.8350	0.0000	341.5282	341.5282	0.0123	0.0000	341.7861

2041	0.1556	0.8982	2.1001	4.0200e-003	26.6848	9.5800e-003	26.6944	2.8254	9.5800e-003	2.8350	0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
2042	0.1556	0.8982	2.1001	4.0200e-003	26.6848	9.5800e-003	26.6944	2.8254	9.5800e-003	2.8350	0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
2043	0.2624	0.5962	2.0445	3.7100e-003	7.8819	0.0133	7.8952	0.8358	0.0133	0.8491	0.0000	317.7548	317.7548	0.0109	0.0000	317.9841
2044	3.6663	0.2471	0.9598	1.6900e-003	0.1115	6.6100e-003	0.1181	0.0274	6.6100e-003	0.0340	0.0000	144.7971	144.7971	4.9000e-003	0.0000	144.9000
2045	3.0846	0.0491	0.1210	2.0000e-004	0.0924	5.0000e-004	0.0929	0.0227	5.0000e-004	0.0232	0.0000	17.2345	17.2345	6.1000e-004	0.0000	17.2472
Total	**32.1368**	**92.3515**	**183.6946**	**0.4554**	**573.3269**	**3.1357**	**576.4626**	**64.9217**	**2.9300**	**67.8517**	**0.0000**	**34,942.0639**	**34,942.0639**	**2.1352**	**0.0000**	**34,986.9034**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.0934	1.7649	2.2739	3.7400e-003	0.2806	0.0802	0.3608	0.1318	0.0802	0.2119	0.0000	354.4581	354.4581	0.1036	0.0000	356.6325
2016	0.8859	5.9408	11.6911	0.0213	4.0127	0.1836	4.1963	0.6137	0.1784	0.7921	0.0000	1,789.8184	1,789.8184	0.1227	0.0000	1,792.3948
2017	0.8184	5.5580	11.0962	0.0218	4.0422	0.1739	4.2161	0.5760	0.1694	0.7453	0.0000	1,782.7072	1,782.7072	0.1125	0.0000	1,785.0693
2018	0.7414	5.2330	10.3724	0.0218	4.0577	0.1692	4.2268	0.5782	0.1650	0.7432	0.0000	1,746.7655	1,746.7655	0.1089	0.0000	1,749.0523
2019	0.6985	4.7593	9.5185	0.0208	3.8409	0.1611	4.0020	0.5474	0.1575	0.7048	0.0000	1,630.0656	1,630.0656	0.1046	0.0000	1,632.2617
2020	7.4232	2.1108	2.9231	4.9700e-003	0.3174	0.0997	0.4171	0.1423	0.0996	0.2420	0.0000	420.6438	420.6438	0.1215	0.0000	423.1956
2021	0.5132	3.7515	8.0135	0.0187	3.4167	0.1530	3.5697	0.5280	0.1505	0.6784	0.0000	1,427.3289	1,427.3289	0.1030	0.0000	1,429.4919
2022	0.5085	3.5186	7.9210	0.0191	3.4462	0.1510	3.5972	0.4908	0.1483	0.6391	0.0000	1,447.7454	1,447.7454	0.0954	0.0000	1,449.7482
2023	0.4876	3.3539	7.7142	0.0191	3.4462	0.1495	3.5957	0.4908	0.1470	0.6377	0.0000	1,440.2268	1,440.2268	0.0940	0.0000	1,442.1997
2024	0.4895	3.2670	7.3619	0.0185	3.3144	0.1475	3.4619	0.4721	0.1451	0.6171	0.0000	1,391.6028	1,391.6028	0.0932	0.0000	1,393.5605
2025	2.7120	1.6403	2.2069	3.8600e-003	0.5565	0.0833	0.6398	0.2817	0.0833	0.3650	0.0000	322.7311	322.7311	0.0921	0.0000	324.6649
2026	0.1926	3.7263	4.7711	7.9400e-003	0.9980	0.1671	1.1650	0.5077	0.1670	0.6748	0.0000	690.5372	690.5372	0.2193	0.0000	695.1424
2027	0.3402	3.9423	6.5700	0.0145	2.1907	0.1714	2.3621	0.4802	0.1702	0.6504	0.0000	1,139.1705	1,139.1705	0.1900	0.0000	1,143.1604

2028	0.6312	4.0132	9.8324	0.0278	5.3885	0.1677	5.5562	0.7677	0.1637	0.9315	0.0000	2,036.0745	2,036.0745	0.1027	0.0000	2,038.2318
2029	0.6221	4.0069	9.7599	0.0279	5.4092	0.1684	5.5776	0.7707	0.1644	0.9351	0.0000	2,039.5373	2,039.5373	0.1027	0.0000	2,041.6930
2030	0.6117	3.9843	9.6330	0.0284	5.4092	0.1685	5.5777	0.7707	0.1645	0.9351	0.0000	2,075.9307	2,075.9307	0.0452	0.0000	2,076.8796
2031	0.6006	3.9669	9.5544	0.0284	5.4092	0.1685	5.5778	0.7707	0.1645	0.9352	0.0000	2,072.9653	2,072.9653	0.0448	0.0000	2,073.9060
2032	0.5895	3.9625	9.5101	0.0285	5.4300	0.1692	5.5992	0.7737	0.1652	0.9388	0.0000	2,078.4200	2,078.4200	0.0446	0.0000	2,079.3572
2033	0.5746	3.9151	9.3624	0.0283	5.3886	0.1680	5.5565	0.7678	0.1640	0.9317	0.0000	2,060.5567	2,060.5567	0.0440	0.0000	2,061.4808
2034	0.5669	3.9017	9.3004	0.0283	5.3886	0.1680	5.5565	0.7678	0.1640	0.9317	0.0000	2,058.8643	2,058.8643	0.0437	0.0000	2,059.7828
2035	0.5610	3.9062	9.2792	0.0284	5.4093	0.1686	5.5779	0.7707	0.1646	0.9353	0.0000	2,065.4216	2,065.4216	0.0427	0.0000	2,066.3181
2036	0.0879	1.8568	2.3338	4.0400e-003	5.1923	0.1181	5.3104	0.6799	0.1181	0.7980	0.0000	342.8363	342.8363	0.0128	0.0000	343.1046
2037	0.0876	1.8497	2.3249	4.0200e-003	5.1725	0.1177	5.2902	0.6773	0.1177	0.7949	0.0000	341.5277	341.5277	0.0127	0.0000	341.7950
2038	0.0876	1.8497	2.3249	4.0200e-003	5.1725	0.1177	5.2902	0.6773	0.1177	0.7949	0.0000	341.5277	341.5277	0.0127	0.0000	341.7950
2039	0.0873	1.8426	2.3160	4.0100e-003	5.1527	0.1172	5.2699	0.6747	0.1172	0.7919	0.0000	340.2192	340.2192	0.0127	0.0000	340.4855
2040	0.0876	1.8497	2.3249	4.0200e-003	5.1725	0.1177	5.2902	0.6773	0.1177	0.7949	0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
2041	0.0876	1.8497	2.3249	4.0200e-003	5.1725	0.1177	5.2902	0.6773	0.1177	0.7949	0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
2042	0.0876	1.8497	2.3249	4.0200e-003	5.1725	0.1177	5.2902	0.6773	0.1177	0.7949	0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
2043	0.2017	1.5636	2.2432	3.7100e-003	1.5353	0.0897	1.6251	0.2021	0.0897	0.2919	0.0000	317.7544	317.7544	0.0109	0.0000	317.9838
2044	3.6386	0.6916	1.0392	1.6900e-003	0.1115	0.0391	0.1506	0.0274	0.0391	0.0664	0.0000	144.7970	144.7970	4.9000e-003	0.0000	144.8999
2045	3.0809	0.0916	0.1237	2.0000e-004	0.0924	6.4200e-003	0.0988	0.0227	6.4200e-003	0.0291	0.0000	17.2344	17.2344	6.1000e-004	0.0000	17.2472

Total	28.1962	95.5181	188.3462	0.4554	115.0994	4.1961	119.2954	16.9934	4.1350	21.1283	0.0000	34,942.0517	34,942.0517	2.1352	0.0000	34,986.8912

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**12.26**	**-3.43**	**-2.53**	**0.00**	**79.92**	**-33.82**	**79.31**	**73.82**	**-41.13**	**68.86**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	51.6945	0.0811	7.0355	3.7000e-004		0.0558	0.0558		0.0556	0.0556	0.0000	250.6675	250.6675	0.0156	4.3800e-003	252.3548
Energy	0.2189	1.9467	1.3555	0.0119		0.1512	0.1512		0.1512	0.1512	0.0000	10,507.5286	10,507.5286	0.0415	0.0397	10,520.7116
Mobile	12.6266	17.3040	105.5732	0.2282	13.9230	0.3423	14.2652	3.7337	0.3160	4.0497	0.0000	15,015.9569	15,015.9569	0.3855	0.0000	15,024.0528
Waste						0.0000	0.0000		0.0000	0.0000	580.8647	0.0000	580.8647	34.3281	0.0000	1,301.7553
Water						0.0000	0.0000		0.0000	0.0000	148.5081	911.3586	1,059.8668	15.2532	0.3602	1,491.8341
Total	**64.5400**	**19.3318**	**113.9641**	**0.2405**	**13.9230**	**0.5493**	**14.4723**	**3.7337**	**0.5229**	**4.2566**	**729.3729**	**26,685.5116**	**27,414.8845**	**50.0240**	**0.4043**	**28,590.7086**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	51.5950	0.0645	5.3419	2.4000e-004		0.0459	0.0459		0.0457	0.0457	0.0000	247.1973	247.1973	0.0104	4.3800e-003	248.7739
Energy	0.1987	1.7669	1.2266	0.0108		0.1373	0.1373		0.1373	0.1373	0.0000	10,189.3598	10,189.3598	0.0377	0.0361	10,201.3286
Mobile	12.6266	17.3040	105.5732	0.2282	13.9230	0.3423	14.2652	3.7337	0.3160	4.0497	0.0000	15,015.9569	15,015.9569	0.3855	0.0000	15,024.0528
Waste						0.0000	0.0000		0.0000	0.0000	580.8647	0.0000	580.8647	34.3281	0.0000	1,301.7553
Water						0.0000	0.0000		0.0000	0.0000	148.5081	911.3586	1,059.8668	15.2532	0.3602	1,491.8341
Total	**64.4203**	**19.1354**	**112.1417**	**0.2392**	**13.9230**	**0.5254**	**14.4484**	**3.7337**	**0.4990**	**4.2327**	**729.3729**	**26,363.8726**	**27,093.2455**	**50.0149**	**0.4006**	**28,267.7447**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.19**	**1.02**	**1.60**	**0.51**	**0.00**	**4.35**	**0.17**	**0.00**	**4.57**	**0.56**	**0.00**	**1.21**	**1.17**	**0.02**	**0.90**	**1.13**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Years 1-5: Site Preparation	Site Preparation	7/1/2015	8/25/2015	5	40	
2	Years 1-5: Grading	Grading	8/26/2015	1/15/2016	5	103	
3	Years 1-5: Buiding Construction	Building Construction	1/16/2016	12/11/2019	5	1018	
4	Years 1-5: Paving	Paving	12/12/2019	3/23/2020	5	73	
5	Years 1-5: Architectural Coating	Architectural Coating	3/24/2020	7/3/2020	5	74	
6	Years 5-10: Site Preparation	Site Preparation	7/4/2020	8/28/2020	5	40	
7	Years 5-10: Grading	Grading	8/29/2020	1/18/2021	5	101	
8	Years 5-10: Building Construction	Building Construction	1/19/2021	12/15/2024	5	1019	
9	Years 5-10: Paving	Paving	12/16/2024	3/27/2025	5	74	
10	Years 5-10: Architectural Coating	Architectural Coating	3/28/2025	7/7/2025	5	72	
11	Years 10-30: Site Preparation	Site Preparation	7/8/2025	2/14/2026	5	159	
12	Years 10-30: Grading	Grading	2/15/2026	9/8/2027	5	408	
13	Years 10-30: Building Construction	Building Construction	9/9/2027	4/19/2043	5	4072	
14	Years 10-30: Paving	Paving	4/20/2043	5/29/2044	5	290	

15	Years 10-30: Architectural Coating	Architectural Coating	5/30/2044	7/8/2045	5	290	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 2,311,740; Residential Outdoor: 770,580; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Years 1-5: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 1-5: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 1-5: Grading	Excavators	2	8.00	162	0.38
Years 1-5: Grading	Graders	1	8.00	174	0.41
Years 1-5: Grading	Rubber Tired Dozers	1	8.00	255	0.40
Years 1-5: Grading	Scrapers	2	8.00	361	0.48
Years 1-5: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 1-5: Buiding Construction	Cranes	1	7.00	226	0.29
Years 1-5: Buiding Construction	Forklifts	3	8.00	89	0.20
Years 1-5: Buiding Construction	Generator Sets	1	8.00	84	0.74
Years 1-5: Buiding Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 1-5: Buiding Construction	Welders	1	8.00	46	0.45
Years 1-5: Paving	Pavers	2	8.00	125	0.42
Years 1-5: Paving	Paving Equipment	2	8.00	130	0.36

Years 1-5: Paving	Rollers	2	8.00	80	0.38
Years 1-5: Architectural Coating	Air Compressors	1	6.00	78	0.48
Years 5-10: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 5-10: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 5-10: Grading	Excavators	2	8.00	162	0.38
Years 5-10: Grading	Graders	1	8.00	174	0.41
Years 5-10: Grading	Rubber Tired Dozers	1	8.00	255	0.40
Years 5-10: Grading	Scrapers	2	8.00	361	0.48
Years 5-10: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 5-10: Building Construction	Cranes	1	7.00	226	0.29
Years 5-10: Building Construction	Forklifts	3	8.00	89	0.20
Years 5-10: Building Construction	Generator Sets	1	8.00	84	0.74
Years 5-10: Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 5-10: Building Construction	Welders	1	8.00	46	0.45
Years 5-10: Paving	Pavers	2	8.00	125	0.42
Years 5-10: Paving	Paving Equipment	2	8.00	130	0.36
Years 5-10: Paving	Rollers	2	8.00	80	0.38
Years 5-10: Architectural Coating	Air Compressors	1	6.00	78	0.48
Years 10-30: Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Years 10-30: Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Years 10-30: Grading	Excavators	2	8.00	162	0.38
Years 10-30: Grading	Graders	1	8.00	174	0.41
Years 10-30: Grading	Rubber Tired Dozers	1	8.00	255	0.40
Years 10-30: Grading	Scrapers	2	8.00	361	0.48

Years 10-30: Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Years 10-30: Building Construction	Cranes	1	7.00	226	0.29
Years 10-30: Building Construction	Forklifts	3	8.00	89	0.20
Years 10-30: Building Construction	Generator Sets	1	8.00	84	0.74
Years 10-30: Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Years 10-30: Building Construction	Welders	1	8.00	46	0.45
Years 10-30: Paving	Pavers	2	8.00	125	0.42
Years 10-30: Paving	Paving Equipment	2	8.00	130	0.36
Years 10-30: Paving	Rollers	2	8.00	80	0.38
Years 10-30: Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Years 1-5: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 1-5: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 1-5: Buiding Construction	9	762.00	294.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 1-5: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 1-5: Architectural	1	152.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Building Construction	9	642.00	257.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 5-10: Architectural	1	128.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Years 10-30: Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-30: Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-30: Building	9	1,012.00	395.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-30: Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Years 10-30: Architectural	1	202.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Years 1-5: Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3613	0.0000	0.3613	0.1986	0.0000	0.1986	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1052	1.1378	0.8526	7.8000e-004		0.0618	0.0618		0.0568	0.0568	0.0000	74.6022	74.6022	0.0223	0.0000	75.0699

Total	**0.1052**	**1.1378**	**0.8526**	**7.8000e-004**	**0.3613**	**0.0618**	**0.4231**	**0.1986**	**0.0568**	**0.2554**	**0.0000**	**74.6022**	**74.6022**	**0.0223**	**0.0000**	**75.0699**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	1.6400e-003	0.0170	3.0000e-005	0.0484	2.0000e-005	0.0485	5.3000e-003	2.0000e-005	5.3200e-003	0.0000	2.5825	2.5825	1.3000e-004	0.0000	2.5852
Total	**1.3300e-003**	**1.6400e-003**	**0.0170**	**3.0000e-005**	**0.0484**	**2.0000e-005**	**0.0485**	**5.3000e-003**	**2.0000e-005**	**5.3200e-003**	**0.0000**	**2.5825**	**2.5825**	**1.3000e-004**	**0.0000**	**2.5852**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1220	0.0000	0.1220	0.0670	0.0000	0.0670	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0190	0.3892	0.4680	7.8000e-004		0.0192	0.0192		0.0192	0.0192	0.0000	74.6022	74.6022	0.0223	0.0000	75.0699
Total	**0.0190**	**0.3892**	**0.4680**	**7.8000e-004**	**0.1220**	**0.0192**	**0.1412**	**0.0670**	**0.0192**	**0.0863**	**0.0000**	**74.6022**	**74.6022**	**0.0223**	**0.0000**	**75.0699**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	1.6400e-003	0.0170	3.0000e-005	0.0100	2.0000e-005	0.0101	1.4700e-003	2.0000e-005	1.4800e-003	0.0000	2.5825	2.5825	1.3000e-004	0.0000	2.5852

Total	**1.3300e-003**	**1.6400e-003**	**0.0170**	**3.0000e-005**	**0.0100**	**2.0000e-005**	**0.0101**	**1.4700e-003**	**2.0000e-005**	**1.4800e-003**	**0.0000**	**2.5825**	**2.5825**	**1.3000e-004**	**0.0000**	**2.5852**

3.3 Years 1-5: Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3644	0.0000	0.3644	0.1763	0.0000	0.1763	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3117	3.6362	2.3386	2.8400e-003		0.1749	0.1749		0.1609	0.1609	0.0000	270.6742	270.6742	0.0808	0.0000	272.3711
Total	**0.3117**	**3.6362**	**2.3386**	**2.8400e-003**	**0.3644**	**0.1749**	**0.5393**	**0.1763**	**0.1609**	**0.3373**	**0.0000**	**270.6742**	**270.6742**	**0.0808**	**0.0000**	**272.3711**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4100e-003	4.2000e-003	0.0435	9.0000e-005	0.1238	5.0000e-005	0.1238	0.0135	5.0000e-005	0.0136	0.0000	6.5996	6.5996	3.4000e-004	0.0000	6.6067
Total	**3.4100e-003**	**4.2000e-003**	**0.0435**	**9.0000e-005**	**0.1238**	**5.0000e-005**	**0.1238**	**0.0135**	**5.0000e-005**	**0.0136**	**0.0000**	**6.5996**	**6.5996**	**3.4000e-004**	**0.0000**	**6.6067**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1230	0.0000	0.1230	0.0595	0.0000	0.0595	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0696	1.3699	1.7454	2.8400e-003		0.0609	0.0609		0.0609	0.0609	0.0000	270.6738	270.6738	0.0808	0.0000	272.3708

Total	**0.0696**	**1.3699**	**1.7454**	**2.8400e-003**	**0.1230**	**0.0609**	**0.1839**	**0.0595**	**0.0609**	**0.1204**	**0.0000**	**270.6738**	**270.6738**	**0.0808**	**0.0000**	**272.3708**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4100e-003	4.2000e-003	0.0435	9.0000e-005	0.0257	5.0000e-005	0.0257	3.7500e-003	5.0000e-005	3.7900e-003	0.0000	6.5996	6.5996	3.4000e-004	0.0000	6.6067
Total	**3.4100e-003**	**4.2000e-003**	**0.0435**	**9.0000e-005**	**0.0257**	**5.0000e-005**	**0.0257**	**3.7500e-003**	**5.0000e-005**	**3.7900e-003**	**0.0000**	**6.5996**	**6.5996**	**3.4000e-004**	**0.0000**	**6.6067**

3.3 Years 1-5: Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3644	0.0000	0.3644	0.1763	0.0000	0.1763	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0356	0.4115	0.2703	3.4000e-004		0.0197	0.0197		0.0181	0.0181	0.0000	32.0077	32.0077	9.6500e-003	0.0000	32.2104
Total	**0.0356**	**0.4115**	**0.2703**	**3.4000e-004**	**0.3644**	**0.0197**	**0.3841**	**0.1763**	**0.0181**	**0.1945**	**0.0000**	**32.0077**	**32.0077**	**9.6500e-003**	**0.0000**	**32.2104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	4.5000e-004	4.5900e-003	1.0000e-005	0.0148	1.0000e-005	0.0148	1.6200e-003	1.0000e-005	1.6200e-003	0.0000	0.7603	0.7603	4.0000e-005	0.0000	0.7611

Total	**3.6000e-004**	**4.5000e-004**	**4.5900e-003**	**1.0000e-005**	**0.0148**	**1.0000e-005**	**0.0148**	**1.6200e-003**	**1.0000e-005**	**1.6200e-003**	**0.0000**	**0.7603**	**0.7603**	**4.0000e-005**	**0.0000**	**0.7611**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1230	0.0000	0.1230	0.0595	0.0000	0.0595	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3200e-003	0.1638	0.2087	3.4000e-004		7.2800e-003	7.2800e-003		7.2800e-003	7.2800e-003	0.0000	32.0076	32.0076	9.6500e-003	0.0000	32.2104
Total	**8.3200e-003**	**0.1638**	**0.2087**	**3.4000e-004**	**0.1230**	**7.2800e-003**	**0.1303**	**0.0595**	**7.2800e-003**	**0.0668**	**0.0000**	**32.0076**	**32.0076**	**9.6500e-003**	**0.0000**	**32.2104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	4.5000e-004	4.5900e-003	1.0000e-005	3.0700e-003	1.0000e-005	3.0700e-003	4.5000e-004	1.0000e-005	4.5000e-004	0.0000	0.7603	0.7603	4.0000e-005	0.0000	0.7611
Total	**3.6000e-004**	**4.5000e-004**	**4.5900e-003**	**1.0000e-005**	**3.0700e-003**	**1.0000e-005**	**3.0700e-003**	**4.5000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**0.7603**	**0.7603**	**4.0000e-005**	**0.0000**	**0.7611**

3.4 Years 1-5: Buiding Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4258	3.5633	2.3133	3.3500e-003		0.2459	0.2459		0.2311	0.2311	0.0000	302.6920	302.6920	0.0751	0.0000	304.2685
Total	**0.4258**	**3.5633**	**2.3133**	**3.3500e-003**		**0.2459**	**0.2459**		**0.2311**	**0.2311**	**0.0000**	**302.6920**	**302.6920**	**0.0751**	**0.0000**	**304.2685**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4809	3.6189	5.2728	8.7700e-003	6.5281	0.0584	6.5864	0.6950	0.0537	0.7487	0.0000	796.0166	796.0166	6.4400e-003	0.0000	796.1519
Worker	0.3124	0.3859	3.9781	8.8200e-003	12.8123	5.2000e-003	12.8175	1.4019	4.7600e-003	1.4067	0.0000	658.3423	658.3423	0.0315	0.0000	659.0033
Total	**0.7933**	**4.0048**	**9.2508**	**0.0176**	**19.3403**	**0.0636**	**19.4039**	**2.0969**	**0.0584**	**2.1554**	**0.0000**	**1,454.3589**	**1,454.3589**	**0.0379**	**0.0000**	**1,455.1552**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0839	1.7718	2.2270	3.3500e-003		0.1127	0.1127		0.1127	0.1127	0.0000	302.6916	302.6916	0.0751	0.0000	304.2682
Total	**0.0839**	**1.7718**	**2.2270**	**3.3500e-003**		**0.1127**	**0.1127**		**0.1127**	**0.1127**	**0.0000**	**302.6916**	**302.6916**	**0.0751**	**0.0000**	**304.2682**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4809	3.6189	5.2728	8.7700e-003	1.2307	0.0584	1.2891	0.1660	0.0537	0.2197	0.0000	796.0166	796.0166	6.4400e-003	0.0000	796.1519
Worker	0.3124	0.3859	3.9781	8.8200e-003	2.6560	5.2000e-003	2.6612	0.3877	4.7600e-003	0.3925	0.0000	658.3423	658.3423	0.0315	0.0000	659.0033

Total	**0.7933**	**4.0048**	**9.2508**	**0.0176**	**3.8867**	**0.0636**	**3.9502**	**0.5538**	**0.0584**	**0.6122**	**0.0000**	**1,454.3589**	**1,454.3589**	**0.0379**	**0.0000**	**1,455.1552**

3.4 Years 1-5: Buiding Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4033	3.4327	2.3568	3.4900e-003		0.2316	0.2316		0.2175	0.2175	0.0000	311.3228	311.3228	0.0766	0.0000	312.9319
Total	**0.4033**	**3.4327**	**2.3568**	**3.4900e-003**		**0.2316**	**0.2316**		**0.2175**	**0.2175**	**0.0000**	**311.3228**	**311.3228**	**0.0766**	**0.0000**	**312.9319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4493	3.3610	5.1719	9.1000e-003	6.7892	0.0515	6.8407	0.7228	0.0474	0.7702	0.0000	814.0023	814.0023	6.2400e-003	0.0000	814.1332
Worker	0.2819	0.3544	3.6082	9.1600e-003	13.3248	5.2200e-003	13.3300	1.4580	4.8000e-003	1.4628	0.0000	657.3825	657.3825	0.0296	0.0000	658.0046
Total	**0.7312**	**3.7153**	**8.7801**	**0.0183**	**20.1140**	**0.0567**	**20.1707**	**2.1808**	**0.0522**	**2.2330**	**0.0000**	**1,471.3847**	**1,471.3847**	**0.0359**	**0.0000**	**1,472.1378**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0873	1.8426	2.3160	3.4900e-003		0.1172	0.1172		0.1172	0.1172	0.0000	311.3225	311.3225	0.0766	0.0000	312.9315
Total	**0.0873**	**1.8426**	**2.3160**	**3.4900e-003**		**0.1172**	**0.1172**		**0.1172**	**0.1172**	**0.0000**	**311.3225**	**311.3225**	**0.0766**	**0.0000**	**312.9315**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4493	3.3610	5.1719	9.1000e-003	1.2800	0.0515	1.3315	0.1727	0.0474	0.2201	0.0000	814.0023	814.0023	6.2400e-003	0.0000	814.1332
Worker	0.2819	0.3544	3.6082	9.1600e-003	2.7622	5.2200e-003	2.7674	0.4033	4.8000e-003	0.4081	0.0000	657.3825	657.3825	0.0296	0.0000	658.0046
Total	**0.7312**	**3.7153**	**8.7801**	**0.0183**	**4.0422**	**0.0567**	**4.0989**	**0.5760**	**0.0522**	**0.6281**	**0.0000**	**1,471.3847**	**1,471.3847**	**0.0359**	**0.0000**	**1,472.1378**

3.4 Years 1-5: Buiding Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9844	308.9844	0.0756	0.0000	310.5723
Total	**0.3483**	**3.0355**	**2.2880**	**3.5000e-003**		**0.1950**	**0.1950**		**0.1833**	**0.1833**	**0.0000**	**308.9844**	**308.9844**	**0.0756**	**0.0000**	**310.5723**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4045	3.0651	4.8399	9.1200e-003	6.8153	0.0464	6.8617	0.7256	0.0426	0.7682	0.0000	802.8956	802.8956	6.0200e-003	0.0000	803.0219
Worker	0.2493	0.3182	3.2076	9.1900e-003	13.3760	5.1400e-003	13.3812	1.4636	4.7500e-003	1.4684	0.0000	634.8859	634.8859	0.0273	0.0000	635.4584

Total	**0.6538**	**3.3833**	**8.0475**	**0.0183**	**20.1913**	**0.0515**	**20.2428**	**2.1892**	**0.0474**	**2.2366**	**0.0000**	**1,437.7815**	**1,437.7815**	**0.0333**	**0.0000**	**1,438.4803**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0876	1.8497	2.3249	3.5000e-003		0.1177	0.1177		0.1177	0.1177	0.0000	308.9841	308.9841	0.0756	0.0000	310.5720
Total	**0.0876**	**1.8497**	**2.3249**	**3.5000e-003**		**0.1177**	**0.1177**		**0.1177**	**0.1177**	**0.0000**	**308.9841**	**308.9841**	**0.0756**	**0.0000**	**310.5720**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4045	3.0651	4.8399	9.1200e-003	1.2849	0.0464	1.3312	0.1734	0.0426	0.2160	0.0000	802.8956	802.8956	6.0200e-003	0.0000	803.0219
Worker	0.2493	0.3182	3.2076	9.1900e-003	2.7728	5.1400e-003	2.7780	0.4048	4.7500e-003	0.4096	0.0000	634.8859	634.8859	0.0273	0.0000	635.4584
Total	**0.6538**	**3.3833**	**8.0475**	**0.0183**	**4.0577**	**0.0515**	**4.1092**	**0.5782**	**0.0474**	**0.6255**	**0.0000**	**1,437.7815**	**1,437.7815**	**0.0333**	**0.0000**	**1,438.4803**

3.4 Years 1-5: Buiding Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2904	2.5892	2.1144	3.3100e-003		0.1587	0.1587		0.1492	0.1492	0.0000	289.1416	289.1416	0.0704	0.0000	290.6190
Total	**0.2904**	**2.5892**	**2.1144**	**3.3100e-003**		**0.1587**	**0.1587**		**0.1492**	**0.1492**	**0.0000**	**289.1416**	**289.1416**	**0.0704**	**0.0000**	**290.6190**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3580	2.6553	4.4124	8.6200e-003	6.4498	0.0407	6.4905	0.6867	0.0374	0.7241	0.0000	747.0367	747.0367	5.5400e-003	0.0000	747.1530
Worker	0.2156	0.2757	2.7842	8.6900e-003	12.6585	4.8600e-003	12.6634	1.3851	4.5000e-003	1.3896	0.0000	579.2138	579.2138	0.0242	0.0000	579.7224
Total	**0.5736**	**2.9310**	**7.1966**	**0.0173**	**19.1083**	**0.0455**	**19.1538**	**2.0718**	**0.0419**	**2.1137**	**0.0000**	**1,326.2505**	**1,326.2505**	**0.0298**	**0.0000**	**1,326.8755**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0829	1.7505	2.2002	3.3100e-003		0.1113	0.1113		0.1113	0.1113	0.0000	289.1413	289.1413	0.0704	0.0000	290.6186
Total	**0.0829**	**1.7505**	**2.2002**	**3.3100e-003**		**0.1113**	**0.1113**		**0.1113**	**0.1113**	**0.0000**	**289.1413**	**289.1413**	**0.0704**	**0.0000**	**290.6186**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3580	2.6553	4.4124	8.6200e-003	1.2160	0.0407	1.2567	0.1641	0.0374	0.2015	0.0000	747.0367	747.0367	5.5400e-003	0.0000	747.1530
Worker	0.2156	0.2757	2.7842	8.6900e-003	2.6241	4.8600e-003	2.6289	0.3831	4.5000e-003	0.3876	0.0000	579.2138	579.2138	0.0242	0.0000	579.7224

Total	**0.5736**	**2.9310**	**7.1966**	**0.0173**	**3.8401**	**0.0455**	**3.8856**	**0.5472**	**0.0419**	**0.5891**	**0.0000**	**1,326.2505**	**1,326.2505**	**0.0298**	**0.0000**	**1,326.8755**

3.5 Years 1-5: Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.9800e-003	0.1046	0.1006	1.6000e-004		5.6700e-003	5.6700e-003		5.2100e-003	5.2100e-003	0.0000	14.0276	14.0276	4.4400e-003	0.0000	14.1208
Paving	0.0379					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0479**	**0.1046**	**0.1006**	**1.6000e-004**		**5.6700e-003**	**5.6700e-003**		**5.2100e-003**	**5.2100e-003**	**0.0000**	**14.0276**	**14.0276**	**4.4400e-003**	**0.0000**	**14.1208**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	3.1000e-004	3.1100e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.6463	0.6463	3.0000e-005	0.0000	0.6468
Total	**2.4000e-004**	**3.1000e-004**	**3.1100e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.6463**	**0.6463**	**3.0000e-005**	**0.0000**	**0.6468**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8400e-003	0.0775	0.1185	1.6000e-004		4.1900e-003	4.1900e-003		4.1900e-003	4.1900e-003	0.0000	14.0276	14.0276	4.4400e-003	0.0000	14.1208
Paving	0.0379					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.0417**	**0.0775**	**0.1185**	**1.6000e-004**		**4.1900e-003**	**4.1900e-003**		**4.1900e-003**	**4.1900e-003**	**0.0000**	**14.0276**	**14.0276**	**4.4400e-003**	**0.0000**	**14.1208**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	3.1000e-004	3.1100e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.6463	0.6463	3.0000e-005	0.0000	0.6468
Total	**2.4000e-004**	**3.1000e-004**	**3.1100e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.6463**	**0.6463**	**3.0000e-005**	**0.0000**	**0.6468**

3.5 Years 1-5: Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0392	0.4066	0.4234	6.6000e-004		0.0218	0.0218		0.0201	0.0201	0.0000	57.8261	57.8261	0.0187	0.0000	58.2188
Paving	0.1597					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1989**	**0.4066**	**0.4234**	**6.6000e-004**		**0.0218**	**0.0218**		**0.0201**	**0.0201**	**0.0000**	**57.8261**	**57.8261**	**0.0187**	**0.0000**	**58.2188**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4000e-004	1.2000e-003	0.0121	4.0000e-005	3.4700e-003	2.0000e-005	3.5000e-003	9.2000e-004	2.0000e-005	9.5000e-004	0.0000	2.6156	2.6156	1.1000e-004	0.0000	2.6178

Total	**9.4000e-004**	**1.2000e-003**	**0.0121**	**4.0000e-005**	**3.4700e-003**	**2.0000e-005**	**3.5000e-003**	**9.2000e-004**	**2.0000e-005**	**9.5000e-004**	**0.0000**	**2.6156**	**2.6156**	**1.1000e-004**	**0.0000**	**2.6178**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0162	0.3264	0.4994	6.6000e-004		0.0177	0.0177		0.0177	0.0177	0.0000	57.8260	57.8260	0.0187	0.0000	58.2188
Paving	0.1597					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1759**	**0.3264**	**0.4994**	**6.6000e-004**		**0.0177**	**0.0177**		**0.0177**	**0.0177**	**0.0000**	**57.8260**	**57.8260**	**0.0187**	**0.0000**	**58.2188**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4000e-004	1.2000e-003	0.0121	4.0000e-005	3.4700e-003	2.0000e-005	3.5000e-003	9.2000e-004	2.0000e-005	9.5000e-004	0.0000	2.6156	2.6156	1.1000e-004	0.0000	2.6178
Total	**9.4000e-004**	**1.2000e-003**	**0.0121**	**4.0000e-005**	**3.4700e-003**	**2.0000e-005**	**3.5000e-003**	**9.2000e-004**	**2.0000e-005**	**9.5000e-004**	**0.0000**	**2.6156**	**2.6156**	**1.1000e-004**	**0.0000**	**2.6178**

3.6 Years 1-5: Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	7.1433					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.9600e-003	0.0623	0.0678	1.1000e-004		4.1000e-003	4.1000e-003		4.1000e-003	4.1000e-003	0.0000	9.4470	9.4470	7.3000e-004	0.0000	9.4624

Total	**7.1522**	**0.0623**	**0.0678**	**1.1000e-004**		**4.1000e-003**	**4.1000e-003**		**4.1000e-003**	**4.1000e-003**	**0.0000**	**9.4470**	**9.4470**	**7.3000e-004**	**0.0000**	**9.4624**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0119	0.0152	0.1534	5.2000e-004	0.0442	2.9000e-004	0.0445	0.0118	2.7000e-004	0.0120	0.0000	33.2426	33.2426	1.3700e-003	0.0000	33.2713
Total	**0.0119**	**0.0152**	**0.1534**	**5.2000e-004**	**0.0442**	**2.9000e-004**	**0.0445**	**0.0118**	**2.7000e-004**	**0.0120**	**0.0000**	**33.2426**	**33.2426**	**1.3700e-003**	**0.0000**	**33.2713**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	7.1433					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2000e-003	0.0502	0.0678	1.1000e-004		3.5200e-003	3.5200e-003		3.5200e-003	3.5200e-003	0.0000	9.4470	9.4470	7.3000e-004	0.0000	9.4624
Total	**7.1455**	**0.0502**	**0.0678**	**1.1000e-004**		**3.5200e-003**	**3.5200e-003**		**3.5200e-003**	**3.5200e-003**	**0.0000**	**9.4470**	**9.4470**	**7.3000e-004**	**0.0000**	**9.4624**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0119	0.0152	0.1534	5.2000e-004	0.0442	2.9000e-004	0.0445	0.0118	2.7000e-004	0.0120	0.0000	33.2426	33.2426	1.3700e-003	0.0000	33.2713

Total	**0.0119**	**0.0152**	**0.1534**	**5.2000e-004**	**0.0442**	**2.9000e-004**	**0.0445**	**0.0118**	**2.7000e-004**	**0.0120**	**0.0000**	**33.2426**	**33.2426**	**1.3700e-003**	**0.0000**	**33.2713**

3.7 Years 5-10: Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3613	0.0000	0.3613	0.1986	0.0000	0.1986	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0745	0.7773	0.6585	7.8000e-004		0.0386	0.0386		0.0355	0.0355	0.0000	68.8060	68.8060	0.0223	0.0000	69.2733
Total	**0.0745**	**0.7773**	**0.6585**	**7.8000e-004**	**0.3613**	**0.0386**	**0.4000**	**0.1986**	**0.0355**	**0.2341**	**0.0000**	**68.8060**	**68.8060**	**0.0223**	**0.0000**	**69.2733**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.6000e-004	9.7000e-004	9.8200e-003	3.0000e-005	0.0484	2.0000e-005	0.0484	5.3000e-003	2.0000e-005	5.3200e-003	0.0000	2.1279	2.1279	9.0000e-005	0.0000	2.1297
Total	**7.6000e-004**	**9.7000e-004**	**9.8200e-003**	**3.0000e-005**	**0.0484**	**2.0000e-005**	**0.0484**	**5.3000e-003**	**2.0000e-005**	**5.3200e-003**	**0.0000**	**2.1279**	**2.1279**	**9.0000e-005**	**0.0000**	**2.1297**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1220	0.0000	0.1220	0.0670	0.0000	0.0670	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0190	0.3892	0.4680	7.8000e-004		0.0192	0.0192		0.0192	0.0192	0.0000	68.8059	68.8059	0.0223	0.0000	69.2732

Total	**0.0190**	**0.3892**	**0.4680**	**7.8000e-004**	**0.1220**	**0.0192**	**0.1412**	**0.0670**	**0.0192**	**0.0863**	**0.0000**	**68.8059**	**68.8059**	**0.0223**	**0.0000**	**69.2732**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.6000e-004	9.7000e-004	9.8200e-003	3.0000e-005	0.0100	2.0000e-005	0.0101	1.4700e-003	2.0000e-005	1.4800e-003	0.0000	2.1279	2.1279	9.0000e-005	0.0000	2.1297
Total	**7.6000e-004**	**9.7000e-004**	**9.8200e-003**	**3.0000e-005**	**0.0100**	**2.0000e-005**	**0.0101**	**1.4700e-003**	**2.0000e-005**	**1.4800e-003**	**0.0000**	**2.1279**	**2.1279**	**9.0000e-005**	**0.0000**	**2.1297**

3.8 Years 5-10: Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3347	0.0000	0.3347	0.1705	0.0000	0.1705	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2025	2.1976	1.7099	2.7500e-003		0.1007	0.1007		0.0926	0.0926	0.0000	241.3184	241.3184	0.0781	0.0000	242.9574
Total	**0.2025**	**2.1976**	**1.7099**	**2.7500e-003**	**0.3347**	**0.1007**	**0.4354**	**0.1705**	**0.0926**	**0.2631**	**0.0000**	**241.3184**	**241.3184**	**0.0781**	**0.0000**	**242.9574**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8900e-003	2.4100e-003	0.0243	8.0000e-005	0.1197	5.0000e-005	0.1198	0.0131	4.0000e-005	0.0131	0.0000	5.2607	5.2607	2.2000e-004	0.0000	5.2652

Total	**1.8900e-003**	**2.4100e-003**	**0.0243**	**8.0000e-005**	**0.1197**	**5.0000e-005**	**0.1198**	**0.0131**	**4.0000e-005**	**0.0131**	**0.0000**	**5.2607**	**5.2607**	**2.2000e-004**	**0.0000**	**5.2652**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1130	0.0000	0.1130	0.0575	0.0000	0.0575	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0673	1.3252	1.6885	2.7500e-003		0.0589	0.0589		0.0589	0.0589	0.0000	241.3182	241.3182	0.0781	0.0000	242.9571
Total	**0.0673**	**1.3252**	**1.6885**	**2.7500e-003**	**0.1130**	**0.0589**	**0.1719**	**0.0575**	**0.0589**	**0.1164**	**0.0000**	**241.3182**	**241.3182**	**0.0781**	**0.0000**	**242.9571**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8900e-003	2.4100e-003	0.0243	8.0000e-005	0.0248	5.0000e-005	0.0249	3.6200e-003	4.0000e-005	3.6700e-003	0.0000	5.2607	5.2607	2.2000e-004	0.0000	5.2652
Total	**1.8900e-003**	**2.4100e-003**	**0.0243**	**8.0000e-005**	**0.0248**	**5.0000e-005**	**0.0249**	**3.6200e-003**	**4.0000e-005**	**3.6700e-003**	**0.0000**	**5.2607**	**5.2607**	**2.2000e-004**	**0.0000**	**5.2652**

3.8 Years 5-10: Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3347	0.0000	0.3347	0.1705	0.0000	0.1705	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0252	0.2670	0.2206	3.7000e-004		0.0121	0.0121		0.0111	0.0111	0.0000	32.5450	32.5450	0.0105	0.0000	32.7660

Total	**0.0252**	**0.2670**	**0.2206**	**3.7000e-004**	**0.3347**	**0.0121**	**0.3468**	**0.1705**	**0.0111**	**0.1816**	**0.0000**	**32.5450**	**32.5450**	**0.0105**	**0.0000**	**32.7660**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	3.0000e-004	3.0700e-003	1.0000e-005	0.0161	1.0000e-005	0.0162	1.7700e-003	1.0000e-005	1.7700e-003	0.0000	0.6975	0.6975	3.0000e-005	0.0000	0.6981
Total	**2.4000e-004**	**3.0000e-004**	**3.0700e-003**	**1.0000e-005**	**0.0161**	**1.0000e-005**	**0.0162**	**1.7700e-003**	**1.0000e-005**	**1.7700e-003**	**0.0000**	**0.6975**	**0.6975**	**3.0000e-005**	**0.0000**	**0.6981**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1130	0.0000	0.1130	0.0575	0.0000	0.0575	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0800e-003	0.1787	0.2277	3.7000e-004		7.9400e-003	7.9400e-003		7.9400e-003	7.9400e-003	0.0000	32.5449	32.5449	0.0105	0.0000	32.7660
Total	**9.0800e-003**	**0.1787**	**0.2277**	**3.7000e-004**	**0.1130**	**7.9400e-003**	**0.1209**	**0.0575**	**7.9400e-003**	**0.0655**	**0.0000**	**32.5449**	**32.5449**	**0.0105**	**0.0000**	**32.7660**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	3.0000e-004	3.0700e-003	1.0000e-005	3.3500e-003	1.0000e-005	3.3500e-003	4.9000e-004	1.0000e-005	4.9000e-004	0.0000	0.6975	0.6975	3.0000e-005	0.0000	0.6981

Total	**2.4000e-004**	**3.0000e-004**	**3.0700e-003**	**1.0000e-005**	**3.3500e-003**	**1.0000e-005**	**3.3500e-003**	**4.9000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**0.6975**	**0.6975**	**3.0000e-005**	**0.0000**	**0.6981**

3.9 Years 5-10: Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2357	2.1589	2.0589	3.3400e-003		0.1189	0.1189		0.1118	0.1118	0.0000	287.1932	287.1932	0.0692	0.0000	288.6462
Total	**0.2357**	**2.1589**	**2.0589**	**3.3400e-003**		**0.1189**	**0.1189**		**0.1118**	**0.1118**	**0.0000**	**287.1932**	**287.1932**	**0.0692**	**0.0000**	**288.6462**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2600	1.6051	3.5168	7.5700e-003	5.6838	0.0287	5.7124	0.6052	0.0264	0.6315	0.0000	642.2969	642.2969	4.6800e-003	0.0000	642.3951
Worker	0.1603	0.2027	2.0479	7.3800e-003	10.7514	4.1700e-003	10.7556	1.1764	3.8700e-003	1.1803	0.0000	464.5966	464.5966	0.0186	0.0000	464.9868
Total	**0.4203**	**1.8078**	**5.5647**	**0.0150**	**16.4352**	**0.0328**	**16.4680**	**1.7816**	**0.0303**	**1.8118**	**0.0000**	**1,106.8935**	**1,106.8935**	**0.0233**	**0.0000**	**1,107.3819**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0836	1.7647	2.2180	3.3400e-003		0.1123	0.1123		0.1123	0.1123	0.0000	287.1929	287.1929	0.0692	0.0000	288.6458
Total	**0.0836**	**1.7647**	**2.2180**	**3.3400e-003**		**0.1123**	**0.1123**		**0.1123**	**0.1123**	**0.0000**	**287.1929**	**287.1929**	**0.0692**	**0.0000**	**288.6458**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2600	1.6051	3.5168	7.5700e-003	1.0716	0.0287	1.1003	0.1446	0.0264	0.1710	0.0000	642.2969	642.2969	4.6800e-003	0.0000	642.3951
Worker	0.1603	0.2027	2.0479	7.3800e-003	2.2287	4.1700e-003	2.2329	0.3254	3.8700e-003	0.3293	0.0000	464.5966	464.5966	0.0186	0.0000	464.9868
Total	**0.4203**	**1.8078**	**5.5647**	**0.0150**	**3.3004**	**0.0328**	**3.3332**	**0.4700**	**0.0303**	**0.5002**	**0.0000**	**1,106.8935**	**1,106.8935**	**0.0233**	**0.0000**	**1,107.3819**

3.9 Years 5-10: Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2209	2.0197	2.1226	3.4900e-003		0.1047	0.1047		0.0986	0.0986	0.0000	299.9946	299.9946	0.0718	0.0000	301.5017
Total	**0.2209**	**2.0197**	**2.1226**	**3.4900e-003**		**0.1047**	**0.1047**		**0.0986**	**0.0986**	**0.0000**	**299.9946**	**299.9946**	**0.0718**	**0.0000**	**301.5017**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2623	1.4762	3.5855	7.8900e-003	5.9349	0.0294	5.9643	0.6319	0.0270	0.6589	0.0000	670.0579	670.0579	4.9700e-003	0.0000	670.1622
Worker	0.1590	0.1997	2.0195	7.7100e-003	11.2264	4.4100e-003	11.2308	1.2284	4.0900e-003	1.2325	0.0000	477.6933	477.6933	0.0186	0.0000	478.0847

Total	**0.4213**	**1.6759**	**5.6050**	**0.0156**	**17.1613**	**0.0338**	**17.1950**	**1.8603**	**0.0311**	**1.8914**	**0.0000**	**1,147.7512**	**1,147.7512**	**0.0236**	**0.0000**	**1,148.2469**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0873	1.8426	2.3160	3.4900e-003		0.1172	0.1172		0.1172	0.1172	0.0000	299.9943	299.9943	0.0718	0.0000	301.5013
Total	**0.0873**	**1.8426**	**2.3160**	**3.4900e-003**		**0.1172**	**0.1172**		**0.1172**	**0.1172**	**0.0000**	**299.9943**	**299.9943**	**0.0718**	**0.0000**	**301.5013**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2623	1.4762	3.5855	7.8900e-003	1.1190	0.0294	1.1484	0.1510	0.0270	0.1780	0.0000	670.0579	670.0579	4.9700e-003	0.0000	670.1622
Worker	0.1590	0.1997	2.0195	7.7100e-003	2.3272	4.4100e-003	2.3316	0.3398	4.0900e-003	0.3438	0.0000	477.6933	477.6933	0.0186	0.0000	478.0847
Total	**0.4213**	**1.6759**	**5.6050**	**0.0156**	**3.4462**	**0.0338**	**3.4800**	**0.4908**	**0.0311**	**0.5219**	**0.0000**	**1,147.7512**	**1,147.7512**	**0.0236**	**0.0000**	**1,148.2469**

3.9 Years 5-10: Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2036	1.8606	2.1072	3.4900e-003		0.0906	0.0906		0.0852	0.0852	0.0000	300.0980	300.0980	0.0713	0.0000	301.5949
Total	**0.2036**	**1.8606**	**2.1072**	**3.4900e-003**		**0.0906**	**0.0906**		**0.0852**	**0.0852**	**0.0000**	**300.0980**	**300.0980**	**0.0713**	**0.0000**	**301.5949**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2492	1.3222	3.4880	7.8800e-003	5.9349	0.0279	5.9628	0.6319	0.0256	0.6575	0.0000	669.1360	669.1360	4.7000e-003	0.0000	669.2348
Worker	0.1511	0.1891	1.9102	7.7100e-003	11.2264	4.4600e-003	11.2308	1.2284	4.1300e-003	1.2325	0.0000	470.9931	470.9931	0.0180	0.0000	471.3703
Total	**0.4003**	**1.5112**	**5.3982**	**0.0156**	**17.1613**	**0.0323**	**17.1936**	**1.8603**	**0.0298**	**1.8901**	**0.0000**	**1,140.1291**	**1,140.1291**	**0.0227**	**0.0000**	**1,140.6051**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0873	1.8426	2.3160	3.4900e-003		0.1172	0.1172		0.1172	0.1172	0.0000	300.0976	300.0976	0.0713	0.0000	301.5946
Total	**0.0873**	**1.8426**	**2.3160**	**3.4900e-003**		**0.1172**	**0.1172**		**0.1172**	**0.1172**	**0.0000**	**300.0976**	**300.0976**	**0.0713**	**0.0000**	**301.5946**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2492	1.3222	3.4880	7.8800e-003	1.1190	0.0279	1.1469	0.1510	0.0256	0.1767	0.0000	669.1360	669.1360	4.7000e-003	0.0000	669.2348
Worker	0.1511	0.1891	1.9102	7.7100e-003	2.3272	4.4600e-003	2.3317	0.3398	4.1300e-003	0.3439	0.0000	470.9931	470.9931	0.0180	0.0000	471.3703

Total	**0.4003**	**1.5112**	**5.3982**	**0.0156**	**3.4462**	**0.0323**	**3.4785**	**0.4908**	**0.0298**	**0.5205**	**0.0000**	**1,140.1291**	**1,140.1291**	**0.0227**	**0.0000**	**1,140.6051**

3.9 Years 5-10: Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1832	1.6722	2.0167	3.3600e-003		0.0763	0.0763		0.0718	0.0718	0.0000	288.6112	288.6112	0.0681	0.0000	290.0423
Total	**0.1832**	**1.6722**	**2.0167**	**3.3600e-003**		**0.0763**	**0.0763**		**0.0718**	**0.0718**	**0.0000**	**288.6112**	**288.6112**	**0.0681**	**0.0000**	**290.0423**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2316	1.2556	3.2809	7.5800e-003	5.7067	0.0269	5.7336	0.6076	0.0248	0.6324	0.0000	643.5498	643.5498	4.5400e-003	0.0000	643.6451
Worker	0.1386	0.1731	1.7506	7.4100e-003	10.7946	4.3300e-003	10.7989	1.1811	4.0200e-003	1.1852	0.0000	447.1804	447.1804	0.0167	0.0000	447.5314
Total	**0.3701**	**1.4287**	**5.0314**	**0.0150**	**16.5013**	**0.0312**	**16.5325**	**1.7888**	**0.0288**	**1.8175**	**0.0000**	**1,090.7301**	**1,090.7301**	**0.0213**	**0.0000**	**1,091.1765**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0839	1.7718	2.2270	3.3600e-003		0.1127	0.1127		0.1127	0.1127	0.0000	288.6109	288.6109	0.0681	0.0000	290.0419
Total	**0.0839**	**1.7718**	**2.2270**	**3.3600e-003**		**0.1127**	**0.1127**		**0.1127**	**0.1127**	**0.0000**	**288.6109**	**288.6109**	**0.0681**	**0.0000**	**290.0419**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2316	1.2556	3.2809	7.5800e-003	1.0760	0.0269	1.1029	0.1452	0.0248	0.1700	0.0000	643.5498	643.5498	4.5400e-003	0.0000	643.6451
Worker	0.1386	0.1731	1.7506	7.4100e-003	2.2377	4.3300e-003	2.2420	0.3267	4.0200e-003	0.3307	0.0000	447.1804	447.1804	0.0167	0.0000	447.5314
Total	**0.3701**	**1.4287**	**5.0314**	**0.0150**	**3.3137**	**0.0312**	**3.3449**	**0.4719**	**0.0288**	**0.5007**	**0.0000**	**1,090.7301**	**1,090.7301**	**0.0213**	**0.0000**	**1,091.1765**

3.10 Years 5-10: Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.8100e-003	0.0561	0.0860	1.3000e-004		2.7600e-003	2.7600e-003		2.5400e-003	2.5400e-003	0.0000	11.7603	11.7603	3.8000e-003	0.0000	11.8402
Paving	0.0320					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0379**	**0.0561**	**0.0860**	**1.3000e-004**		**2.7600e-003**	**2.7600e-003**		**2.5400e-003**	**2.5400e-003**	**0.0000**	**11.7603**	**11.7603**	**3.8000e-003**	**0.0000**	**11.8402**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	1.9000e-004	1.9600e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5015	0.5015	2.0000e-005	0.0000	0.5019

Total	**1.6000e-004**	**1.9000e-004**	**1.9600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5015**	**0.5015**	**2.0000e-005**	**0.0000**	**0.5019**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.2900e-003	0.0664	0.1016	1.3000e-004		3.5900e-003	3.5900e-003		3.5900e-003	3.5900e-003	0.0000	11.7603	11.7603	3.8000e-003	0.0000	11.8401
Paving	0.0320					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0353**	**0.0664**	**0.1016**	**1.3000e-004**		**3.5900e-003**	**3.5900e-003**		**3.5900e-003**	**3.5900e-003**	**0.0000**	**11.7603**	**11.7603**	**3.8000e-003**	**0.0000**	**11.8401**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	1.9000e-004	1.9600e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5015	0.5015	2.0000e-005	0.0000	0.5019
Total	**1.6000e-004**	**1.9000e-004**	**1.9600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5015**	**0.5015**	**2.0000e-005**	**0.0000**	**0.5019**

3.10 Years 5-10: Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0278	0.2611	0.4426	6.9000e-004		0.0127	0.0127		0.0117	0.0117	0.0000	60.7394	60.7394	0.0196	0.0000	61.1519
Paving	0.1656					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.1934**	**0.2611**	**0.4426**	**6.9000e-004**		**0.0127**	**0.0127**		**0.0117**	**0.0117**	**0.0000**	**60.7394**	**60.7394**	**0.0196**	**0.0000**	**61.1519**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7000e-004	9.6000e-004	9.7500e-003	4.0000e-005	3.6500e-003	3.0000e-005	3.6800e-003	9.7000e-004	2.0000e-005	1.0000e-003	0.0000	2.5623	2.5623	9.0000e-005	0.0000	2.5642
Total	**7.7000e-004**	**9.6000e-004**	**9.7500e-003**	**4.0000e-005**	**3.6500e-003**	**3.0000e-005**	**3.6800e-003**	**9.7000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.5623**	**2.5623**	**9.0000e-005**	**0.0000**	**2.5642**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0170	0.3430	0.5248	6.9000e-004		0.0185	0.0185		0.0185	0.0185	0.0000	60.7393	60.7393	0.0196	0.0000	61.1518
Paving	0.1656					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1826**	**0.3430**	**0.5248**	**6.9000e-004**		**0.0185**	**0.0185**		**0.0185**	**0.0185**	**0.0000**	**60.7393**	**60.7393**	**0.0196**	**0.0000**	**61.1518**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7000e-004	9.6000e-004	9.7500e-003	4.0000e-005	3.6500e-003	3.0000e-005	3.6800e-003	9.7000e-004	2.0000e-005	1.0000e-003	0.0000	2.5623	2.5623	9.0000e-005	0.0000	2.5642

Total	**7.7000e-004**	**9.6000e-004**	**9.7500e-003**	**4.0000e-005**	**3.6500e-003**	**3.0000e-005**	**3.6800e-003**	**9.7000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.5623**	**2.5623**	**9.0000e-005**	**0.0000**	**2.5642**

3.11 Years 5-10: Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.4566					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1500e-003	0.0412	0.0651	1.1000e-004		1.8500e-003	1.8500e-003		1.8500e-003	1.8500e-003	0.0000	9.1917	9.1917	5.0000e-004	0.0000	9.2022
Total	**2.4627**	**0.0412**	**0.0651**	**1.1000e-004**		**1.8500e-003**	**1.8500e-003**		**1.8500e-003**	**1.8500e-003**	**0.0000**	**9.1917**	**9.1917**	**5.0000e-004**	**0.0000**	**9.2022**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.6400e-003	9.5300e-003	0.0966	4.3000e-004	0.0362	2.5000e-004	0.0364	9.6300e-003	2.3000e-004	9.8600e-003	0.0000	25.3911	25.3911	9.3000e-004	0.0000	25.4107
Total	**7.6400e-003**	**9.5300e-003**	**0.0966**	**4.3000e-004**	**0.0362**	**2.5000e-004**	**0.0364**	**9.6300e-003**	**2.3000e-004**	**9.8600e-003**	**0.0000**	**25.3911**	**25.3911**	**9.3000e-004**	**0.0000**	**25.4107**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.4566					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1400e-003	0.0489	0.0660	1.1000e-004		3.4200e-003	3.4200e-003		3.4200e-003	3.4200e-003	0.0000	9.1917	9.1917	5.0000e-004	0.0000	9.2022

Total	**2.4587**	**0.0489**	**0.0660**	**1.1000e-004**		**3.4200e-003**	**3.4200e-003**		**3.4200e-003**	**3.4200e-003**	**0.0000**	**9.1917**	**9.1917**	**5.0000e-004**	**0.0000**	**9.2022**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.6400e-003	9.5300e-003	0.0966	4.3000e-004	0.0362	2.5000e-004	0.0364	9.6300e-003	2.3000e-004	9.8600e-003	0.0000	25.3911	25.3911	9.3000e-004	0.0000	25.4107
Total	**7.6400e-003**	**9.5300e-003**	**0.0966**	**4.3000e-004**	**0.0362**	**2.5000e-004**	**0.0364**	**9.6300e-003**	**2.3000e-004**	**9.8600e-003**	**0.0000**	**25.3911**	**25.3911**	**9.3000e-004**	**0.0000**	**25.4107**

3.12 Years 10-30: Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4363	0.0000	1.4363	0.7895	0.0000	0.7895	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1593	1.4939	1.5804	2.4900e-003		0.0654	0.0654		0.0601	0.0601	0.0000	218.5488	218.5488	0.0707	0.0000	220.0332
Total	**0.1593**	**1.4939**	**1.5804**	**2.4900e-003**	**1.4363**	**0.0654**	**1.5016**	**0.7895**	**0.0601**	**0.8496**	**0.0000**	**218.5488**	**218.5488**	**0.0707**	**0.0000**	**220.0332**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8900e-003	2.3600e-003	0.0240	1.1000e-004	0.1538	6.0000e-005	0.1538	0.0168	6.0000e-005	0.0169	0.0000	6.2982	6.2982	2.3000e-004	0.0000	6.3030

Total	**1.8900e-003**	**2.3600e-003**	**0.0240**	**1.1000e-004**	**0.1538**	**6.0000e-005**	**0.1538**	**0.0168**	**6.0000e-005**	**0.0169**	**0.0000**	**6.2982**	**6.2982**	**2.3000e-004**	**0.0000**	**6.3030**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4847	0.0000	0.4847	0.2665	0.0000	0.2665	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0604	1.2356	1.4859	2.4900e-003		0.0610	0.0610		0.0610	0.0610	0.0000	218.5486	218.5486	0.0707	0.0000	220.0329
Total	**0.0604**	**1.2356**	**1.4859**	**2.4900e-003**	**0.4847**	**0.0610**	**0.5458**	**0.2665**	**0.0610**	**0.3275**	**0.0000**	**218.5486**	**218.5486**	**0.0707**	**0.0000**	**220.0329**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8900e-003	2.3600e-003	0.0240	1.1000e-004	0.0319	6.0000e-005	0.0319	4.6500e-003	6.0000e-005	4.7100e-003	0.0000	6.2982	6.2982	2.3000e-004	0.0000	6.3030
Total	**1.8900e-003**	**2.3600e-003**	**0.0240**	**1.1000e-004**	**0.0319**	**6.0000e-005**	**0.0319**	**4.6500e-003**	**6.0000e-005**	**4.7100e-003**	**0.0000**	**6.2982**	**6.2982**	**2.3000e-004**	**0.0000**	**6.3030**

3.12 Years 10-30: Site Preparation - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4363	0.0000	1.4363	0.7895	0.0000	0.7895	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0401	0.3764	0.3982	6.3000e-004		0.0165	0.0165		0.0152	0.0152	0.0000	55.0674	55.0674	0.0178	0.0000	55.4414

Total	**0.0401**	**0.3764**	**0.3982**	**6.3000e-004**	**1.4363**	**0.0165**	**1.4527**	**0.7895**	**0.0152**	**0.8046**	**0.0000**	**55.0674**	**55.0674**	**0.0178**	**0.0000**	**55.4414**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	5.7000e-004	5.8400e-003	3.0000e-005	0.0387	2.0000e-005	0.0388	4.2400e-003	1.0000e-005	4.2500e-003	0.0000	1.5716	1.5716	6.0000e-005	0.0000	1.5728
Total	**4.6000e-004**	**5.7000e-004**	**5.8400e-003**	**3.0000e-005**	**0.0387**	**2.0000e-005**	**0.0388**	**4.2400e-003**	**1.0000e-005**	**4.2500e-003**	**0.0000**	**1.5716**	**1.5716**	**6.0000e-005**	**0.0000**	**1.5728**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4847	0.0000	0.4847	0.2665	0.0000	0.2665	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0152	0.3113	0.3744	6.3000e-004		0.0154	0.0154		0.0154	0.0154	0.0000	55.0674	55.0674	0.0178	0.0000	55.4414
Total	**0.0152**	**0.3113**	**0.3744**	**6.3000e-004**	**0.4847**	**0.0154**	**0.5001**	**0.2665**	**0.0154**	**0.2818**	**0.0000**	**55.0674**	**55.0674**	**0.0178**	**0.0000**	**55.4414**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	5.7000e-004	5.8400e-003	3.0000e-005	8.0300e-003	2.0000e-005	8.0500e-003	1.1700e-003	1.0000e-005	1.1900e-003	0.0000	1.5716	1.5716	6.0000e-005	0.0000	1.5728

Total	**4.6000e-004**	**5.7000e-004**	**5.8400e-003**	**3.0000e-005**	**8.0300e-003**	**2.0000e-005**	**8.0500e-003**	**1.1700e-003**	**1.0000e-005**	**1.1900e-003**	**0.0000**	**1.5716**	**1.5716**	**6.0000e-005**	**0.0000**	**1.5728**

3.13 Years 10-30: Grading - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3077	0.0000	1.3077	0.6838	0.0000	0.6838	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3438	3.1213	3.5898	7.0800e-003		0.1359	0.1359		0.1250	0.1250	0.0000	621.4028	621.4028	0.2010	0.0000	625.6233
Total	**0.3438**	**3.1213**	**3.5898**	**7.0800e-003**	**1.3077**	**0.1359**	**1.4435**	**0.6838**	**0.1250**	**0.8088**	**0.0000**	**621.4028**	**621.4028**	**0.2010**	**0.0000**	**625.6233**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6600e-003	4.5600e-003	0.0464	2.1000e-004	0.3080	1.3000e-004	0.3082	0.0337	1.2000e-004	0.0338	0.0000	12.4962	12.4962	4.5000e-004	0.0000	12.5057
Total	**3.6600e-003**	**4.5600e-003**	**0.0464**	**2.1000e-004**	**0.3080**	**1.3000e-004**	**0.3082**	**0.0337**	**1.2000e-004**	**0.0338**	**0.0000**	**12.4962**	**12.4962**	**4.5000e-004**	**0.0000**	**12.5057**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4413	0.0000	0.4413	0.2308	0.0000	0.2308	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1732	3.4098	4.3445	7.0800e-003		0.1515	0.1515		0.1515	0.1515	0.0000	621.4021	621.4021	0.2010	0.0000	625.6226

Total	**0.1732**	**3.4098**	**4.3445**	**7.0800e-003**	**0.4413**	**0.1515**	**0.5929**	**0.2308**	**0.1515**	**0.3823**	**0.0000**	**621.4021**	**621.4021**	**0.2010**	**0.0000**	**625.6226**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6600e-003	4.5600e-003	0.0464	2.1000e-004	0.0639	1.3000e-004	0.0640	9.3200e-003	1.2000e-004	9.4400e-003	0.0000	12.4962	12.4962	4.5000e-004	0.0000	12.5057
Total	**3.6600e-003**	**4.5600e-003**	**0.0464**	**2.1000e-004**	**0.0639**	**1.3000e-004**	**0.0640**	**9.3200e-003**	**1.2000e-004**	**9.4400e-003**	**0.0000**	**12.4962**	**12.4962**	**4.5000e-004**	**0.0000**	**12.5057**

3.13 Years 10-30: Grading - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3077	0.0000	1.3077	0.6838	0.0000	0.6838	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2687	2.4398	2.8060	5.5300e-003		0.1062	0.1062		0.0977	0.0977	0.0000	485.7254	485.7254	0.1571	0.0000	489.0243
Total	**0.2687**	**2.4398**	**2.8060**	**5.5300e-003**	**1.3077**	**0.1062**	**1.4139**	**0.6838**	**0.0977**	**0.7815**	**0.0000**	**485.7254**	**485.7254**	**0.1571**	**0.0000**	**489.0243**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7600e-003	3.4500e-003	0.0352	1.7000e-004	0.2408	1.0000e-004	0.2409	0.0264	9.0000e-005	0.0264	0.0000	9.6850	9.6850	3.5000e-004	0.0000	9.6923

Total	**2.7600e-003**	**3.4500e-003**	**0.0352**	**1.7000e-004**	**0.2408**	**1.0000e-004**	**0.2409**	**0.0264**	**9.0000e-005**	**0.0264**	**0.0000**	**9.6850**	**9.6850**	**3.5000e-004**	**0.0000**	**9.6923**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4413	0.0000	0.4413	0.2308	0.0000	0.2308	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1354	2.6653	3.3959	5.5300e-003		0.1184	0.1184		0.1184	0.1184	0.0000	485.7248	485.7248	0.1571	0.0000	489.0237
Total	**0.1354**	**2.6653**	**3.3959**	**5.5300e-003**	**0.4413**	**0.1184**	**0.5598**	**0.2308**	**0.1184**	**0.3492**	**0.0000**	**485.7248**	**485.7248**	**0.1571**	**0.0000**	**489.0237**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7600e-003	3.4500e-003	0.0352	1.7000e-004	0.0499	1.0000e-004	0.0500	7.2900e-003	9.0000e-005	7.3800e-003	0.0000	9.6850	9.6850	3.5000e-004	0.0000	9.6923
Total	**2.7600e-003**	**3.4500e-003**	**0.0352**	**1.7000e-004**	**0.0499**	**1.0000e-004**	**0.0500**	**7.2900e-003**	**9.0000e-005**	**7.3800e-003**	**0.0000**	**9.6850**	**9.6850**	**3.5000e-004**	**0.0000**	**9.6923**

3.14 Years 10-30: Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0558	0.5088	0.6581	1.1000e-003		0.0215	0.0215		0.0203	0.0203	0.0000	94.6933	94.6933	0.0222	0.0000	95.1600
Total	**0.0558**	**0.5088**	**0.6581**	**1.1000e-003**		**0.0215**	**0.0215**		**0.0203**	**0.0203**	**0.0000**	**94.6933**	**94.6933**	**0.0222**	**0.0000**	**95.1600**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1106	0.6125	1.5935	3.8200e-003	2.8769	0.0136	2.8905	0.3063	0.0125	0.3188	0.0000	324.5709	324.5709	2.3000e-003	0.0000	324.6192
Worker	0.0639	0.0799	0.8150	3.8300e-003	5.5812	2.3200e-003	5.5835	0.6107	2.1600e-003	0.6129	0.0000	224.4966	224.4966	8.0300e-003	0.0000	224.6653
Total	**0.1745**	**0.6925**	**2.4085**	**7.6500e-003**	**8.4581**	**0.0159**	**8.4740**	**0.9170**	**0.0147**	**0.9317**	**0.0000**	**549.0675**	**549.0675**	**0.0103**	**0.0000**	**549.2845**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0275	0.5811	0.7304	1.1000e-003		0.0370	0.0370		0.0370	0.0370	0.0000	94.6932	94.6932	0.0222	0.0000	95.1599
Total	**0.0275**	**0.5811**	**0.7304**	**1.1000e-003**		**0.0370**	**0.0370**		**0.0370**	**0.0370**	**0.0000**	**94.6932**	**94.6932**	**0.0222**	**0.0000**	**95.1599**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1106	0.6125	1.5935	3.8200e-003	0.5425	0.0136	0.5561	0.0732	0.0125	0.0857	0.0000	324.5709	324.5709	2.3000e-003	0.0000	324.6192
Worker	0.0639	0.0799	0.8150	3.8300e-003	1.1570	2.3200e-003	1.1593	0.1689	2.1600e-003	0.1711	0.0000	224.4966	224.4966	8.0300e-003	0.0000	224.6653

Total	**0.1745**	**0.6925**	**2.4085**	**7.6500e-003**	**1.6994**	**0.0159**	**1.7153**	**0.2421**	**0.0147**	**0.2568**	**0.0000**	**549.0675**	**549.0675**	**0.0103**	**0.0000**	**549.2845**

3.14 Years 10-30: Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1770	1.6133	2.0867	3.4900e-003		0.0683	0.0683		0.0642	0.0642	0.0000	300.2471	300.2471	0.0705	0.0000	301.7269
Total	**0.1770**	**1.6133**	**2.0867**	**3.4900e-003**		**0.0683**	**0.0683**		**0.0642**	**0.0642**	**0.0000**	**300.2471**	**300.2471**	**0.0705**	**0.0000**	**301.7269**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3481	1.9250	5.0042	0.0121	9.1219	0.0431	9.1650	0.9713	0.0396	1.0109	0.0000	1,029.2154	1,029.2154	7.2900e-003	0.0000	1,029.3685
Worker	0.1959	0.2456	2.5122	0.0121	17.6964	7.4500e-003	17.7039	1.9363	6.9100e-003	1.9433	0.0000	706.6123	706.6123	0.0250	0.0000	707.1367
Total	**0.5440**	**2.1706**	**7.5164**	**0.0243**	**26.8183**	**0.0505**	**26.8689**	**2.9076**	**0.0465**	**2.9542**	**0.0000**	**1,735.8277**	**1,735.8277**	**0.0323**	**0.0000**	**1,736.5052**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0873	1.8426	2.3160	3.4900e-003		0.1172	0.1172		0.1172	0.1172	0.0000	300.2467	300.2467	0.0705	0.0000	301.7266
Total	**0.0873**	**1.8426**	**2.3160**	**3.4900e-003**		**0.1172**	**0.1172**		**0.1172**	**0.1172**	**0.0000**	**300.2467**	**300.2467**	**0.0705**	**0.0000**	**301.7266**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3481	1.9250	5.0042	0.0121	1.7200	0.0431	1.7631	0.2322	0.0396	0.2718	0.0000	1,029.2154	1,029.2154	7.2900e-003	0.0000	1,029.3685
Worker	0.1959	0.2456	2.5122	0.0121	3.6684	7.4500e-003	3.6759	0.5356	6.9100e-003	0.5425	0.0000	706.6123	706.6123	0.0250	0.0000	707.1367
Total	**0.5440**	**2.1706**	**7.5164**	**0.0243**	**5.3885**	**0.0505**	**5.4390**	**0.7677**	**0.0465**	**0.8143**	**0.0000**	**1,735.8277**	**1,735.8277**	**0.0323**	**0.0000**	**1,736.5052**

3.14 Years 10-30: Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195	2.0948	3.5000e-003		0.0685	0.0685		0.0645	0.0645	0.0000	301.4019	301.4019	0.0707	0.0000	302.8874
Total	**0.1777**	**1.6195**	**2.0948**	**3.5000e-003**		**0.0685**	**0.0685**		**0.0645**	**0.0645**	**0.0000**	**301.4019**	**301.4019**	**0.0707**	**0.0000**	**302.8874**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3447	1.9180	4.9812	0.0122	9.1570	0.0432	9.2002	0.9750	0.0398	1.0148	0.0000	1,033.2531	1,033.2531	7.3200e-003	0.0000	1,033.4069
Worker	0.1898	0.2391	2.4538	0.0122	17.7645	7.5400e-003	17.7720	1.9438	6.9900e-003	1.9508	0.0000	704.8827	704.8827	0.0246	0.0000	705.3991

Total	**0.5345**	**2.1572**	**7.4350**	**0.0244**	**26.9215**	**0.0508**	**26.9723**	**2.9188**	**0.0468**	**2.9656**	**0.0000**	**1,738.1358**	**1,738.1358**	**0.0319**	**0.0000**	**1,738.8060**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0876	1.8497	2.3249	3.5000e-003		0.1177	0.1177		0.1177	0.1177	0.0000	301.4015	301.4015	0.0707	0.0000	302.8871
Total	**0.0876**	**1.8497**	**2.3249**	**3.5000e-003**		**0.1177**	**0.1177**		**0.1177**	**0.1177**	**0.0000**	**301.4015**	**301.4015**	**0.0707**	**0.0000**	**302.8871**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3447	1.9180	4.9812	0.0122	1.7267	0.0432	1.7699	0.2331	0.0398	0.2728	0.0000	1,033.2531	1,033.2531	7.3200e-003	0.0000	1,033.4069
Worker	0.1898	0.2391	2.4538	0.0122	3.6825	7.5400e-003	3.6901	0.5376	6.9900e-003	0.5446	0.0000	704.8827	704.8827	0.0246	0.0000	705.3991
Total	**0.5345**	**2.1572**	**7.4350**	**0.0244**	**5.4092**	**0.0508**	**5.4600**	**0.7707**	**0.0468**	**0.8175**	**0.0000**	**1,738.1358**	**1,738.1358**	**0.0319**	**0.0000**	**1,738.8060**

3.14 Years 10-30: Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0333	2.1051	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.5281	341.5281	0.0137	0.0000	341.8160
Total	**0.1702**	**1.0333**	**2.1051**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.5281**	**341.5281**	**0.0137**	**0.0000**	**341.8160**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3409	1.9024	4.9140	0.0122	9.1570	0.0432	9.2002	0.9750	0.0398	1.0148	0.0000	1,033.2786	1,033.2786	7.3200e-003	0.0000	1,033.4324
Worker	0.1832	0.2322	2.3941	0.0122	17.7645	7.5900e-003	17.7721	1.9438	7.0400e-003	1.9508	0.0000	701.1245	701.1245	0.0242	0.0000	701.6316
Total	**0.5241**	**2.1346**	**7.3081**	**0.0244**	**26.9215**	**0.0508**	**26.9723**	**2.9188**	**0.0468**	**2.9656**	**0.0000**	**1,734.4030**	**1,734.4030**	**0.0315**	**0.0000**	**1,735.0640**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0876	1.8497	2.3249	4.0200e-003		0.1177	0.1177		0.1177	0.1177	0.0000	341.5277	341.5277	0.0137	0.0000	341.8156
Total	**0.0876**	**1.8497**	**2.3249**	**4.0200e-003**		**0.1177**	**0.1177**		**0.1177**	**0.1177**	**0.0000**	**341.5277**	**341.5277**	**0.0137**	**0.0000**	**341.8156**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3409	1.9024	4.9140	0.0122	1.7267	0.0432	1.7699	0.2331	0.0398	0.2728	0.0000	1,033.2786	1,033.2786	7.3200e-003	0.0000	1,033.4324
Worker	0.1832	0.2322	2.3941	0.0122	3.6825	7.5900e-003	3.6901	0.5376	7.0400e-003	0.5447	0.0000	701.1245	701.1245	0.0242	0.0000	701.6316

Total	**0.5241**	**2.1346**	**7.3081**	**0.0244**	**5.4092**	**0.0508**	**5.4600**	**0.7707**	**0.0468**	**0.8175**	**0.0000**	**1,734.4030**	**1,734.4030**	**0.0315**	**0.0000**	**1,735.0640**

3.14 Years 10-30: Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0333	2.1051	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.5281	341.5281	0.0137	0.0000	341.8160
Total	**0.1702**	**1.0333**	**2.1051**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.5281**	**341.5281**	**0.0137**	**0.0000**	**341.8160**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3370	1.8914	4.8889	0.0122	9.1571	0.0432	9.2003	0.9751	0.0398	1.0148	0.0000	1,033.4316	1,033.4316	7.3300e-003	0.0000	1,033.5856
Worker	0.1760	0.2258	2.3406	0.0122	17.7645	7.6200e-003	17.7721	1.9438	7.0700e-003	1.9509	0.0000	698.0060	698.0060	0.0238	0.0000	698.5048
Total	**0.5130**	**2.1172**	**7.2295**	**0.0244**	**26.9215**	**0.0509**	**26.9724**	**2.9188**	**0.0469**	**2.9657**	**0.0000**	**1,731.4376**	**1,731.4376**	**0.0311**	**0.0000**	**1,732.0904**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0876	1.8497	2.3249	4.0200e-003		0.1177	0.1177		0.1177	0.1177	0.0000	341.5277	341.5277	0.0137	0.0000	341.8156
Total	**0.0876**	**1.8497**	**2.3249**	**4.0200e-003**		**0.1177**	**0.1177**		**0.1177**	**0.1177**	**0.0000**	**341.5277**	**341.5277**	**0.0137**	**0.0000**	**341.8156**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3370	1.8914	4.8889	0.0122	1.7267	0.0432	1.7700	0.2331	0.0398	0.2729	0.0000	1,033.4316	1,033.4316	7.3300e-003	0.0000	1,033.5856
Worker	0.1760	0.2258	2.3406	0.0122	3.6825	7.6200e-003	3.6902	0.5376	7.0700e-003	0.5447	0.0000	698.0060	698.0060	0.0238	0.0000	698.5048
Total	**0.5130**	**2.1172**	**7.2295**	**0.0244**	**5.4092**	**0.0509**	**5.4601**	**0.7707**	**0.0469**	**0.8176**	**0.0000**	**1,731.4376**	**1,731.4376**	**0.0311**	**0.0000**	**1,732.0904**

3.14 Years 10-30: Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1708	1.0372	2.1132	4.0400e-003		0.0193	0.0193		0.0193	0.0193	0.0000	342.8367	342.8367	0.0138	0.0000	343.1257
Total	**0.1708**	**1.0372**	**2.1132**	**4.0400e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**342.8367**	**342.8367**	**0.0138**	**0.0000**	**343.1257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3310	1.8844	4.8713	0.0122	9.1922	0.0434	9.2356	0.9788	0.0400	1.0187	0.0000	1,037.4928	1,037.4928	7.3600e-003	0.0000	1,037.6474
Worker	0.1706	0.2213	2.3049	0.0122	17.8326	7.6800e-003	17.8402	1.9512	7.1200e-003	1.9584	0.0000	698.0910	698.0910	0.0235	0.0000	698.5846

Total	**0.5016**	**2.1057**	**7.1762**	**0.0245**	**27.0247**	**0.0511**	**27.0758**	**2.9300**	**0.0471**	**2.9771**	**0.0000**	**1,735.5838**	**1,735.5838**	**0.0309**	**0.0000**	**1,736.2320**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0879	1.8568	2.3338	4.0400e-003		0.1181	0.1181		0.1181	0.1181	0.0000	342.8363	342.8363	0.0138	0.0000	343.1252
Total	**0.0879**	**1.8568**	**2.3338**	**4.0400e-003**		**0.1181**	**0.1181**		**0.1181**	**0.1181**	**0.0000**	**342.8363**	**342.8363**	**0.0138**	**0.0000**	**343.1252**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3310	1.8844	4.8713	0.0122	1.7334	0.0434	1.7768	0.2340	0.0400	0.2739	0.0000	1,037.4928	1,037.4928	7.3600e-003	0.0000	1,037.6474
Worker	0.1706	0.2213	2.3049	0.0122	3.6966	7.6800e-003	3.7043	0.5397	7.1200e-003	0.5468	0.0000	698.0910	698.0910	0.0235	0.0000	698.5846
Total	**0.5016**	**2.1057**	**7.1762**	**0.0245**	**5.4300**	**0.0511**	**5.4811**	**0.7737**	**0.0471**	**0.8207**	**0.0000**	**1,735.5838**	**1,735.5838**	**0.0309**	**0.0000**	**1,736.2320**

3.14 Years 10-30: Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1695	1.0293	2.0971	4.0100e-003		0.0192	0.0192		0.0192	0.0192	0.0000	340.2196	340.2196	0.0137	0.0000	340.5064
Total	**0.1695**	**1.0293**	**2.0971**	**4.0100e-003**		**0.0192**	**0.0192**		**0.0192**	**0.0192**	**0.0000**	**340.2196**	**340.2196**	**0.0137**	**0.0000**	**340.5064**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3232	1.8573	4.7954	0.0121	9.1220	0.0431	9.1651	0.9713	0.0397	1.0110	0.0000	1,029.6889	1,029.6889	7.3100e-003	0.0000	1,029.8425
Worker	0.1641	0.2152	2.2509	0.0121	17.6964	7.6400e-003	17.7041	1.9363	7.0900e-003	1.9434	0.0000	690.6486	690.6486	0.0230	0.0000	691.1323
Total	**0.4873**	**2.0725**	**7.0463**	**0.0243**	**26.8184**	**0.0507**	**26.8692**	**2.9077**	**0.0467**	**2.9544**	**0.0000**	**1,720.3375**	**1,720.3375**	**0.0303**	**0.0000**	**1,720.9748**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0873	1.8426	2.3160	4.0100e-003		0.1172	0.1172		0.1172	0.1172	0.0000	340.2192	340.2192	0.0137	0.0000	340.5060
Total	**0.0873**	**1.8426**	**2.3160**	**4.0100e-003**		**0.1172**	**0.1172**		**0.1172**	**0.1172**	**0.0000**	**340.2192**	**340.2192**	**0.0137**	**0.0000**	**340.5060**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3232	1.8573	4.7954	0.0121	1.7202	0.0431	1.7633	0.2322	0.0397	0.2719	0.0000	1,029.6889	1,029.6889	7.3100e-003	0.0000	1,029.8425
Worker	0.1641	0.2152	2.2509	0.0121	3.6684	7.6400e-003	3.6761	0.5356	7.0900e-003	0.5427	0.0000	690.6486	690.6486	0.0230	0.0000	691.1323

Total	**0.4873**	**2.0725**	**7.0463**	**0.0243**	**5.3886**	**0.0507**	**5.4393**	**0.7678**	**0.0467**	**0.8145**	**0.0000**	**1,720.3375**	**1,720.3375**	**0.0303**	**0.0000**	**1,720.9748**

3.14 Years 10-30: Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1695	1.0293	2.0971	4.0100e-003		0.0192	0.0192		0.0192	0.0192	0.0000	340.2196	340.2196	0.0137	0.0000	340.5064
Total	**0.1695**	**1.0293**	**2.0971**	**4.0100e-003**		**0.0192**	**0.0192**		**0.0192**	**0.0192**	**0.0000**	**340.2196**	**340.2196**	**0.0137**	**0.0000**	**340.5064**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3200	1.8476	4.7680	0.0121	9.1220	0.0431	9.1651	0.9713	0.0397	1.0110	0.0000	1,029.7597	1,029.7597	7.3200e-003	0.0000	1,029.9134
Worker	0.1596	0.2114	2.2164	0.0121	17.6964	7.6600e-003	17.7041	1.9363	7.1000e-003	1.9434	0.0000	688.8854	688.8854	0.0228	0.0000	689.3634
Total	**0.4796**	**2.0590**	**6.9844**	**0.0243**	**26.8185**	**0.0508**	**26.8692**	**2.9077**	**0.0468**	**2.9544**	**0.0000**	**1,718.6451**	**1,718.6451**	**0.0301**	**0.0000**	**1,719.2768**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0873	1.8426	2.3160	4.0100e-003		0.1172	0.1172		0.1172	0.1172	0.0000	340.2192	340.2192	0.0137	0.0000	340.5060
Total	**0.0873**	**1.8426**	**2.3160**	**4.0100e-003**		**0.1172**	**0.1172**		**0.1172**	**0.1172**	**0.0000**	**340.2192**	**340.2192**	**0.0137**	**0.0000**	**340.5060**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3200	1.8476	4.7680	0.0121	1.7202	0.0431	1.7633	0.2322	0.0397	0.2719	0.0000	1,029.7597	1,029.7597	7.3200e-003	0.0000	1,029.9134
Worker	0.1596	0.2114	2.2164	0.0121	3.6684	7.6600e-003	3.6761	0.5356	7.1000e-003	0.5427	0.0000	688.8854	688.8854	0.0228	0.0000	689.3634
Total	**0.4796**	**2.0590**	**6.9844**	**0.0243**	**5.3886**	**0.0508**	**5.4393**	**0.7678**	**0.0468**	**0.8145**	**0.0000**	**1,718.6451**	**1,718.6451**	**0.0301**	**0.0000**	**1,719.2768**

3.14 Years 10-30: Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1582	0.9332	2.1000	4.0200e-003		0.0118	0.0118		0.0118	0.0118	0.0000	341.5281	341.5281	0.0127	0.0000	341.7954
Total	**0.1582**	**0.9332**	**2.1000**	**4.0200e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**341.5281**	**341.5281**	**0.0127**	**0.0000**	**341.7954**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3171	1.8472	4.7590	0.0122	9.1571	0.0433	9.2004	0.9751	0.0398	1.0149	0.0000	1,033.8137	1,033.8137	7.3500e-003	0.0000	1,033.9680
Worker	0.1563	0.2093	2.1953	0.0122	17.7645	7.6900e-003	17.7722	1.9438	7.1400e-003	1.9509	0.0000	690.0802	690.0802	0.0226	0.0000	690.5551

Total	**0.4734**	**2.0565**	**6.9543**	**0.0244**	**26.9216**	**0.0509**	**26.9726**	**2.9189**	**0.0469**	**2.9658**	**0.0000**	**1,723.8939**	**1,723.8939**	**0.0300**	**0.0000**	**1,724.5230**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0876	1.8497	2.3249	4.0200e-003		0.1177	0.1177		0.1177	0.1177	0.0000	341.5277	341.5277	0.0127	0.0000	341.7950
Total	**0.0876**	**1.8497**	**2.3249**	**4.0200e-003**		**0.1177**	**0.1177**		**0.1177**	**0.1177**	**0.0000**	**341.5277**	**341.5277**	**0.0127**	**0.0000**	**341.7950**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3171	1.8472	4.7590	0.0122	1.7268	0.0433	1.7701	0.2331	0.0398	0.2729	0.0000	1,033.8137	1,033.8137	7.3500e-003	0.0000	1,033.9680
Worker	0.1563	0.2093	2.1953	0.0122	3.6825	7.6900e-003	3.6902	0.5376	7.1400e-003	0.5448	0.0000	690.0802	690.0802	0.0226	0.0000	690.5551
Total	**0.4734**	**2.0565**	**6.9543**	**0.0244**	**5.4093**	**0.0509**	**5.4603**	**0.7707**	**0.0469**	**0.8177**	**0.0000**	**1,723.8939**	**1,723.8939**	**0.0300**	**0.0000**	**1,724.5230**

3.14 Years 10-30: Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9368	2.1081	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	342.8367	342.8367	0.0128	0.0000	343.1050
Total	**0.1588**	**0.9368**	**2.1081**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**342.8367**	**342.8367**	**0.0128**	**0.0000**	**343.1050**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					9.0971	0.0000	9.0971	0.9416	0.0000	0.9416	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					17.6900	0.0000	17.6900	1.8947	0.0000	1.8947	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**26.7870**	**0.0000**	**26.7870**	**2.8362**	**0.0000**	**2.8362**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0879	1.8568	2.3338	4.0400e-003		0.1181	0.1181		0.1181	0.1181	0.0000	342.8363	342.8363	0.0128	0.0000	343.1046
Total	**0.0879**	**1.8568**	**2.3338**	**4.0400e-003**		**0.1181**	**0.1181**		**0.1181**	**0.1181**	**0.0000**	**342.8363**	**342.8363**	**0.0128**	**0.0000**	**343.1046**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					1.6383	0.0000	1.6383	0.1967	0.0000	0.1967	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					3.5541	0.0000	3.5541	0.4831	0.0000	0.4831	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total					**5.1923**	**0.0000**	**5.1923**	**0.6799**	**0.0000**	**0.6799**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.14 Years 10-30: Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1582	0.9332	2.1000	4.0200e-003		0.0118	0.0118		0.0118	0.0118	0.0000	341.5281	341.5281	0.0127	0.0000	341.7954
Total	**0.1582**	**0.9332**	**2.1000**	**4.0200e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**341.5281**	**341.5281**	**0.0127**	**0.0000**	**341.7954**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					9.0623	0.0000	9.0623	0.9380	0.0000	0.9380	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					17.6225	0.0000	17.6225	1.8875	0.0000	1.8875	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**26.6848**	**0.0000**	**26.6848**	**2.8254**	**0.0000**	**2.8254**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0876	1.8497	2.3249	4.0200e-003		0.1177	0.1177		0.1177	0.1177	0.0000	341.5277	341.5277	0.0127	0.0000	341.7950
Total	**0.0876**	**1.8497**	**2.3249**	**4.0200e-003**		**0.1177**	**0.1177**		**0.1177**	**0.1177**	**0.0000**	**341.5277**	**341.5277**	**0.0127**	**0.0000**	**341.7950**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					1.6320	0.0000	1.6320	0.1960	0.0000	0.1960	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					3.5405	0.0000	3.5405	0.4813	0.0000	0.4813	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**5.1725**	**0.0000**	**5.1725**	**0.6773**	**0.0000**	**0.6773**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.14 Years 10-30: Building Construction - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1582	0.9332	2.1000	4.0200e-003		0.0118	0.0118		0.0118	0.0118	0.0000	341.5281	341.5281	0.0127	0.0000	341.7954
Total	**0.1582**	**0.9332**	**2.1000**	**4.0200e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**341.5281**	**341.5281**	**0.0127**	**0.0000**	**341.7954**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					9.0623	0.0000	9.0623	0.9380	0.0000	0.9380	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					17.6225	0.0000	17.6225	1.8875	0.0000	1.8875	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total					**26.6848**	**0.0000**	**26.6848**	**2.8254**	**0.0000**	**2.8254**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0876	1.8497	2.3249	4.0200e-003		0.1177	0.1177		0.1177	0.1177	0.0000	341.5277	341.5277	0.0127	0.0000	341.7950
Total	**0.0876**	**1.8497**	**2.3249**	**4.0200e-003**		**0.1177**	**0.1177**		**0.1177**	**0.1177**	**0.0000**	**341.5277**	**341.5277**	**0.0127**	**0.0000**	**341.7950**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					1.6320	0.0000	1.6320	0.1960	0.0000	0.1960	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					3.5405	0.0000	3.5405	0.4813	0.0000	0.4813	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**5.1725**	**0.0000**	**5.1725**	**0.6773**	**0.0000**	**0.6773**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.14 Years 10-30: Building Construction - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1576	0.9296	2.0920	4.0100e-003		0.0117	0.0117		0.0117	0.0117	0.0000	340.2196	340.2196	0.0127	0.0000	340.4859
Total	**0.1576**	**0.9296**	**2.0920**	**4.0100e-003**		**0.0117**	**0.0117**		**0.0117**	**0.0117**	**0.0000**	**340.2196**	**340.2196**	**0.0127**	**0.0000**	**340.4859**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					9.0276	0.0000	9.0276	0.9344	0.0000	0.9344	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					17.5550	0.0000	17.5550	1.8802	0.0000	1.8802	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**26.5826**	**0.0000**	**26.5826**	**2.8146**	**0.0000**	**2.8146**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0873	1.8426	2.3160	4.0100e-003		0.1172	0.1172		0.1172	0.1172	0.0000	340.2192	340.2192	0.0127	0.0000	340.4855
Total	**0.0873**	**1.8426**	**2.3160**	**4.0100e-003**		**0.1172**	**0.1172**		**0.1172**	**0.1172**	**0.0000**	**340.2192**	**340.2192**	**0.0127**	**0.0000**	**340.4855**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					1.6258	0.0000	1.6258	0.1952	0.0000	0.1952	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					3.5269	0.0000	3.5269	0.4794	0.0000	0.4794	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total					**5.1527**	**0.0000**	**5.1527**	**0.6747**	**0.0000**	**0.6747**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.14 Years 10-30: Building Construction - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1556	0.8982	2.1001	4.0200e-003		9.5800e-003	9.5800e-003		9.5800e-003	9.5800e-003	0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
Total	**0.1556**	**0.8982**	**2.1001**	**4.0200e-003**		**9.5800e-003**	**9.5800e-003**		**9.5800e-003**	**9.5800e-003**	**0.0000**	**341.5282**	**341.5282**	**0.0123**	**0.0000**	**341.7861**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					9.0623	0.0000	9.0623	0.9380	0.0000	0.9380	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					17.6225	0.0000	17.6225	1.8875	0.0000	1.8875	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**26.6848**	**0.0000**	**26.6848**	**2.8254**	**0.0000**	**2.8254**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0876	1.8497	2.3249	4.0200e-003		0.1177	0.1177		0.1177	0.1177	0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
Total	**0.0876**	**1.8497**	**2.3249**	**4.0200e-003**		**0.1177**	**0.1177**		**0.1177**	**0.1177**	**0.0000**	**341.5278**	**341.5278**	**0.0123**	**0.0000**	**341.7857**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					1.6320	0.0000	1.6320	0.1960	0.0000	0.1960	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					3.5405	0.0000	3.5405	0.4813	0.0000	0.4813	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**5.1725**	**0.0000**	**5.1725**	**0.6773**	**0.0000**	**0.6773**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.14 Years 10-30: Building Construction - 2041

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1556	0.8982	2.1001	4.0200e-003		9.5800e-003	9.5800e-003		9.5800e-003	9.5800e-003	0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
Total	**0.1556**	**0.8982**	**2.1001**	**4.0200e-003**		**9.5800e-003**	**9.5800e-003**		**9.5800e-003**	**9.5800e-003**	**0.0000**	**341.5282**	**341.5282**	**0.0123**	**0.0000**	**341.7861**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					9.0623	0.0000	9.0623	0.9380	0.0000	0.9380	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					17.6225	0.0000	17.6225	1.8875	0.0000	1.8875	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total					**26.6848**	**0.0000**	**26.6848**	**2.8254**	**0.0000**	**2.8254**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0876	1.8497	2.3249	4.0200e-003		0.1177	0.1177		0.1177	0.1177	0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
Total	**0.0876**	**1.8497**	**2.3249**	**4.0200e-003**		**0.1177**	**0.1177**		**0.1177**	**0.1177**	**0.0000**	**341.5278**	**341.5278**	**0.0123**	**0.0000**	**341.7857**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					1.6320	0.0000	1.6320	0.1960	0.0000	0.1960	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					3.5405	0.0000	3.5405	0.4813	0.0000	0.4813	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**5.1725**	**0.0000**	**5.1725**	**0.6773**	**0.0000**	**0.6773**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.14 Years 10-30: Building Construction - 2042

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1556	0.8982	2.1001	4.0200e-003		9.5800e-003	9.5800e-003		9.5800e-003	9.5800e-003	0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
Total	**0.1556**	**0.8982**	**2.1001**	**4.0200e-003**		**9.5800e-003**	**9.5800e-003**		**9.5800e-003**	**9.5800e-003**	**0.0000**	**341.5282**	**341.5282**	**0.0123**	**0.0000**	**341.7861**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					9.0623	0.0000	9.0623	0.9380	0.0000	0.9380	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					17.6225	0.0000	17.6225	1.8875	0.0000	1.8875	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**26.6848**	**0.0000**	**26.6848**	**2.8254**	**0.0000**	**2.8254**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0876	1.8497	2.3249	4.0200e-003		0.1177	0.1177		0.1177	0.1177	0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
Total	**0.0876**	**1.8497**	**2.3249**	**4.0200e-003**		**0.1177**	**0.1177**		**0.1177**	**0.1177**	**0.0000**	**341.5278**	**341.5278**	**0.0123**	**0.0000**	**341.7857**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					1.6320	0.0000	1.6320	0.1960	0.0000	0.1960	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					3.5405	0.0000	3.5405	0.4813	0.0000	0.4813	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total					**5.1725**	**0.0000**	**5.1725**	**0.6773**	**0.0000**	**0.6773**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.14 Years 10-30: Building Construction - 2043

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0459	0.2650	0.6196	1.1900e-003		2.8300e-003	2.8300e-003		2.8300e-003	2.8300e-003	0.0000	100.7574	100.7574	3.6200e-003	0.0000	100.8335
Total	**0.0459**	**0.2650**	**0.6196**	**1.1900e-003**		**2.8300e-003**	**2.8300e-003**		**2.8300e-003**	**2.8300e-003**	**0.0000**	**100.7574**	**100.7574**	**3.6200e-003**	**0.0000**	**100.8335**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					2.6736	0.0000	2.6736	0.2767	0.0000	0.2767	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					5.1990	0.0000	5.1990	0.5568	0.0000	0.5568	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**7.8725**	**0.0000**	**7.8725**	**0.8336**	**0.0000**	**0.8336**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0258	0.5457	0.6859	1.1900e-003		0.0347	0.0347		0.0347	0.0347	0.0000	100.7572	100.7572	3.6200e-003	0.0000	100.8333
Total	**0.0258**	**0.5457**	**0.6859**	**1.1900e-003**		**0.0347**	**0.0347**		**0.0347**	**0.0347**	**0.0000**	**100.7572**	**100.7572**	**3.6200e-003**	**0.0000**	**100.8333**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.4815	0.0000	0.4815	0.0578	0.0000	0.0578	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					1.0445	0.0000	1.0445	0.1420	0.0000	0.1420	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**1.5260**	**0.0000**	**1.5260**	**0.1998**	**0.0000**	**0.1998**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.15 Years 10-30: Paving - 2043

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0911	0.3312	1.4249	2.5300e-003		0.0105	0.0105		0.0105	0.0105	0.0000	216.9975	216.9975	7.3000e-003	0.0000	217.1507
Paving	0.1254					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2165**	**0.3312**	**1.4249**	**2.5300e-003**		**0.0105**	**0.0105**		**0.0105**	**0.0105**	**0.0000**	**216.9975**	**216.9975**	**7.3000e-003**	**0.0000**	**217.1507**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					9.3500e-003	0.0000	9.3500e-003	2.3000e-003	0.0000	2.3000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total					**9.3500e-003**	**0.0000**	**9.3500e-003**	**2.3000e-003**	**0.0000**	**2.3000e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0505	1.0179	1.5573	2.5300e-003		0.0550	0.0550		0.0550	0.0550	0.0000	216.9972	216.9972	7.3000e-003	0.0000	217.1504
Paving	0.1254					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1759**	**1.0179**	**1.5573**	**2.5300e-003**		**0.0550**	**0.0550**		**0.0550**	**0.0550**	**0.0000**	**216.9972**	**216.9972**	**7.3000e-003**	**0.0000**	**217.1504**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					9.3500e-003	0.0000	9.3500e-003	2.3000e-003	0.0000	2.3000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**9.3500e-003**	**0.0000**	**9.3500e-003**	**2.3000e-003**	**0.0000**	**2.3000e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.15 Years 10-30: Paving - 2044

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0525	0.1908	0.8209	1.4500e-003		6.0300e-003	6.0300e-003		6.0300e-003	6.0300e-003	0.0000	125.0094	125.0094	4.2000e-003	0.0000	125.0977
Paving	0.0722					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.1247**	**0.1908**	**0.8209**	**1.4500e-003**		**6.0300e-003**	**6.0300e-003**		**6.0300e-003**	**6.0300e-003**	**0.0000**	**125.0094**	**125.0094**	**4.2000e-003**	**0.0000**	**125.0977**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					5.3900e-003	0.0000	5.3900e-003	1.3200e-003	0.0000	1.3200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**5.3900e-003**	**0.0000**	**5.3900e-003**	**1.3200e-003**	**0.0000**	**1.3200e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0291	0.5864	0.8972	1.4500e-003		0.0317	0.0317		0.0317	0.0317	0.0000	125.0093	125.0093	4.2000e-003	0.0000	125.0975
Paving	0.0722					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1013**	**0.5864**	**0.8972**	**1.4500e-003**		**0.0317**	**0.0317**		**0.0317**	**0.0317**	**0.0000**	**125.0093**	**125.0093**	**4.2000e-003**	**0.0000**	**125.0975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					5.3900e-003	0.0000	5.3900e-003	1.3200e-003	0.0000	1.3200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total					**5.3900e-003**	**0.0000**	**5.3900e-003**	**1.3200e-003**	**0.0000**	**1.3200e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.16 Years 10-30: Architectural Coating - 2044

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.5327					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.9000e-003	0.0563	0.1389	2.3000e-004		5.8000e-004	5.8000e-004		5.8000e-004	5.8000e-004	0.0000	19.7877	19.7877	7.0000e-004	0.0000	19.8023
Total	**3.5416**	**0.0563**	**0.1389**	**2.3000e-004**		**5.8000e-004**	**5.8000e-004**		**5.8000e-004**	**5.8000e-004**	**0.0000**	**19.7877**	**19.7877**	**7.0000e-004**	**0.0000**	**19.8023**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.1061	0.0000	0.1061	0.0260	0.0000	0.0260	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.1061**	**0.0000**	**0.1061**	**0.0260**	**0.0000**	**0.0260**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.5327					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6100e-003	0.1052	0.1420	2.3000e-004		7.3700e-003	7.3700e-003		7.3700e-003	7.3700e-003	0.0000	19.7877	19.7877	7.0000e-004	0.0000	19.8023

Total	**3.5373**	**0.1052**	**0.1420**	**2.3000e-004**		**7.3700e-003**	**7.3700e-003**		**7.3700e-003**	**7.3700e-003**	**0.0000**	**19.7877**	**19.7877**	**7.0000e-004**	**0.0000**	**19.8023**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.1061	0.0000	0.1061	0.0260	0.0000	0.0260	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.1061**	**0.0000**	**0.1061**	**0.0260**	**0.0000**	**0.0260**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.16 Years 10-30: Architectural Coating - 2045

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.0768					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.7600e-003	0.0491	0.1210	2.0000e-004		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	17.2345	17.2345	6.1000e-004	0.0000	17.2472
Total	**3.0846**	**0.0491**	**0.1210**	**2.0000e-004**		**5.0000e-004**	**5.0000e-004**		**5.0000e-004**	**5.0000e-004**	**0.0000**	**17.2345**	**17.2345**	**6.1000e-004**	**0.0000**	**17.2472**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.0924	0.0000	0.0924	0.0227	0.0000	0.0227	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total					**0.0924**	**0.0000**	**0.0924**	**0.0227**	**0.0000**	**0.0227**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.0768					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0100e-003	0.0916	0.1237	2.0000e-004		6.4200e-003	6.4200e-003		6.4200e-003	6.4200e-003	0.0000	17.2344	17.2344	6.1000e-004	0.0000	17.2472
Total	**3.0809**	**0.0916**	**0.1237**	**2.0000e-004**		**6.4200e-003**	**6.4200e-003**		**6.4200e-003**	**6.4200e-003**	**0.0000**	**17.2344**	**17.2344**	**6.1000e-004**	**0.0000**	**17.2472**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.0924	0.0000	0.0924	0.0227	0.0000	0.0227	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.0924**	**0.0000**	**0.0924**	**0.0227**	**0.0000**	**0.0227**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Implement Trip Reduction Program

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	12.6266	17.3040	105.5732	0.2282	13.9230	0.3423	14.2652	3.7337	0.3160	4.0497	0.0000	15,015.9569	15,015.9569	0.3855	0.0000	15,024.0528
Unmitigated	12.6266	17.3040	105.5732	0.2282	13.9230	0.3423	14.2652	3.7337	0.3160	4.0497	0.0000	15,015.9569	15,015.9569	0.3855	0.0000	15,024.0528

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	2,174.04	2,292.84	1991.88	1,925,587	1,925,587
City Park	0.00	0.00	0.00		
Condo/Townhouse	1,488.00	1,565.50	1364.00	1,317,551	1,317,551
General Light Industry	41,639.20	7,885.78	4064.10	28,442,317	28,442,317
General Office Building	576.00	232.20	38.40	333,396	333,396
Office Park	1,818.00	735.00	120.00	1,103,253	1,103,253
Regional Shopping Center	5,426.40	6,315.50	3189.20	2,855,190	2,855,190
Single Family Housing	1,902.12	2,003.76	1744.82	1,684,714	1,684,714
Parking Lot	0.00	0.00	0.00		
Total	55,023.76	21,030.58	12,512.40	37,662,007	37,662,007

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	3.35	2.26	2.33	42.60	21.00	36.40	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	3.35	2.26	2.33	42.60	21.00	36.40	86	11	3
General Light Industry	2.94	2.26	2.26	59.00	28.00	13.00	92	5	3
General Office Building	2.94	2.26	2.26	33.00	48.00	19.00	77	19	4
Office Park	2.94	2.26	2.26	33.00	48.00	19.00	82	15	3
Regional Shopping Center	2.94	2.26	2.26	16.30	64.70	19.00	54	35	11
Single Family Housing	3.35	2.26	2.33	42.60	21.00	36.40	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.439610	0.064325	0.188519	0.165588	0.061617	0.008591	0.013985	0.042670	0.001725	0.001053	0.008236	0.000439	0.003642

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	8,222.6951	8,222.6951	0.0000	0.0000	8,222.6951
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	8,341.3512	8,341.3512	0.0000	0.0000	8,341.3512
NaturalGas Mitigated	0.1987	1.7669	1.2266	0.0108		0.1373	0.1373		0.1373	0.1373	0.0000	1,966.6647	1,966.6647	0.0377	0.0361	1,978.6335
NaturalGas Unmitigated	0.2189	1.9467	1.3555	0.0119		0.1512	0.1512		0.1512	0.1512	0.0000	2,166.1774	2,166.1774	0.0415	0.0397	2,179.3604

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	5.3232e+006	0.0287	0.2453	0.1044	1.5700e-003		0.0198	0.0198		0.0198	0.0198	0.0000	284.0660	284.0660	5.4400e-003	5.2100e-003	285.7948
General Light Industry	2.09907e+007	0.1132	1.0290	0.8643	6.1700e-003		0.0782	0.0782		0.0782	0.0782	0.0000	1,120.1448	1,120.1448	0.0215	0.0205	1,126.9618
General Office Building	785400	4.2400e-003	0.0385	0.0323	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003	0.0000	41.9119	41.9119	8.0000e-004	7.7000e-004	42.1670
Office Park	2.583e+006	0.0139	0.1266	0.1064	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	137.8387	137.8387	2.6400e-003	2.5300e-003	138.6776
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.5827e+006	8.5300e-003	0.0776	0.0652	4.7000e-004		5.9000e-003	5.9000e-003		5.9000e-003	5.9000e-003	0.0000	84.4589	84.4589	1.6200e-003	1.5500e-003	84.9729
Single Family Housing	6.19442e+006	0.0334	0.2854	0.1215	1.8200e-003		0.0231	0.0231		0.0231	0.0231	0.0000	330.5576	330.5576	6.3400e-003	6.0600e-003	332.5693
Apartments Mid Rise	3.1332e+006	0.0169	0.1444	0.0614	9.2000e-004		0.0117	0.0117		0.0117	0.0117	0.0000	167.1995	167.1995	3.2000e-003	3.0700e-003	168.2170
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.2189**	**1.9467**	**1.3555**	**0.0119**		**0.1512**	**0.1512**		**0.1512**	**0.1512**	**0.0000**	**2,166.1774**	**2,166.1774**	**0.0415**	**0.0397**	**2,179.3604**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	4.88236e+006	0.0263	0.2250	0.0957	1.4400e-003		0.0182	0.0182		0.0182	0.0182	0.0000	260.5412	260.5412	4.9900e-003	4.7800e-003	262.1268
General Light Industry	1.89002e+007	0.1019	0.9265	0.7782	5.5600e-003		0.0704	0.0704		0.0704	0.0704	0.0000	1,008.5869	1,008.5869	0.0193	0.0185	1,014.7250
General Office Building	709680	3.8300e-003	0.0348	0.0292	2.1000e-004		2.6400e-003	2.6400e-003		2.6400e-003	2.6400e-003	0.0000	37.8712	37.8712	7.3000e-004	6.9000e-004	38.1017
Office Park	2.3247e+006	0.0125	0.1140	0.0957	6.8000e-004		8.6600e-003	8.6600e-003		8.6600e-003	8.6600e-003	0.0000	124.0549	124.0549	2.3800e-003	2.2700e-003	124.8098
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.43055e+006	7.7100e-003	0.0701	0.0589	4.2000e-004		5.3300e-003	5.3300e-003		5.3300e-003	5.3300e-003	0.0000	76.3396	76.3396	1.4600e-003	1.4000e-003	76.8042
Single Family Housing	5.71857e+006	0.0308	0.2635	0.1121	1.6800e-003		0.0213	0.0213		0.0213	0.0213	0.0000	305.1647	305.1647	5.8500e-003	5.5900e-003	307.0219
Apartments Mid Rise	2.88784e+006	0.0156	0.1331	0.0566	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.1062	154.1062	2.9500e-003	2.8300e-003	155.0441
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1987**	**1.7669**	**1.2266**	**0.0108**		**0.1373**	**0.1373**		**0.1373**	**0.1373**	**0.0000**	**1,966.6647**	**1,966.6647**	**0.0377**	**0.0361**	**1,978.6335**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Apartments Mid Rise	1.40096e+006		407.9675	0.0000	0.0000	407.9675
City Park	0		0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.34937e+006		392.9454	0.0000	0.0000	392.9454
General Light Industry	1.2449e+007		3,625.2214	0.0000	0.0000	3,625.2214
General Office Building	611400		178.0435	0.0000	0.0000	178.0435
Office Park	3.222e+006		938.2667	0.0000	0.0000	938.2667
Parking Lot	5.78174e+006		1,683.6780	0.0000	0.0000	1,683.6780
Regional Shopping Center	2.074e+006		603.9619	0.0000	0.0000	603.9619
Single Family Housing	1.75569e+006		511.2668	0.0000	0.0000	511.2668
Total			**8,341.3512**	**0.0000**	**0.0000**	**8,341.3512**

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Apartments Mid Rise	1.39138e+006		405.1784	0.0000	0.0000	405.1784
City Park	0		0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.34237e+006		390.9064	0.0000	0.0000	390.9064
General Light Industry	1.22322e+007		3,562.1019	0.0000	0.0000	3,562.1019
General Office Building	593700		172.8892	0.0000	0.0000	172.8892
Office Park	3.1395e+006		914.2422	0.0000	0.0000	914.2422
Parking Lot	5.78174e+006		1,683.6780	0.0000	0.0000	1,683.6780
Regional Shopping Center	2.01331e+006		586.2886	0.0000	0.0000	586.2886
Single Family Housing	1.74244e+006		507.4104	0.0000	0.0000	507.4104
Total			**8,222.6951**	**0.0000**	**0.0000**	**8,222.6951**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	51.5950	0.0645	5.3419	2.4000e-004		0.0459	0.0459		0.0457	0.0457	0.0000	247.1973	247.1973	0.0104	4.3800e-003	248.7739
Unmitigated	51.6945	0.0811	7.0355	3.7000e-004		0.0558	0.0558		0.0556	0.0556	0.0000	250.6675	250.6675	0.0156	4.3800e-003	252.3548

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.6209					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	49.8379					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0242	0.0000	1.3200e-003	0.0000		0.0167	0.0167		0.0165	0.0165	0.0000	239.1305	239.1305	4.5800e-003	4.3800e-003	240.5858
Landscaping	0.2115	0.0811	7.0342	3.7000e-004		0.0391	0.0391		0.0391	0.0391	0.0000	11.5370	11.5370	0.0111	0.0000	11.7690
Total	**51.6945**	**0.0811**	**7.0355**	**3.7000e-004**		**0.0558**	**0.0558**		**0.0556**	**0.0556**	**0.0000**	**250.6675**	**250.6675**	**0.0156**	**4.3800e-003**	**252.3548**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.6209					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	49.8379					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0242	0.0000	1.3200e-003	0.0000		0.0167	0.0167		0.0165	0.0165	0.0000	239.1305	239.1305	4.5800e-003	4.3800e-003	240.5858
Landscaping	0.1120	0.0645	5.3406	2.4000e-004		0.0292	0.0292		0.0292	0.0292	0.0000	8.0668	8.0668	5.7700e-003	0.0000	8.1881
Total	**51.5950**	**0.0645**	**5.3419**	**2.4000e-004**		**0.0458**	**0.0458**		**0.0457**	**0.0457**	**0.0000**	**247.1973**	**247.1973**	**0.0104**	**4.3800e-003**	**248.7739**

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		1,059.8668	15.2532	0.3602	1,491.8341

Unmitigated		1,059.8668	15.2532	0.3602	1,491.8341

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Apartments Mid Rise	25.801 / 16.2658		65.4190	0.8407	0.0199	89.2282
City Park	0 / 84.6071		86.2334	0.0000	0.0000	86.2334
Condo/Townhouse	20.1977 / 12.7334		51.2119	0.6581	0.0155	69.8504
General Light Industry	329.762 / 0		624.2309	10.7453	0.2537	928.5358
General Office Building	10.664 / 6.53602		26.8483	0.3475	8.2000e-003	36.6891
Office Park	53.3201 / 32.6801		134.2417	1.7374	0.0410	183.4455
Parking Lot	0 / 0		0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	12.5923 / 7.71788		31.7032	0.4103	9.6900e-003	43.3234
Single Family Housing	15.7673 / 9.94024		39.9783	0.5138	0.0121	54.5284
Total			**1,059.8667**	**15.2532**	**0.3602**	**1,491.8341**

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Apartments Mid Rise	25.801 / 16.2658		65.4190	0.8407	0.0199	89.2282
City Park	0 / 84.6071		86.2334	0.0000	0.0000	86.2334
Condo/Townhouse	20.1977 / 12.7334		51.2119	0.6581	0.0155	69.8504
General Light Industry	329.762 / 0		624.2309	10.7453	0.2537	928.5358
General Office Building	10.664 / 6.53602		26.8483	0.3475	8.2000e-003	36.6891
Office Park	53.3201 / 32.6801		134.2417	1.7374	0.0410	183.4455
Parking Lot	0 / 0		0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	12.5923 / 7.71788		31.7032	0.4103	9.6900e-003	43.3234
Single Family Housing	15.7673 / 9.94024		39.9783	0.5138	0.0121	54.5284
Total			**1,059.8667**	**15.2532**	**0.3602**	**1,491.8341**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		580.8647	34.3281	0.0000	1,301.7553
Unmitigated		580.8647	34.3281	0.0000	1,301.7553

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Apartments Mid Rise	182.16		36.9768	2.1853	0.0000	82.8675
City Park	6.11		1.2403	0.0733	0.0000	2.7795
Condo/Townhouse	142.6		28.9465	1.7107	0.0000	64.8710
General Light Industry	1768.24		358.9367	21.2126	0.0000	804.4004
General Office Building	55.8		11.3269	0.6694	0.0000	25.3843
Office Park	279		56.6345	3.3470	0.0000	126.9215
Parking Lot	0		0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	178.5		36.2339	2.1414	0.0000	81.2025
Single Family Housing	249.12		50.5691	2.9886	0.0000	113.3286
Total			**580.8647**	**34.3281**	**0.0000**	**1,301.7553**

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Apartments Mid Rise	182.16		36.9768	2.1853	0.0000	82.8675
City Park	6.11		1.2403	0.0733	0.0000	2.7795
Condo/Townhouse	142.6		28.9465	1.7107	0.0000	64.8710
General Light Industry	1768.24		358.9367	21.2126	0.0000	804.4004
General Office Building	55.8		11.3269	0.6694	0.0000	25.3843
Office Park	279		56.6345	3.3470	0.0000	126.9215
Parking Lot	0		0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	178.5		36.2339	2.1414	0.0000	81.2025
Single Family Housing	249.12		50.5691	2.9886	0.0000	113.3286
Total			**580.8647**	**34.3281**	**0.0000**	**1,301.7553**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

HEWLETT-PACKARD / CAMPUS OAKS
REZONE & MASTER PLAN PROJECT

WATER SUPPLY ASSESSMENT

June 2015

By: Derrick Whitehead, PE

Municipal Consulting Group

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HEWLETT-PACKARD / CAMPUS OAKS
REZONE & MASTER PLAN PROJECT
WATER SUPPLY ASSESSMENT

INTRODUCTION

PURPOSE

Senate Bill 610 (SB 610), codified at California Water Code Section 10910 et seq., requires a City or County to request the public water utility to prepare an assessment of the availability of water supplies for certain large development projects. A water supply assessment (WSA) is performed in conjunction with a land-use approval process. The WSA must include an evaluation of the sufficiency of the water supplies over a twenty-year horizon that addresses the availability of the water supply to the utility to meet existing and anticipated future demands, including the demand associated with the project during normal, single-dry and multiple-dry years.

The WSA must identify existing water supply entitlements, water rights, or water service contracts held by the water supplier or relevant to the identified water received in prior years by the public water system. If the public water supplier includes groundwater supplies, the WSA must describe all groundwater basins from which the proposed project will be supplied. For each basin that has not been adjudicated the WSA should indicate whether the California Department of Water Resources has identified the basin as over drafted or has projected that the basin will become over drafted if present management conditions continue. In addition the WSA should provide a detailed description of the efforts being undertaken in the basin to eliminate the long-term over draft condition.

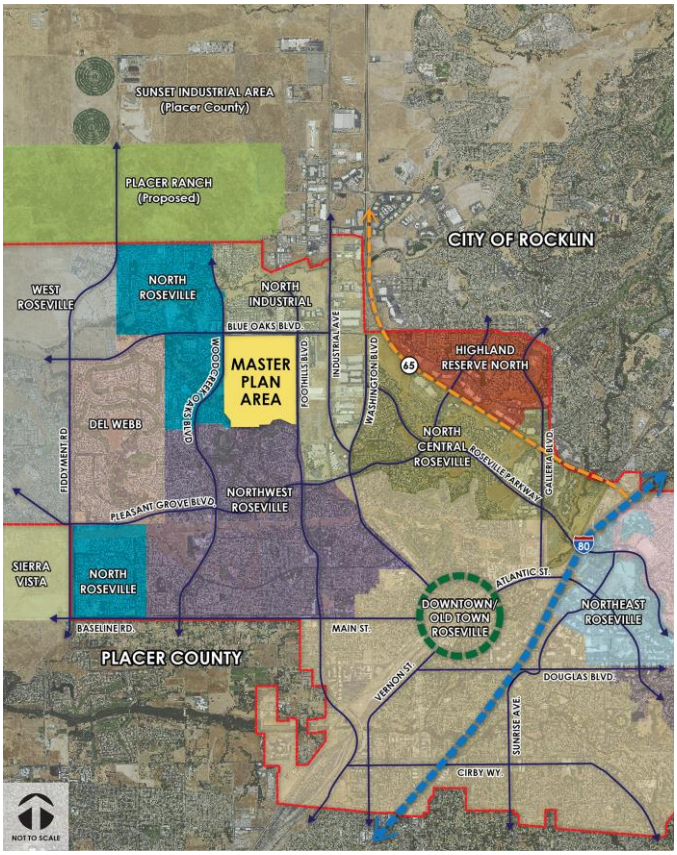


Figure 1- Project Location

If the WSA concludes that additional water

supplies are necessary, the public water supplier must submit plans for acquiring additional water supplies including the measures that would be taken to acquire and develop supplies. The future water supply projects and a program discussion based upon proposed methods of financing, estimated costs, information related to federal, state and local permits and the estimated timeframes when the public water system expects to be able to acquire the additional supplies.

PROJECT DESCRIPTION

Hewlett-Packard and BBC Roseville Oaks, LLC have proposed an amendment to the Hewlett-Packard Roseville Campus Master Plan that would reconfigure the land uses and infrastructure on a portion of the Master Plan Area. The Hewlett-Packard Roseville Campus Rezone & Master Plan establishes development regulations for 492.2 acres at the southwest corner of Blue Oaks and Foothills Boulevards within the City of Roseville's North Industrial Planning Area (see **Figure 1**). Originally adopted in June 1996, the Master Plan envisioned a manufacturing and office campus to accommodate Hewlett-Packard's existing and planned operations. Hewlett-Packard has subsequently adjusted its facilities needs for the Roseville campus, divesting its ownership in all but a portion of the Master Plan Area.

The proposed amendment to the Master Plan, the Hewlett-Packard / Campus Oaks Rezone & Master Plan (HPCO) Amendment provides for a mixed-use community on a 375.7-acre portion of the original Master Plan Area (See **Figure 2**). The HPCO Amendment Area is organized into two physically and functionally integrated sub-areas: the Hewlett-Packard Campus accommodating existing and planned light industrial, recreation and related uses (blue area); and Campus Oaks (tan area – the Project) planned for a new mix of tech/business park, office, commercial, residential, park and recreation, open space and public uses. The HPCO Master Plan Amendment supersedes all prior Master Plan requirements for the HPCO Amendment Area.

Figure 2- HPCO Amendment Area

PROJECT SETTING

The HPCO Amendment Area has been designated for development for over 35 years. Surrounded by established employment, commercial and residential uses, the eastern portion of the Amendment Area is partially developed by Hewlett-Packard, one of Roseville's largest employers. The western portion of the Amendment Area, Campus Oaks, is undeveloped consisting primarily of annual grasslands with gently rolling topography that has been highly disturbed over time through bi-annual disk-plowing. The southern portion of Campus Oaks contains a City owned open space/wetland preserve along the South Branch of Pleasant Grove Creek.

PROPOSED PROJECT

The HPCO Master Plan Amendment establishes updated land use and zoning regulations, mobility and infrastructure plans, public services provisions, design guidelines, and development approval processes for the 375.7-acre Amendment Area. The remainder of the larger Master Plan Area will continue to be regulated by the existing Hewlett-Packard Roseville Campus Master Plan.

The HPCO Master Plan Amendment proposes to retain the existing Light Industrial land use designation on a majority of the Hewlett Packard Campus, refining the square footage allocated to the Campus based upon Hewlett-Packard's projected development program. In addition, a City park is proposed on the western edge of the Campus. The existing Light Industrial land use designation on Campus Oaks is proposed to be changed to a mix of light industrial (tech/business park) office, commercial, residential, park and recreation, open space and public uses. The existing City owned wetland preserve will be retained, and will be augmented by additional open space parcels.

The HPCO Master Plan Amendment includes proposed revisions to the mobility and utility systems to accommodate the revised land uses. The mobility system will include a modified grid street pattern that is connected to, and helps to complete, the City's larger roadway network; an interconnected system of paths, sidewalks and bike lanes; and multiple transit stops. HP Way will be constructed as a public roadway through the project site. Other roadway connections will include the extensions of New Meadow Drive from the north, and Painted Desert and Crimson Ridge Drives from the west.

The construction of backbone utility infrastructure will be necessary to accommodate full build-out of the Amendment Area. Water, recycled water, wastewater, drainage, electric, natural gas, and telecommunications infrastructure exist within and/or adjacent to the Amendment Area. Since adoption of the 1996 Master Plan, substantial development and associated infrastructure improvements have been constructed in the vicinity of the Project Area. The Project Amendment accounts for these changed conditions to define an updated and efficient backbone utility infrastructure program.

Proposed land uses within the Project Master Plan Area are summarized in **Table 1**, and illustrated on **Figure 3**.

Figure 3 – HPCO Land Use Plan for Amendment Area

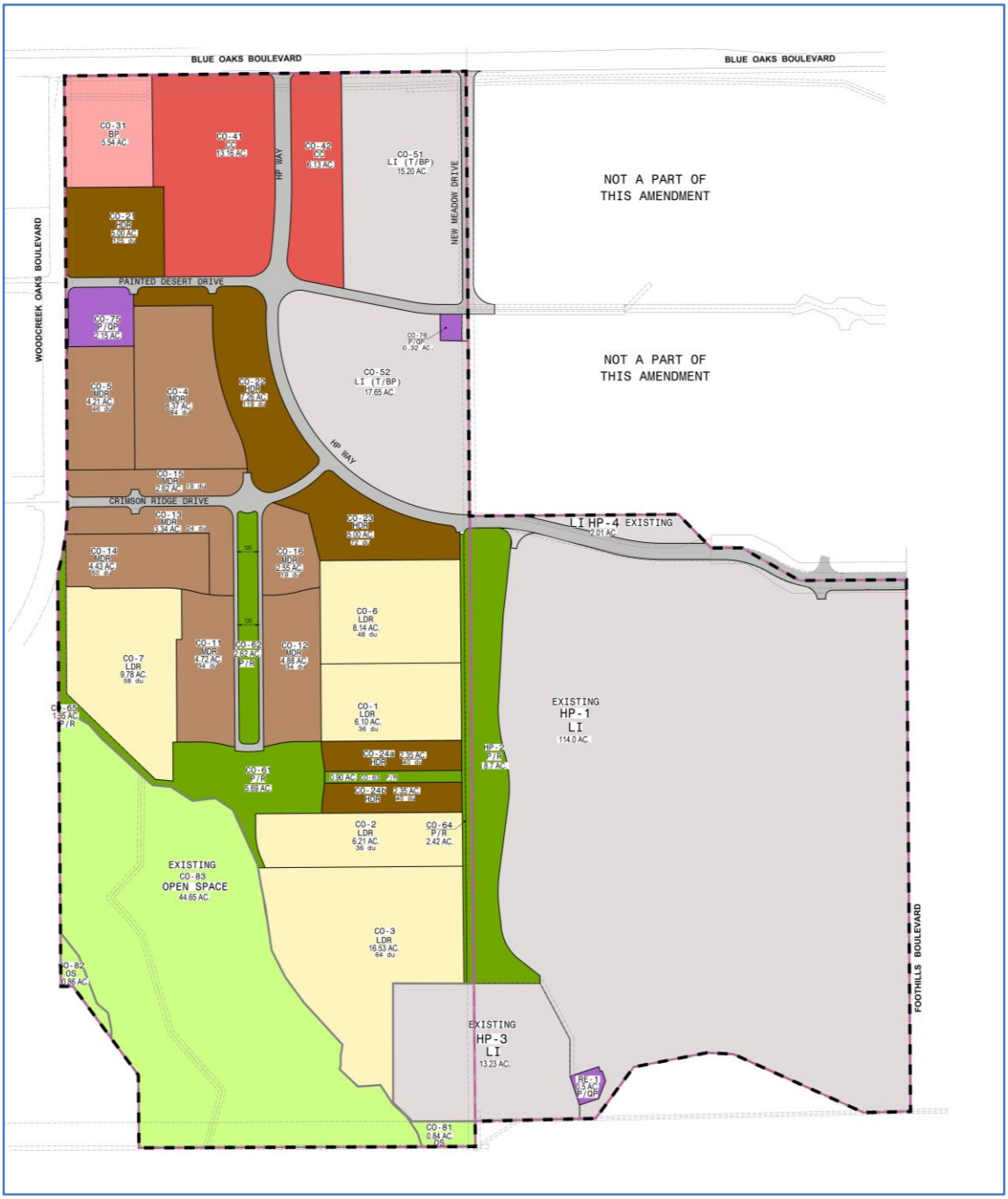


TABLE 1: HPCO Master Plan Amendment Area Land Use Summary

Land Use	Gross Acres	Building Square Feet (sf)					Dwelling Units (du)		
		Existing	Future	Total Capacity	FAR Range	Avg. FAR	Units	du/ac Range	Avg. du/ac
EMPLOYMENT AND COMMERCIAL USES									
Light Industrial (LI)	129.24 ac	593,820sf	606,180 sf	1,200,000	20-50%	31%			
Tech/Business Park (T/BP-LI)	32.85 ac		300,000 sf	300,000 sf	20-40%	21%			
Business Professional (BP)	5.54 ac		60,000 sf	60,000 sf	20-40%	25%			
Community Commercial (CC)	19.29 ac		170,000 sf	170,000 sf	20-40%	20%			
Sub-Total	**186.92 ac**	**593,820sf**	**1,136,180 sf**	**1,730 ,000 sf**		**21%**			
RESIDENTIAL USES									
Low Density (LDR)	46.76 ac						242 du	0.5-6.9	5.2
Medium Density (MDR)	35.60 ac						310 du	7.0-12.9	8.7
High Density (HDR)	21.97 ac						396 du	13.0+	18.0
Sub-Total	**104.33 ac**						**948 du**		**9.1**
PARK, OPEN SPACE AND PUBLIC USES									
Park & Recreation (P/R)	19.44 ac								
Paseo (P/R)	2.25 ac								
Open Space (OS)	46.35 ac								
Public (P/QP)	2.97 ac								
Sub-Total	**71.01 ac**								
Backbone Roads	13.47 ac								
TOTAL	**375.73 ac**	**593,820sf**	**1,136,180 sf**	**1,730,000 sf**		**27%**	**948 du**		**9.1**

NOTE: Existing development consists of Buildings R3 (126,220 sf), R4 (131,190 sf), R5 (158,760 sf) and R6 (177,650 sf).

Baseline Water Use

Municipal Consulting Group developed a water use estimate for the proposed Campus Oaks area. Summaries of residential and non-residential water demands are presented in **Table 2**. Water demands include both potable and recycled water usage in Campus Oaks. Additionally, system losses are accounted for in these calculations.

Table 2 Campus Oaks Rezone Area Proposed Land Uses Water Demand Estimate				
Residential		**Gross Acres**	**Units**	**Annual Demand (AFY)**
	LDR	46.76	242	146.90
	MDR	35.60	310	127.75
	HDR	21.97	396	87.47
	Subtotal:	104.33	948	362.12
Non-Residential				
	Commercial / Business Professional / Lite Industrial	57.68		167.87
	Parks	12.99		43.48
	Open Space	46.35		0.00
	Public Quasi Public	2.47		4.93
	Subtotal:	119.49		216.27
		223.82	948	578.40
Total (AFY)				578.40
System Losses (2%) AFY				11.57
Total System Demand (AFY)				589.97

Notes:
1. Demand factors and annual demands are based on the Campus Oaks Rezone Area – Land Use Plan, dated January 22, 2015 and City of Roseville unit water demand factors.

Calculations of the annual residential water demands are shown in **Table 3A**, and the non-residential demands are shown in **Table 3B**. The bottom of **Table 3B** consolidates the totals for both residential and non-residential demands with system losses. Before applying water conservation and the use of recycled water, the Campus Oaks Area's estimated demand is 590 AFY.

The 2015 HPCO Master Plan would develop approximately 189.88 acres west of the existing Hewlett Packard Campus within the City of Roseville. A summary of the proposed land use designations is graphically illustrated on **Figure 3** and listed in **Tables 2, 3A**, and **3B**.

TABLE 3A
HEWLETT-PACKARD /CAMPUS OAKS
REZONE & MASTER PLAN
CAMPUS OAKS AREA – RESIDENTIAL DEMANDS

Parcel	Land Use	Gross Area (Acres)	Density (du/ac)	DU's (Units)	Demand Factor (gpd/EDU)	Demand (AFY)
Low Density Residential						
CO – 1	LDR	6.10	5.9	36	521.00	21.01
CO – 2	LDR	6.21	5.8	36	521.00	21.01
CO - 3	LDR	16.53	3.9	64	600.00	43.02
CO - 6	LDR	8.14	5.9	48	521.00	28.01
CO - 7	LDR	9.78	5.9	58	521.00	33.85
Sub-Total		46.76		242		146.90
Medium Density Residential						
CO - 4	MDR	8.37	10.0	84	323.00	30.39
CO - 5	MDR	4.69	9.8	46	323.00	16.64
CO - 11	MDR	4.72	7.2	34	430.00	16.38
CO - 12	MDR	4.88	7.0	34	430.00	16.38
CO - 13	MDR	3.34	7.2	24	430.00	11.56
CO - 14	MDR	4.43	11.3	50	323.00	18.09
CO - 15	MDR	2.62	7.3	19	430.00	9.15
CO - 16	MDR	2.55	7.5	19	430.00	9.15
Sub-Total		35.60		310		127.75
High Density Residential (Attached or Detached)						
CO - 21	HDR	5.00	25.0	125	177.00	24.78
CO - 22	HDR	7.26	16.1	119	177.00	23.60
CO - 23	HDR	5.00	14.8	72	288.00	23.23
CO - 24	HDR	4.71	17.0	80	177.00	15.86
Sub-Total		21.97		396		87.47
Total:						362.12
System Losses					2%	7.24
Residential Total:						
		104.33		948.00		369.36

TABLE 3B
CAMPUS OAKS AREA – NON-RESIDENTIAL
HEWLETT PACKARD - CAMPUS OAKS MASTER PLAN

Parcel	Land Use	Gross Area Acre	Average Lot Size/ Product Type	Demand Factor gpd/AC	Demand AFY
Non-Residential					
CO - 31	BP	5.54	Prof Office	2,598.00	16.12
CO - 41	CC	13.16	Commercial	2,598.00	38.30
CO - 42	CC	6.13	Commercial	2,598.00	17.84
CO - 51	BP/LI	15.2	(Tech/Business Park)	2,598.00	44.24
CO - 52	BP/LI	17.65	(Tech/Business Park)	2,598.00	51.37
		57.68			167.87
Parks, Open Space & Public Uses					
CO - 61	P / R	5.70	Park	2,988.00	19.08
CO - 62	P / R	2.62	Park	2,988.00	8.77
CO - 63	P / R	0.9	Paseo	2,988.00	3.01
CO - 64	P / R	2.42	Park	2,988.00	8.10
CO - 65	P / R	1.35	Paseo	2,988.00	4.52
CO - 81	OS	0.84	Park/Preserve	0.00	0.00
CO - 82	OS	0.86	Park/Preserve	0.00	0.00
CO - 83	OS	44.65	Park/Preserve	0.00	0.00
		59.34			43.48
Public					
CO - 75	P/QP	2.15	Fire Station	1,780.00	4.29
CO - 76	P/QP	0.32	Well Site	1,780.00	0.64
		2.47			4.93
Roads					
Roads					
	ROW	10.71		0.00	0.00
Sub-Total					
					216.27
System Losses					
	Campus Oaks			2%	4.33
Non-Residential Adjusted Totals					
	Campus Oaks	130.20			220.60
Residential		104.33			369.36
Non-Residential		130.20			220.60
Total Demand					589.96

As shown on **Figure 3**, Hewlett-Packard / Campus Oaks Rezone & Master Plan Project land use plan includes low, medium, and high density residential uses; community commercial; public/quasi-public; parks and recreation areas, open space, and paseos; landscape corridors; light industrial (tech/business park); and roadways. At build out, the Project would provide approximately 948 dwelling units and generate a population of approximately 2,475 persons, based on the City of Roseville's General Plan assumption of 2.61 persons per household. According to the HPCO Master Plan, the project would accommodate approximately 3.23 million square feet of non-residential development generating approximately 4,500 to 7,500 jobs depending upon the ultimate composition and operations of employment uses.

DESCRIPTION OF THE CITY OF ROSEVILLE SERVICE AREA

The City of Roseville is located in Northern California's Central Valley region, within comfortable driving distance of both the Sierra Nevada Mountains and the Pacific Coast, midway between the cities of Sacramento and Auburn. A mixture of residential, park and recreation, commercial and industrial land uses characterizes the service area.

The City of Roseville's climate is described as mild with abundant sunshine year-round averaging 285 sunny days per year. Total rainfall averages 17.5" with the majority of rain between January and March. Summer months rarely experience precipitation. Peak water demands occur during the summer months.

The City's water service area is currently divided into six pressure zones. With the exception of Pressure Zone 4, where pressure is reduced through pressure reducing stations, all other pressure zones (Pressure Zones 1, 2, 3, and 5) are either serviced by gravity, require boosting or are served by adjacent water agencies that have sufficient capacity to serve these areas. The proposed Master Plan area is located in Pressure Zone 1.

SCOPE OF WATER SUPPLY ASSESSMENT

This WSA discusses historic water supplies and current water supplies that would serve planned future growth within the existing City limits. This information is presented consistent with the requirements of SB-610 and as detailed in Water Code Section 10910-10915, and includes:

- Description of existing and projected water demands
- Description of existing and projected water supply sources including:
    - Groundwater basins, surface water and other sources.
    - Opportunities for exchange or transfers of water on a short-term and long-term basis.
- Plans to acquire additional water supplies if necessary.
- Assessment of the availability of existing and projected water supply sources during normal, single-dry, and multiple-dry years within a 20-year projection.

The WSA for the proposed Hewlett-Packard / Campus Oaks & Master Plan Project contains information derived from several sources including:

- Hewlett-Packard / Campus Oaks Mater Rezone & Master Plan Project Water System Master Plan, April 2015
- Hewlett-Packard / Campus Oaks Mater Rezone & Master Plan Project, Recycled Water System Master Plan, April 2015
- Hewlett-Packard / Campus Oaks Mater Rezone & Master Plan Project, Water Conservation Plan, April 2015
- City of Roseville Urban Water Management Plan, City of Roseville, EU Staff, 2010
- Groundwater Impact Analysis for Proposed Reasons Farms Land Retirement Plan, MWH, June 2003
- PCWA's Integrated Water Resources Plan, Brown and Caldwell, August 2006
- FR SPA3 Specific Plan FEIR, April 16, 2014
- TM-1- Unit Water Demand Factor Verification and Water Demand Evaluation and Update, MWH September 2006
- TM 5a - Market Assessment for Recycled Water Distribution System, RMC, Updated February2008
- Water Forum Agreement Final EIR, November 1999
- West Roseville Specific Plan FEIR, February 2004
- Western Placer County Groundwater Management Plan, August 1, 2007
- Western Placer County Sustainable Yield Analysis (WPSY), prepared by GEI Consultants, dated November 2013.

WATER SUPPLY ASSESSMENT FOR THE HEWLETT-PACKARD / CAMPUS OAKS REZONE & MASTER PLAN PROJECT

California Water Code Sections 10910- 10915 (inclusive) require land use lead agencies: 1) to identify the responsible public water purveyor for a proposed development project, and 2) to request from the responsible purveyor a "Water Supply Assessment" (WSA). The purpose of the WSA is to demonstrate the sufficiency of the purveyors' water supplies to satisfy the water demands of the proposed development project, while still meeting the current and projected water demands of existing customers during the 20-year planning horizon. Water Code Sections 10910- 10915 delineate the specific information that must be included in the WSA.

This WSA is structured so that it clearly shows which section of the Water Code is being addressed by identifying the related section number and title. Additional information is provided where it is useful in the understanding of the proposed project, its water demands, and its corresponding water supplies.

Section 10910(a) Determine if a proposed project is subject to California Environmental Quality Act (CEQA).

The City of Roseville has made the determination that the proposed 2015 Hewlett-Packard / Campus Oaks Rezone & Master Plan Project (HPCO) is subject to CEQA through an amendment to the existing 1996 HPMP.

Section 10910(b) Identify responsible public water system that will or may supply water to the proposed project.

The City of Roseville has been identified as the responsible public water system for the HPCO.

Section 10910(c)(1) Determine if the most recent Urban Water Management Plan (UWMP) includes projected water demand associated with the project.

The 2010 UWMP dated August 2011, which was adopted by City of Roseville's Council Resolution August 17th, 2011, identifies current and projected water supply and demand through 2035 based on General Plan build out. Because the proposed project is an infill project, water demands for the HPCO Master Plan were included in the 2010 UWMP. The 2010 UWMP will not need to be updated to reflect the water demands associated with the proposed project as described herein.

Water Demand

Water demand is the amount of water required to service customers on an average annual basis. The

City measures this amount of water in acre-feet per year (AFY). One acre-foot of water is the volume of water that will cover an acre of land to a depth of one foot and equals 325,828 gallons. Total water

demand for build out of the City's existing General Plan, which includes the HPCO Master Plan was developed using the City's unit demand factors and applying those factors to the land uses throughout the City.

Water demands are classified as either potable or non-potable water demands. Potable water is water that is fit for human consumption (drinking water) while non-potable (often recycled water) is used for non-consumptive purposes such as landscape irrigation, manufacturing, and construction as well as many other purposes. Throughout most of the City potable water is used to meet potable and non-potable demands. Potable water demand needs are typically met by surface water supplies and supplemented by groundwater supplies (backup supplies) during emergency or surface water shortage conditions. Recycled water is tertiary treated wastewater that is used for irrigation (primarily on the west side of the City), which offsets the need to use potable water. Net potable demands are calculated by subtracting estimated recycled water demands from the City's total water demand.

The City's unit demand factors are based upon customers' actual metered water use data. The current demand factors were developed in 2002 as part of the West Roseville Specific Plan process. The City conducted an additional study in 2006 to determine if pre-1992 residential units water use characteristics were the same as post-1992. *TM-1 – Unit Water Demand Factor Verification and Water Demand Evaluation and Update by MWH, September 2002* is provided in Appendix 1 and the MWH – TM completed in 2006 is provided as Appendix 2 of this WSA. These factors are provided in **Table 4**.

TABLE 4
WATER DEMAND FACTORS

Residential Land Use Categories	Unit Demand Factor (GPD/DU)
LDR1 (<3.5 DUs / Acre)	728
LDR2 (3.5 to 5 DUs / Acre)	600
LMDR1 (>5.0 to 6.0 DUs / Acre)	521
LMDR2 (6.0 to 8.0 DUs / Acre)	430
MDR (>8.0 to 12.0 DUs / Acre)	323
HDR1 (>12.0 to 16.0 DUs / Acre)	288
HDR2 (>16.0 DUs / Acre)	177
Non Residential Land Use Categories	**Unit Demand Factor (gpd/AC)**
Community Commercial / Retail	2,598
Business Professional	2,598
Light Industrial	2,598
Industrial	2,562
Railyard	109
Elementary School	3,454
High School	4,069
Pubic Quasi-Public	1,780
Parks	2,988
Open Space / Right of Way	0

gpd/DU = gallons per day per dwelling unit
gpd/AC = gallons per day per acre

General Plan Build Out Demands

At build out of the City's current General Plan, water demands are estimated to reach 63,235 AFY. **Table 5** provides a summary of these demands.

TABLE 5
GENERAL PLAN
BUILD OUT WATER DEMANDS

Land Use Type	Demand (AFY)
Low Density Residential	26,551
Medium Density Residential	8,601
High Density Residential	3,750
Commercial	7,173
Commercial Business Park	2,494
Industrial	1,526
Light Industrial	3,588
Public/Quasi Public	1,231
Parks and Paseo	6,792
Rail Road	70
Schools	2,110
Open Space	0
Urban Reserve	4
Sub-Total (w/o losses)	**63,890**
2% for Losses	1,278
Sub-Total (w/losses)	**65,168**
Remove Corporate Centers Reserve	-313
Water Conservation Reduction (SVSP)	-729
Water Conservation Reduction (CSP)	-205
Water Conservation Reduction (WSP)	-178
Water Conservation Reduction (Pearl Creek Apts)	-5
Water Conservation Reduction (WP Phase 4)	-133
Water Conservation Reduction (Fiddyment Ranch SPA 3)	-370
Total Water Demand	**63,235**

HPCO Master Plan Water Demands

The proposed 2015 HPCO Master Plan proposes to develop approximately 189.9 acres Development of the Campus Oaks area would include residential, commercial, business professional, light industrial (tech/business park, open space and park uses requiring treated potable water. The HPCO Master Plan will also use recycled water for irrigation purposes. The total water demand for the Campus Oaks area is summarized on **Table 3A** and **3B**, totaling 590. AFY.

Table 6 identifies the amount of water allocated for the site using the City's current Demand Factors. The overall site has a demand of 1,432 AFY and the Campus Oaks area including the City Open Space area totaled 668 AFY. The 1,432 AFY identified for the entire HP Master Plan.

Table 6 Full Water Demand as Light Industrial Land Use Site For 1996 HPMP			
	Acres	Demand Factor	Water Use AFY
Existing HP Campus	131.00	2598	381.25
HP Park	9.04	2598	26.31
R-10 Building	57.87	2598	168.42
R-21 Building	59.73	2598	173.83
City OS	44.65	2598	129.95
Hewlett-Packard / Campus Oaks Master Rezone & Master Plan Project (as Light Industrial land use under current master Plan)	189.88	2598	552.61
Total:	492.17		1,432.38

In a letter dated August 27th, 2013 the City attributed 668 AFY of water demand to the Campus Oaks Sub-area (Appendix 3).

Tables 3A and **3B** estimate the total amount of water needed for the Campus Oaks Sub-area is 590 AFY, not adjusted to include conservation reductions or the use recycled water for irrigation. At this point in the assessment, one can conclude the City has set aside enough water supply entitlements to meet the estimated water needs for the proposed 2015 HPCO Rezone & Master Plan Project.

At this point in the assessment, it is safe to say that the City has set aside enough of its current water supply entitlements to meet the estimated water needs for the HPCO.

The 2015 HPCO Master Plan has included significant water conservation measure in the project. These water Conservation measures include:

- Turf reductions and low water use landscaping in residential front yards, parks, streetscapes and public facility landscaping.
- Smart irrigation controllers for more efficient and effective site irrigation
- Re-circulating hot water systems for residential units.

The Hewlett-Packard / Campus Oaks Mater Rezone & Master Plan, Water System Master Plan June 2015 (included as Appendix 4) and the Hewlett-Packard / Campus Oaks Mater Rezone & Master Plan, Water Conservation Plan dated June 2015 by Municipal Consulting Group (included as Appendix 5) provides the calculations showing the water demands for the HPCO Master Plan and the estimated water saving expected from the conservation measures identified above.

Applying the water conservation strategy used by the City for approval of the Creekview Specific Plan, the HPCO Master Plan could realistically expect to recognize 48 AFY of conserved potable water and an additional 27 AFY of conserved recycled water, totaling 75 AFY (**Tables 7** and **8**). This is approximately 12.6% savings over the standard demand factors by reducing the amount of turf by 28% in the front yards, installing smart irrigation timers on all landscape irrigation systems, and requiring recirculating hot water systems (Insta-Hot) plumbing in all new residential construction.

Using recycled water for landscape irrigation on all non-residential and high-density residential products reduces the demand for treated surface water. After applying conservation measures to recycled water demands the remaining recycled water demand is 82 AFY (**Table 8**). Recognizing 75 AFY (48 AFY Potable Savings, 27 AFY Recycled Saving) as savings plus 82 AFY of recycled water use results in a total water demand reduction of 157 AFY, which is a reduction in demand of 26.60%.

Development of the Campus Oaks area results in a projected potable demand (applying conservation measures and recycled water) of 433 AFY, which is a reduction in total demand of 157 AFY for the project. Subtracting 433 AFY from what was originally allocated to the Campus Oaks Area shows a savings of 235 AFY (668 AFY – 433 AFY) from what has been set-aside for the Campus Oaks portion of the original HP Campus under the current General Plan allocation. At a citywide level, Roseville's existing General Plan build out demand would be reduced from 63,235 AFY (**Table 5)** to 63,000 AFY.

Table 7
Estimate Potable Water Saved
by Implementing Conservation Measures
(AFY)

Residential	Annual Demand (AFY)	Outdoor Demand (AFY)	Modified Turf Savings (AFY)	Smart Timer Savings (AFY)	Insta Hot Savings (AFY)	Total Savings (AFY)
LDR	146.90	74.92	7.76	13.43	2.03	23.22
MDR	127.75	65.15	6.75	11.68	2.60	21.03
HDR	87.47	34.99			3.33	3.33
Subtotal:	362.12	175.06	14.51	25.11	7.96	47.58

Table 8 Estimate Recycled Water Saved by Implementing Conservation Measures (AFY)					
		Original Annual Demand (AFY)	Conservation Measures		Conserved RW (AFY)
			Modified Turf (AFY)	Smart Timer (AFY)	
Residential	HDR	17.49	6.73	2.15	8.88
Non-Residential					
	Parks / Open Space	43.48	10.96	5.64	16.60
	Public Quasi Public	4.93	1.21	0.25	1.46
	Subtotal:	65.90	18.90	8.04	26.94

Section 10910(c)(2) If demands are included in most recent UWMP; incorporate information from the UWMP in the WSA.

As indicated above, the water demand for the project site was included in the City's 2010 UWMP update. Specific information on water demands is provided in response to Section 10910 (c)(1), above and response to Section 10910(c)(3) and 10910(c)(4), below.

Section 10910(c)(3) If demands are NOT included in most recent UWMP, discuss existing system's water supplies available during normal, single dry, and multiple dry years during a 20-year projection to meet project demands, existing system and planned future uses.

Water demands for the project site were included in the City's 2010 UWMP update and are included in the City's long-term water supply projections. **No additional water supply is needed for this project, more specifically, the project results in a reduction in the total water demand for the City.**

Section 10910(c)(4) Discuss projected water supplies available during normal, single dry, and multiple dry years during a 20-year projection versus projected water demand including existing system, and planned future uses.

Water Supply Sources

The City of Roseville has three sources of water supply: 1) surface water, 2) recycled water for irrigation and cooling, and 3) groundwater in dry years or in times of emergency. Each is described herein.

Surface Water

Folsom Lake has been the primary source of water for the City of Roseville since 1971. Through the Folsom Lake Municipal and Industrial (M&I) intake, Roseville receives untreated water from the U.S. Bureau of Reclamation (USBR) and the Placer County Water Agency (PCWA). Additionally, through this same delivery point, the City receives a normal/wet year water supply from San Juan Water District (SJWD). The untreated surface water is delivered to the City's Barton Road Water Treatment Plant. Roseville also maintains interties with PCWA, San Juan Water District (SJWD), the California American Water Company, Sacramento Suburban Water District (SSWD) and the Citrus Heights Water District. Connections between two different water districts are known as interties. This allows existing distribution systems to be used to deliver water between purveyors in the event of water treatment plant or conveyance system disruptions.

The City of Roseville has three surface water contract entitlements for American River water totaling 66,000 acre-feet per year (AFY): a 32,000 AFY contract with the USSR from the Central Valley Project (CVP) supply from Folsom Lake; a 30,000 AFY contract with PCWA supplied from the Middle Fork (American River] Project (MFP); and a 4,000 AFY contract with SJWD. The SJWD contract allows for delivery of a portion of their PCWA contract water supply (also provided from the MFP) to the City's service area. **Table 9** summarizes the City's water supply contracts.

Table 9
City of Roseville - Surface Water Contracts[1]

Contracted Water Supply	Contract Amount (AFY)
USSR (CVP supply)	32,000
PCWA (MFP supply)	30,000
SJWD (wet year only - MFP supply)[2]	4,000
Total Contracted Supplies	66,000
Available Supplies: Normal/Wet Years	
(a) Normal/Wet Years	58,900
(b) Drier and Driest Years (Critically Dry)	Ranges from 54,900 to 39,800

1. American River diversion limitations as outlined in the City's Water Forum Agreement.
2. SJWD is only available as a wet year supply, thus it is not available during a drier or direst year.

The City of Roseville is a signatory to the Water Forum Agreement (WFA), which provides the framework for how future surface water and groundwater supplies will be used in the region, through the year 2030. Although Roseville's water contract entitlements total 66,000 AFY. The City's diversions from the American River are limited by the WFA in Normal/Wet Years, Drier and Driest Years as described below.

The Water Forum categorized water years into three types: 1) Normal or Wet (normal/wet) Years, 2) Drier Years, and 3) Driest Years. These hydrologic year types are defined as follows:

- Normal/Wet Years: When the projected March through November Unimpaired Inflow to Folsom Reservoir is greater than or equal to 950,000 AF;
- Drier Years: When the projected March through November Unimpaired Inflow to Folsom Reservoir is between 950,000 AF and 400,000 AF; and,
- Driest Years: When the projected March through November Unimpaired Inflow to Folsom Reservoir is less than 400,000 AF.

In normal/wet years, the City has agreed to limit surface water diversions from the American River to 58,900 AFY. In driest years, also called critically dry years, the maximum diversion from the American River is limited to 39,800 AFY. In drier years, the City may divert an amount between 54,900 and 39,800 AFY from the American River based on unimpaired flow into Folsom Lake. It is important to note that during the drier and driest years, the City agreed to have PCWA release an additional 20,000 AFY of water down the American River on the City's behalf through re-operation of their Middle Fork project. This 20,000 AFY of re-op water is not part of the City's contracted supply of 66,000 AFY and is described further herein.

While the WFA limited the City of Roseville diversion from Folsom Lake in driest years to no more then 39,800 AFY, the original goal was to limited diversion to 1995 baseline levels. Roseville's baseline diversion in 1995 was 19,800 AF. Because the City's annual demands were projected to increase significantly between 1995 and 2030 it was agreed that it was not feasible to reduce City diversions to 1995 levels. The City agreed under their Water Forum Agreement to offset the river impacts from diverting up to 39,800 AFY during a drier or driest year by facilitating the release of up to an additional 20,000 AF of water (the difference between 39,800 AF and 1995 levels of 19,800 AFY) down the American River. The City has worked with PCWA to orchestrate this additional release in their recently renewed operational contract with the Agency. The operational plan is that during drier and driest years PCWA will release of up to 20,000 AFY of raw water from the Agency's Middle Fork Project (MFP) down the American River to offset increased diversions above the City's 1995 demand levels. Increased releases would come either from MFP storage in total or a combination of PCWA contract water and MFP storage. Re-operational releases would not be released as part of normal MFP operations. The intent of MFP re-operational releases during drier and driest years is to mitigate environmental impacts resulting from increased diversions above 1995 baseline levels.

By agreeing to release the same amount of environmental mitigation water down the American River as was diverted to supply new growth in the City, environmental impacts were held to 1995 levels. Those impacts were identified in the WFA EIR and mitigated for increased diversions as outlined in the WF purveyor specific agreement as discussed above.

Based on the historical hydrologic record the Water Forum used for their analysis (and WFA restrictions), the 58,900 AFY contract surface water supply is assumed to be available to the City in about 83 percent of the years. In about 17 percent of the years, supply quantities ranging from 58,900 AFY to 39,800 AFY of surface water would be available per the WFA. Thus, in drier and driest years (e.g. droughts),

supplemental supplies potentially totaling up to 19,100 AFY (the difference between the normal/wet year supply and the driest year supply) is needed to make up for the deficiencies in drier or critically dry years.

Recycled Water

The City of Roseville, along with the South Placer Municipal Utility District and Placer County are regional partners in the South Placer Wastewater Authority (SPWA). The SPWA was created in 2000 to oversee funding of regional wastewater and recycled water infrastructure. The City owns and operates two regional wastewater treatment facilities on behalf of its regional partners. These treatment facilities include the Dry Creek wastewater treatment plant (DCWWTP) and the Pleasant Grove wastewater treatment plant (PGWWTP). Both plants produce Title 22 quality effluent that is available for recycled water applications. Recycled water for this project will be provided from the Dry Creek and Pleasant Grove WWTPs.

The City prepared the South Placer Regional Wastewater and Recycled Water Systems Evaluation (Systems Evaluation, June 2007). Chapter 6 of the Systems Evaluation report was developed to assist in the ongoing expansion of the regional water-recycling program. The goal of utilizing recycled water supplies is to promote responsible water supply management by beneficially reusing available tertiary treated wastewater for irrigation and other uses to free up surface water and groundwater supplies for potable uses.

The regional recycled water system currently serves approximately 3,000 AFY of recycled water to parks, streetscapes, and golf course customers both inside and outside of the City limits. Of this amount, approximately 2,040 AFY is for irrigation and industrial customers within the City of Roseville. The City also supplies recycled water for cooling purposes to the Roseville Energy Park. System expansion is planned for more intensive use of recycled water in the western portion of the City as new development is built. Recycled water demands within the City are expected to increase by approximately 2,369 AFY for a total recycled water demand of 4,409 AFY at build out of the City's existing General Plan. One hundred percent (100%) of the recycled water supply is expected to be available in all hydrologic year types.

As documented in the *Hewlett-Packard / Campus Oaks Mater Rezone & Master Plan*, *Recycled Water Master Plan,* the Campus Oaks area net recycled water demands are estimated at 82 AFY under the proposed land use plan. Consideration of the project would increase recycled water usage at build out within the City to 4,491 AFY and would be available to offset surface water needs.

Groundwater

The use of groundwater is part of the City of Roseville's long-term water supply strategy, potentially being used as a back-up supply during dry years or for increased operational flexibility. The City's WFA recognizes the extraction of up to 6,600 AFY of groundwater during the drier and driest year types. The City has expanded their groundwater program by adopting an Aquifer Storage and Recovery (ASR) program. Under

the City's ASR program, treated surface water can be injected into the aquifer during wet times (normal / wet years or during the rainy season), and when the City needs additional water supplies the groundwater wells can pump the banked water. Uses include augmenting surface water supplies during droughts or to shave peak water demand periods, like those, which occur during, summer months. Over the past several years the City has been working with the State Regional Water Quality Control Board for the Central Valley Region and other state agencies in developing its ASR program receiving an operational permit in 2013. This program includes injection of potable water taken from the City's distribution system into the aquifer and subsequent extraction and delivery to City water customers. The land use plan for the Campus Oaks area includes a dedicated well. The new well is provided so that groundwater may be available to supplement water supplies during drought conditions. The well will also be equipped to function as an ASR well so that the City has full operational flexibility.

In August 2007, the Cities of Roseville and Lincoln along with PCWA and the California American Water Company (CAW) completed the *Western Placer Groundwater Management Plan* (GMP). The GMP was prepared in an effort to maintain a safe, sustainable and high-quality groundwater resource to meet backup, emergency and peak demands within a zone of the North American River Groundwater Sub-basin.

The City currently operates six-groundwater wells, which are capable of delivering approximately 15,970 AFY (1,650 gpm - per well) if run continuously. A more realistic production amount is 40-AF per day (1,500 gpm – per well) over a shorter time frame to augment the water supply. The wells are primarily used as a backup water supply, having the intent of improving water supply reliability. The City has plans to expand its groundwater well network. Ten (10) additional groundwater well sites have been identified for constructing new wells. Once built, the City's groundwater facilities (16-wells) are projected to deliver of up to 106.07 AF per day (6.63 AF/day per well) or 38,715 AFY if run on a continuous basis. However, it is the City's historical practice is to only use groundwater facilities as a backup supply when surface water supplies are not able to meet demands.

Water Demands

Water demand is the amount of water required to service a customer on an annual basis. The City measures this amount of water in acre-feet per year (AFY). Total water demand for the proposed project was developed using the City's unit demand factors and applying those factors to the proposed land uses of the plan area.

The City's unit demand factors are based upon customer's actual water meter usage. Current demand factors were developed in 2002 as part of the West Roseville Specific Plan process. The City conducted an additional study in 2006 to evaluate pre-1992 residential units-usage compared to post 1992, to determine if water use characteristics were substantially different. This study, verified that the unit demand factors were appropriate for use across the City. These factors were provided previously in **Table 4**.

Water demands are segmented into potable demands and recycled water demands. Potable demands are

that component of the total water demand that will be used for public health related activities such as drinking water, indoor use and irrigation when recycled water is not available. Potable water needs are typically met by surface water supplies and supplemented by groundwater supplies as needed. Recycled water is that component of the overall water demand that can be used for non-potable uses like outside irrigation. Potable demands are calculated by subtracting estimated recycled water demands from the total water demand.

Existing and Build Out Water Demand

The City's total water demand in 2013 was 36,232 AFY (34,138 AFY + 2,094 AFY recycled water). At build out of the City's General Plan, water demands are estimated to reach approximately 63,235 AFY of which 4,409 AFY will be met through recycled water supplies.

HPCO Water Demands

Development of the proposed 2015 HPCO Master Plan would include residential, commercial, business professional, and light industrial uses that require water. The potable water demand for the Master Plan was determined using the City's unit demand factors identified in **Table 4** and applying those factors to proposed land uses in the HPCO Master Plan then subtracting recycled water demands and estimated savings from planned water conservation measures. In calculating the needed water supply, a 2% system loss factor is added to the base demand to account for water distribution and treatment losses.

The HPCO has included significant water conservation measures into the project. These water conservation measures include:

- Turf reductions and low water using landscaping in residential front yards
- Smart irrigation controllers for irrigation uses
- Re-circulating hot water systems for residential units.

Hewlett-Packard / Campus Oaks Mater Rezone & Master Plan, Water Conservation Plan dated June 2015 by Municipal Consulting Group, LLP (included as Appendix 5) provides the calculations showing the estimated water saving expected from the proposed conservation measures.

The total water demand for the Campus Oaks Sub-area is estimated to be 433 AFY after applying water conservation reductions and recycled water use of 157 AFY. Comparing the projects net surface water demand (433 AFY) to what was originally allocated for the same area as light industrial land uses (668 AFY), there is a savings of 235 AFY. Overall, build out under the General Plan would be reduced to 63,000 AFY (63,235 AFY – 235 AFY) as described earlier in this section. Total water demands for the City (**Table 5**) and for the project (**Tables 3A** and **3B**) are summarized above.

Water Supply vs. Water Demand

The City of Roseville currently supplies surface water, as its primary source of supply for municipal and industrial uses. The City's policy requires a firm surface water supply be in place that meets or exceeds what is needed to supply the proper amount of water for residents and businesses. Estimates in the 2010 UWMP

update show that in normal water years the City of Roseville has sufficient water to meet its customer's needs through 2035 and at City build out. **Table 10** provides a comparison of projected water supplies (potable and recycled water) and projected surface water demand through 2030 and then 5-year increments through build out of the City's existing General Plan adjusted for the project. It is important to note that build-out of the City's General Plan is expected to occur beyond the year 2035.

Table 10
Surface Water Demand
vs Water Supply
Current General Plan

Year	Surface Water Demand AFY	Normal/Wet Year Surface Water Available AFY	Net Available Surface Water Supplies AFY	Recycled Water Demand / Supply AFY
2010	28,742	58,900	30,158	2,040
2011	29,917	58,900	28,983	2,058
2012	30,677	58,900	28,223	2,076
2013	34,138	50,938	16,800	2,094
2014	37,134	46,000	8,867	2,112
2015	40,129	38,000	-2,129	2,216
2016	39,714	58,900	19,186	2,321
2017	39,278	58,900	19,622	2,434
2018	38,820	58,900	20,080	2,548
2019	38,340	58,900	20,560	2,661
2020	37,839	58,900	21,061	2,722
2021	38,309	58,900	20,591	2,783
2022	38,783	58,900	20,117	2,850
2023	39,257	58,900	19,643	2,917
2024	39,730	58,900	19,170	2,983
2025	40,204	58,900	18,696	3,071
2026	40,712	58,900	18,188	3,159
2027	41,221	58,900	17,679	3,243
2028	41,729	58,900	17,171	3,327
2029	42,238	58,900	16,662	3,412
2030	42,746	58,900	16,154	3,481
2035	45,666	58,900	13,234	3,653
2040	48,697	58,900	10,203	3,824
2045	51,486	58,900	7,414	3,996
2050	54,142	58,900	4,758	4,167
2055	56,637	58,900	2,263	4,339
Build Out	58,509	58,900	391	4,491

Note: The projected water use is based on the City's demand factors.

In **Table 10**, the years highlighted in light gray are actual demands and available surface water supplies based on allocations received for that year. The dark gray column identifies the total surface water supply available in those years. USBR allocations have been included to provide a frame of reference. The years highlighted in

tan are in 5-year increments. Most surface water supplies listed are under normal or wet conditions. In times of drought and water shortage, the urban demand is expected to decrease by a minimum of 10 percent as a result of increased conservation awareness and regulations. Expanding the use of recycled water and if needed, the use of groundwater, supplement existing surface water supplies. It is expected that if supplies were reduced due to shortages consistent with reductions identified in the WFA or the United States Bureau of Reclamation draft M&I Shortage Policy, existing water supplies are sufficient to meet existing and future citywide demands. This is further described herein.

Normal/ Wet Years

Existing Conditions + Project

In 2013, existing citywide water demands were 36,232 AFY (34,138 AFY potable + 2,094 AFY recycled). For purposes of this WSA, existing water demand from 2013 is conservatively used as the basis for existing demands.

As indicated in **Table 2**, the Campus Oaks area will result in a total of 515 AFY of water demand (including implementation of conservation efforts) once constructed. Therefore, build out of the Campus Oaks area plus existing conditions would generate a total demand of 36,747 AFY (36,232 AFY + 515 AFY).

Of this amount, 2,176 AFY (2,094 AFY + 82 AF in project) will be met through recycled water supplies. Therefore, the total potable water demand for the existing development in the City plus build out of the Campus Oaks area is conservatively assumed to be 34,571 AFY (36,747 AFY total existing plus project water demand – 2,176 AFY met through recycled water supplies). The City has contractual supplies of 66,000 AFY (See **Table 9**) under normal year conditions, but is limited by the City's Water Forum Agreement to 58,900 AFY. Available supplies exceed existing plus project water demands by 24,329 AFY.

Build Out Conditions + Project

Assuming build out of the existing City General Plan plus the Project water demands would total 63,000 AFY. When considering build out recycled water supplies of 4,491 AFY the resultant surface water supply need would be 58,509 AFY. This is 391 AFY less than total surface water supply available for the normal / wet year conditions at build out. In normal / wet years when full contracted surface water supplies are available, supplies exceed demand.

Drier and Driest Years

To meet water supply demands during drier and driest years the City may utilize other supplies such as groundwater to augment surface water supplies. Recycled water would continue to be used to offset the use of surface water supplies by meeting irrigation demands that would otherwise use surface water supplies. Groundwater is used to make up any additional water supply shortfall as further described herein.

In drier and driest years, the City will implement the water conservation strategies outlined in the Roseville Municipal Code (RMC). Section 14.09 of the RMC identifies "stages" of conservation designed to achieve a specific amount of reduction in water use to match available supplies for that year. Section 14.09 outlines five drought stages with specific actions a water customer can implement to achieve a 10 to 50 percent water reduction.

Groundwater use has been identified as a method to augment available surface water supplies during drought Stages three through five. The use of groundwater will mitigate the impact of surface water (American River) supply shortfalls. The use of groundwater in drier and driest years is consistent with current City practices and is identified in the General Plan as a backup source of supply to be used in droughts or emergencies.

Existing Conditions + Project

As indicated above, the existing City demand plus the Campus Oaks area would generate a total demand of 36,747 AFY. Recycled water would meet 2,176 AFY of demand leaving 34,571 AFY to be made up from available supplies. This will be the current demand plus project that will be evaluated for drier and driest conditions.

Roseville's Municipal Code identifies 5 different drought stages that may be enacted based on the type of water year being experienced by the City. The intent of the drought stages was to enact conservation measures that would result in increasingly more stringent water use reductions (ex. Stage 1 – 10% reduction to Stage 5 – 50% reduction).

Under the Water Forum Agreement, various conservation actions were identified in the Purveyor Specific Agreement to be put in place during a specific year types. For example, Normal/Wet years, a purveyor would receive their full allocation. During drier years, purveyors agreed to reduce diversion from the river based on other sources of supplies or offsets. Roseville has access to groundwater and contractual supplies from PCWA that are highly reliable.

Drier Years

The range of surface water supply spans between Normal/Wet years of 54,900 AFY to 39,800 AFY based on the unimpaired inflow of the American River.

For analysis 34,571 AFY is the surface water demand (recycled water has already been removed). There are four possible allocations the City could receive from the Bureau 75%, 50%, 25% or 0%. **Table 11** provides a matrix to evaluate different dry year conditions. Two examples will be given.

Table 11
Existing Conditions
Remaining Supply (AFY)
After USBR Contract Allocation
Drought Stage

		75%	50%	25%	0%
USBR Supply (32,000 AFY):		24,000	16,000	8,000	0
PCWA Supply (30,000 AFY):		30,000	30,000	30,000	30,000
Available Supply:		54,000	46,000	38,000	30,000
Normal	34,571	19,429	11,429	3,429	-4,571
Stage 1 – 10%	31,114	22,886	14,886	6,886	-1,114
Stage 2 – 20%	27,657	26,343	18,343	10,343	2,343
Stage 3 – 30%	24,200	29,800	21,800	13,800	5,800
Stage 4 – 40%	20,743	33,257	25,257	17,257	9,257
Stage 5 – 50%	17,286	36,715	28,715	20,715	12,715

Example 1 – Dry Year Condition

The US Bureau of Reclamation announces that they will be providing municipal and industrial contractors (like Roseville) north of the Delta a 75% allocation. This means that Roseville would receive 24,000 AF of their annual 32,000 AF contractual supply from USBR. When including the City's PCWA supply, total available supply is 54,000 AF. Unimpaired inflow on the Lower American River is just below 950,000 AF meaning almost a normal year. In this scenario, the City my divert from the American River nearly 54,900 AFY, more than available supplies, Comparing 24,000 AF to the blue column in **Table 11**, there is not enough supply to meet demands using only USBR supplies unless the City declared a Stage 4 drought. Since the City has additional surface water supplies available (PCWA – 30,000 AFY), the City may not need to declare a Stage 1 drought because the City has ample water available to meet the total demand of 34,571 AF with 19,429 AF remaining (54,000 AFY – 34,571 AFY).

Example 2 – Critical Dry Year Condition

The US Bureau of Reclamation announces that they will be providing municipal and industrial

contractors (like Roseville) north of the Delta a 25% allocation. This means that Roseville would receive 8,000 AF of their annual 32,000 AF contractual supply. Total available supply is 38,000 AF when considering contract water from PCWA. Unimpaired inflow on the American River is just above 400,000 AF meaning almost a critically dry year and that the City can divert little more than 39,800 AF. Comparing 8,000 AF to the blue column in **Table 11**, there is not enough water to meet demands even if the City declared a Stage 5 drought. Since the City has additional surface water supplies available (PCWA – 30,000 AFY), the City may not need to declare a Stage 1 drought because the City has water available to meet the total demand of 34,571 AF with 3,429 AF remaining.

Note that if the Bureau of Reclamation provides a zero allocation, the City would need to declare a minimum of a Stage 2 drought. Both examples above made the assumption that PCWA supplies were accessible from Folsom Lake.

Critically Dry Years

Table 11 is useful for evaluating Critically Dry Years, but the most extreme condition that the City may experience during a critically dry year is the loss of surface water supply from Folsom Reservoir. If surface water supplies are not available from Folsom Lake, the City would need to declare at a minimum a Stage 3 drought setting demand at 24,200 AF, acquire up to 11,200 AF of surface water through purveyor interties (10 million gallons per day) and supplement remaining demand needs with 13,000 AF of groundwater. The City has always planned on using groundwater as a backup supply for surface water as well as developing the large system intertie between Roseville and PCWA. The City's General Plan and the Urban Water Management Plan both reference the use of groundwater as a backup supply and under *extreme conditions* like the loss of Folsom Lake Water supplies, the groundwater system and system interties are in place to meet customer demands, albeit that the customers will have reduced their demand according to the situation at hand.

Build Out Conditions + Project

To understand the impacts of dry and driest year types on the City's water supply availability, this WSA looks at 100 years of hydrologic record from the American River under two different water delivery patterns (scenarios). The first scenario considers water supply cut backs per the City' WFA (reference **Figure 4**). The second scenario considers reasonably foreseeable USBR water supply cutbacks as a result of current Operations Criteria and Plan (OCAP) discussion.

Drier Years

The range of surface water supply spans between Normal/Wet years of 54,900 AFY to 39,800 AFY based on the unimpaired inflow of the American River.

For analysis 58,509 AFY is the surface water demand (recycled water has already been removed). There are four possible allocations the City could receive from the Bureau 75%, 50%, 25% or 0. **Table 12** provides a matrix to evaluate different dry year conditions. Two examples will be given.

Table 12
Build Out Condition
Remaining Supply (AFY)
After USBR Contract Allocation
Drought Stage

		75%	50%	25%	0%
USBR Supply (32,000 AFY):		24,000	16,000	8,000	0
PCWA Supply (30,000 AFY):		30,000	30,000	30,000	30,000
Available Supply:		54,000	46,000	38,000	30,000
Normal	58,509	-4,509	-12,509	-20,509	-28,509
Stage 1 – 10%	52,658	1,342	-6,658	-14,658	-22,658
Stage 2 – 20%	46,807	7,193	-807	-8,807	-16,807
Stage 3 – 20%	40,956	13,044	5,044	-2,956	-10,956
Stage 4 – 40%	35,105	18,895	10,895	2,895	-5,105
Stage 5 – 50%	29,255	24,746	16,746	8,746	746

Example 1 – Dry Year Condition

The US Bureau of Reclamation announces that they will be providing municipal and industrial contractors (like Roseville) north of the Delta a 75% allocation. This means that Roseville would receive 24,000 AF of their annual 32,000 AF contractual supply. Total available supply is 54,000 AF. Unimpaired inflow on the Lower American River is just below 950,000 AF meaning almost a normal year. The City cannot meet the base demand using just USBR supplies. Since the City has additional surface water supplies (PCWA – 30,000 AF) available, the City would need to declare a Stage 1 drought to meet the total demand of 52,658 AF with 1,342 AF remaining.

Example 2 – Critical Dry Year Condition

The US Bureau of Reclamation announces that they will be providing municipal and industrial contractors (like Roseville) north of the Delta a 25% allocation. This means that Roseville would receive 8,000 AF of their annual 32,000 AF contractual supply. Total available supply is 38,000 AF. Unimpaired inflow on the American River is just above 400,000 AF meaning almost a critically dry year and that the City can divert little more than 39,800 AF per the Water Forum Agreement. The City cannot meet the base demand using just USBR supplies. Since the City has additional surface water supplies available (PCWA – 30,000 AF), the City would need to declare a Stage 4 drought to meet the total demand of 35,105 AF with 2,895 AF remaining.

To reduce the drought stage the City declares, groundwater can be used to make up the difference. A Stage 3 drought would set demands at 40,956 AF. The water supply would be made up of 38,000 AF of surface water and 2,956 AF of groundwater; to move up to a Stage 2 drought (demands of 46,807 AF), the City would use 38,000 AF of surface water and 8,807 AF of groundwater.

Note that if the Bureau of Reclamation provides a zero allocation, the City could start at a Stage 3 drought (demands of 40,956 AF) and meet demands by using 30,000 AF of surface water and 10,956 AF of groundwater. Both examples used under the build out scenario made the assumption that PCWA supplies were accessible from Folsom Lake.

Critically Dry Years

Table 12 is useful for evaluating Critically Dry Years, but the most extreme condition that the City may experience during a critically dry year is the loss of surface water supply from Folsom Reservoir. If surface water supplies are not available from Folsom Lake, the City would need to declare a drought stage comparable what is needed to meet public health and safety needs. Usually, this is approximately 50% of the overall demand or Stage 5 drought setting demand at 29,255 AF, acquire 11,200 AF (or more) of surface water through purveyor interties and use 18,055 AF of groundwater. This would not overtax the groundwater network anticipated at build out of the City system. Groundwater extraction capacity is estimated at 38,715 AF. This is by far an extreme situation, but the City has developed a backup plan using groundwater to meet customer needs. The City's General Plan and the Urban Water Management Plan both reference the use of groundwater as a backup supply and under *extreme conditions* like the loss of Folsom Water supplies, the groundwater system and system interties will be in place to meet customer demands, albeit customers may have reduced their demand according to the situation at hand.

For this analysis, not only must we look at available supplies in any given year, the City looks at the potential impacts over a longer-term hydrologic record to understand the potential impacts to the groundwater basin. As such, two water deliver patterns are evaluated over a specified hydrologic period as described below.

Water Forum Agreement Delivery Pattern – 115 Year Hydrologic Record

The City participated in the Water Forum process, a regional stakeholder effort concerned with the protection of the Lower American River ecosystem and providing reliable water supplies for the region. The Water Forum resulted in the development of purveyor specific agreements that outline how purveyors will meet commitments agreed to as part of the Water Forum efforts. The goal of the Water Forum was to provide a safe and reliable water supply through the year 2030, while protecting resources associated with the Lower American River. Roseville's agreement included a limitation of diversion from the American River in both wet and dry years. In wet years the City agreed to limit diversions from its American River supply contracts to no more than 54,900 AFY and no less than 39,800 AFY in driest

years. Through its agreement with the San Juan Water District, the City increased its normal year water supplies an additional 4,000 AFY, for a total wet year supply of 58,900 AFY. Water supply contracts and Water Forum limitations are summarized in **Table 9**. Based on over 115 years of historical hydrology (and WFA restrictions), the 58,900 AFY contract surface water supply is assumed to be available to the City in about 83 percent of the years.

In about 17 percent of the years, when drier or driest year conditions exist, quantities from 54,900 AFY to a minimum of 39,800 AFY of surface water would be available per the WFA. Thus, in drought years, supplemental supplies potentially totaling up to 19,100 AFY (the difference between the average wet year supply of 58,900 AFY and the dry year supply) is needed to make up for the dry-year and driest-year deficiencies. **Figure 3** depicts the expected delivery pattern of surface water supplies to the City based upon historic hydrologic data under its WFA. The Water Forum EIR analysis projects full deliveries occur approximately 83 percent of the time.

USBR OCAP Delivery Pattern – Probability Percentage

The OCAP describes the operations of the Central Valley Project in conjunction with the State Water Project (reference Sierra Vista Specific Plan EIR Technical Memorandum: Effects of Changed Water Management Operations on Fisheries and Water Quality Impacts Previously Disclosed in the Water Form Agreement EIR, Robertson-Bryan Inc. and HDR, October 2009, and included as Appendix 6 to this document). This is pertinent to Roseville in that USBR water contracts with the City are delivered per Central Valley Project (CVP) operation plans. The United States Bureau of Reclamation (USBR) operates the CVP while the California Department of Water Resources (DWR) operates the State Water Project (SWP). Both the CVP and the SWP rely on the Sacramento River and the Delta as common conveyance facilities to meet various system demands including water contracts and environmental needs. Reservoir releases and Delta exports must be coordinated so that both the CVP and SWP are able to retain and protect beneficial uses. A Coordinated Operations Agreement (COA) between the CVP and SWP was signed and developed in November 1986.

The COA defines the rights and responsibilities of the CVP and SWP regarding water needs of the Sacramento River system and Delta and includes obligations for in-basin uses, accounting, and real-time coordination of water obligations of the two projects. A CVP/SWP apportionment of 75/25 is implemented to meet in-basin needs under balanced Delta conditions, and a 55/45 ratio is in effect for excess flow conditions. The COA contains considerable flexibility in the manner with which Delta conditions in the form of flow standards, water quality standards, and export restrictions are met.

Updated in 2004, the OCAP provides a detailed description of the coordinated operations of the CVP and SWP based on historical data and serves as a starting point for planning project operations in the future. Under the federal Endangered Species Act (ESA), the United States Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) each produced a formal Biological Opinion analyzing the impact of OCAP Implementation on

ESA listed species. USFWS Biological Opinion (BO) analyzed impacts on delta smelt while the NMFS BO analyzed impacts to other ESA listed species including endangered Sacramento River winter-run Chinook salmon, threatened Central Valley spring-run Chinook salmon, threatened Central Valley steelhead and threatened Southern Distinct population Segment (DPS) of North American green sturgeon. ESA authorizes USFWS and NMFs to require changes to the OCAP for the protection of federally listed species.

US Fish and Wildlife Service - Biological Opinion

In 2005, USFWS issued a Biological Opinion for an updated OCAP, and concluded that CVP/SWP operations did not jeopardize delta-smelt populations. A federal court following a lawsuit invalidated the Biological Opinion. USFWS was ultimately ordered to revise their Biological Opinion. The court also severely restricted CVP and SWP pumping in the Delta pending the USFWS's completion of the new Biological Opinion. Those restrictions took effect in December 2007.

In December 2008, USFWS released a new Biological Opinion concluding that CVP and SWP operations would jeopardize the continued existence of endangered delta smelt. USFWS further detailed a "reasonable and prudent alternative" to the proposed OCAP protocol that would, it claimed; protect the delta smelt and its habitat from the adverse effects of pumping operations. The "Reasonable and Prudent Alternative" (RPA) would restrict Delta pumping operations and would thus limit deliveries of water to CVP/SWP contractors south of the Delta. In 2009, NOAA's National Marine Fisheries Service (NMFS) also released a Biological Opinion on the revised OCAP and requested changes to protect ESA listed species including endangered Sacramento Rover winter-run Chinook salmon, threatened Central Valley spring-run Chinook salmon, threatened Central Valley steelhead and threatened Southern Distinct population Segment (DPS) of North American green sturgeon. Both of these Biological Opinions have survived legal challenges, as they were ultimately upheld by the Ninth Circuit Court of Appeals.

National Marine Fisheries – Biological Opinion

In October 2004, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) issued its own Biological Opinion for OCAP, and concluded that CVP/SWP operations were not likely to jeopardize the continued existence of the Sacramento River winter run Chinook salmon, spring run Chinook salmon, and Central Valley steelhead populations. In April, 2008, that Biological Opinion was also invalidated by the same court that heard the delta smelt suit as a result of a separate lawsuit. The court found that NMFS failed to analyze multiple factors and the 2004 Biological Opinion was remanded to NMFS and Reclamation for further consultation.

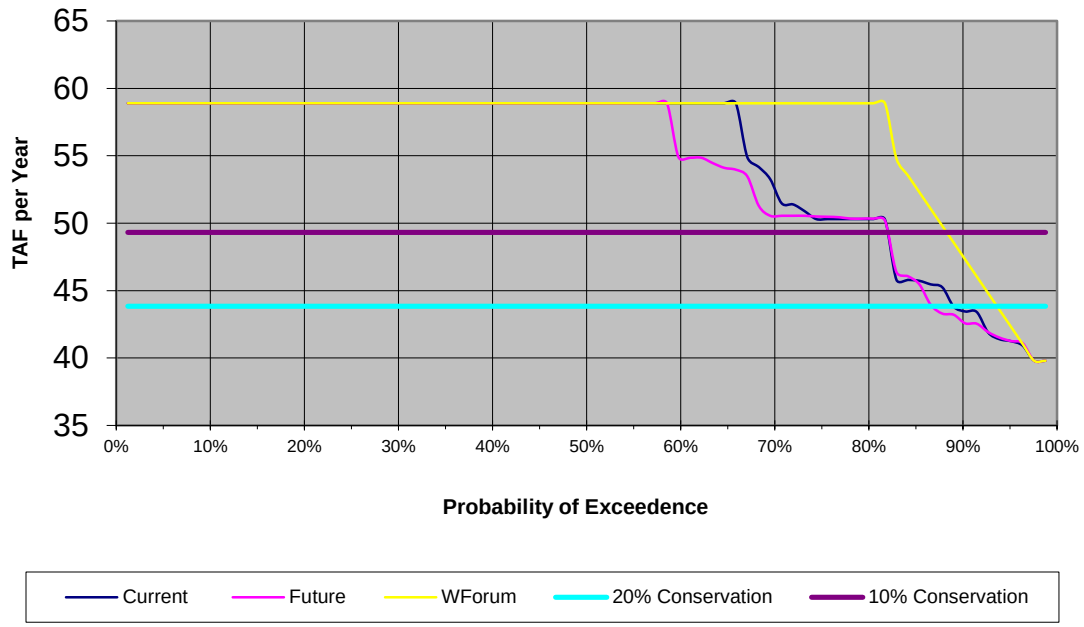
In 2009, NMFS also released a Biological Opinion on the revised OCAP and requested changes to protect ESA listed species including endangered Sacramento Rover winter-run Chinook salmon, threatened Central Valley spring-run Chinook salmon, threatened Central Valley steelhead and threatened Southern Distinct Population Segment (DPS) of North American green sturgeon. A federal court invalidated the Biological Opinions in December 2010; to date an updated OCAP has yet to be finalized.

Biological Opinions CALSIM Modeling

To develop the new biological opinions, both USFWS (smelt) and National Marine Fisheries Service (NMFS) (salmon) utilized a series of model runs from CALSIMII know as Study 7 and Study 8. CALSIM II is a model of California's State Water Project (SWP) and the Federal Central Valley Project (CVP), developed jointly by the California Department of Water Resources (DWR) and U.S. Bureau of Reclamation (USSR). Study 7 evaluated current conditions and Study 8 depicted future conditions as prepared by the Bureau of Reclamation. Neither study contains the assumptions for the (RPAs prescribed in the Biological Opinions. There is an accelerated effort to model the RPAs in CALSIMII by the Bureau; the effort has not been completed yet with the appropriate simulations of the RPA. However, utilizing the model runs used by both USFWS and NMFS identifies the frequency of the deliveries to Roseville.

For purposes of this WSA, Study 8 (future conditions) is used to evaluate possible impacts to Roseville deliveries from the OCAP over a typical 100-year hydrologic record. **Figure 4** depicts the changes in water supply deliveries to the City under OCAP, Study 8 (shown as the magenta colored line) as compared against WFA deliveries (shown as the yellow line) and current delivery patterns (shown by the dark blue line). In addition, **Figure 4** shows total water demand if the City were to conserve water equivalent to a 10% reduction in surface water supplies (purple colored line) or a 20% reduction (aqua colored line).

Figure 4
WF and OCAP Surface Water Delivery Patterns



Under the new OCAP (Study 8) full deliveries of PCWA and USBR contracted supplies are projected to occur fifty-eight (58) percent of the time. Forty-two (42) percent of the time shortages in surface water supplies can be mitigated through implementing water conservation Stages 1 and 2 (between 10% to 20% conservation reduction) that is outlined in Roseville Municipal Code (RMC) Section 14.09. This is the

area between the purple 10% line and the aqua 20% line. Eleven (11) percent of the time surface water deliveries will fall below a level where mitigation can be accomplished through 20% conservation efforts and supplemental groundwater supplies could be needed. This is shown as the area below the aqua colored line. In the Water Forum analysis deliveries were projected to fall below the same level only seven (7) percent of the time.

It is important to recognize that while City water supplies (surface, recycled water and groundwater) are sufficient such that only a 20% level of conservation is required, other state actions during drought periods may require increased water reductions. This is evidence by the current 4 year drought the State is experiencing. In 2014, Governor Brown requested a voluntary 20% reduction in water usage. The City of Roseville complied by implementation of a Drought Stage 3. The City achieved a 19.4% reduction in water demands over 2013 levels. Due to continued statewide drought conditions, Governor Browns signed an Executive Order to require a 25% statewide reduction in water usage over 2013 levels. The State Water Resources Control Board developed a tiered structure to define what each water agencies saving target would be. Emergency regulations enacted by the Board identify the City of Roseville's mandatory water savings level at 28% of 2013 City water usage levels.

Supplemental Supplies

In drier and driest years, the City will need to make up the difference between available supplies from the American River and projected demands. This would be done through implementing conservation measures as identified in the RMC and supplementing available supplies with groundwater. As explained earlier, the RMC identifies five drought stages with varying degrees of reduction (10% to 50%). The hydrologic record indicates that there are three (3) critically dry (driest) years and sixteen (16) drier years where City demands would need to be adjusted downward to conform to available surface water supplies under the City's WFA.

Table 13 depicts the impacts of the Water Forum Agreement and shows estimated surface water shortfalls during historical drier and driest years, assuming City build out demands are equivalent to 58,900 AFY (maximum diversion under the City's WFA). For example in a normal year such as occurred in 1929 there would be no anticipated shortfalls in available surface water supplies to the City. In critically dry (driest) years such as occurred in 1924, 1977 and 2015, the City could need to make up 19,100 AF of water supply. In drier years as the amount of surface water available to the City increases from 39,800 AFY to 54,900 AFY, based upon the unimpaired inflow on the American River, the anticipated shortfall decreases from 19,100 to 0 AFY.

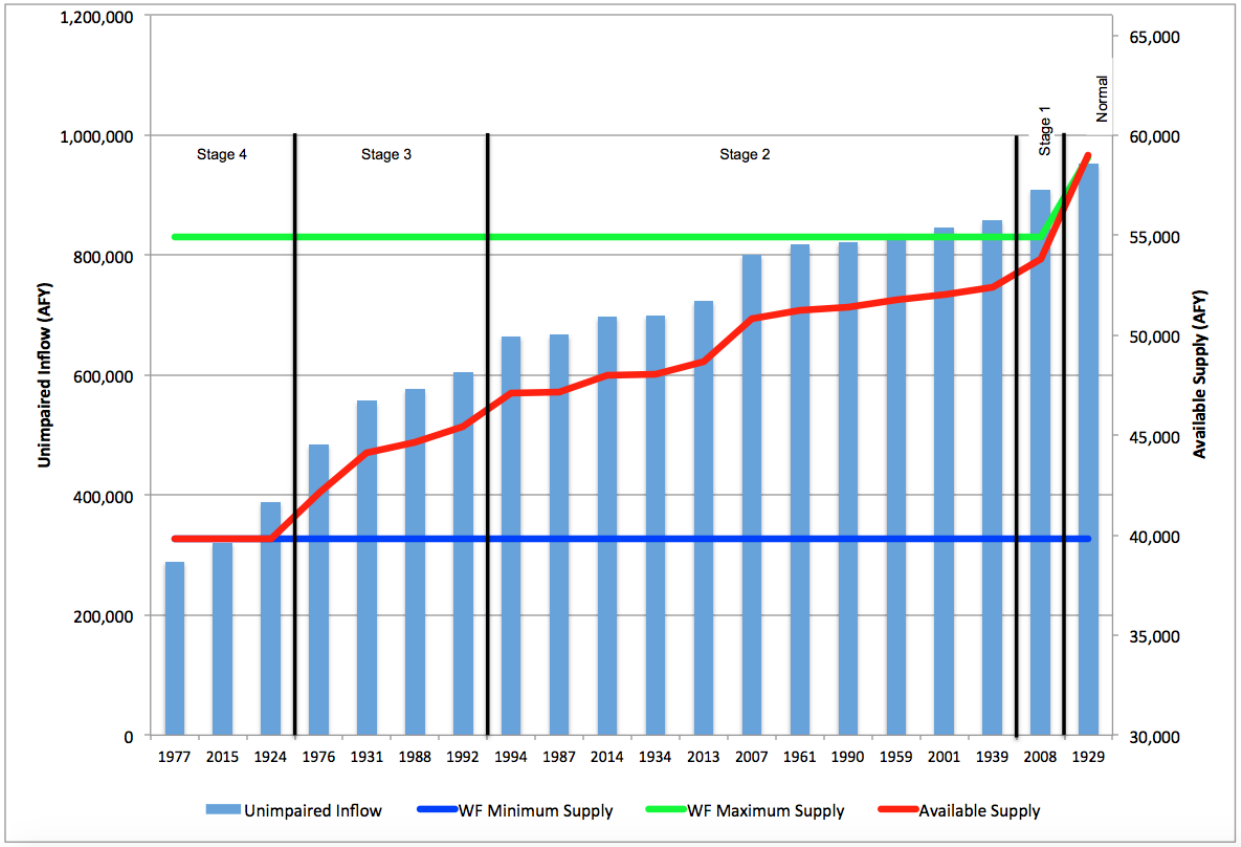
TABLE 13
WATER FORUM AGREEMENT
HISTORIC AMERICAN RIVER HYDROLOGIC FLOWS
NORMAL, DRY AND DRIEST YEARS

Year	Year Type	Annual Inflow AFY	Unimpaired Inflow [1] AFY	Available Surface Wtr AFY	Normal BO Demand AFY	Shortfall AFY
1977	Driest	520,190	289,740	39,800	58,900	-19,100
2015	Driest	Estimated	321,000	39800	59800	-19,100
1924	Driest	628,800	388,900	39,800	58,900	-19,100
1976	Drier	598,260	484,060	42,719	58,900	-16,181
1931	Drier	854,600	557,200	45,259	58,900	-13,641
1988	Drier	892,974	576,736	45,938	58,900	-12,962
1992	Drier	989,570	604,927	46,917	58,900	-11,983
1994	Drier	956,228	665,328	49,014	58,900	-9,886
1987	Drier	940,048	667,769	49,099	58,900	-9,801
2014	Drier	904,707	697,590	50,134	58,900	-8,766
1934	Drier	1,084,000	699,700	50,208	58,900	-8,692
2013	Drier	822,330	723,697	51,041	58,900	-7,859
2007	Drier	1,059,150	800,702	53,715	58,900	-5,185
1961	Drier	1,021,670	817,440	54,297	58,900	-4,603
1990	Drier	1,036,113	822,331	54,466	58,900	-4,434
1959	Drier	1,209,420	836,380	54,900	58,900	-4,000
2001	Drier	1,185,375	845,617	54,900	58,900	-4,000
1939	Drier	1,006,140	858,220	54,900	58,900	-4,000
2008	Drier	1,002,162	909,734	54,900	58,900	-4,000
1929	Normal	1,255,100	952,600	58,900	58,900	0

1- Unimpaired inflow is the March through November inflows from the American River into Folsom Reservoir.

Figure 5 graphically shows how the estimated shortfall determined in **Table 13** would be evaluated and placed into corresponding drought stages.

FIGURE 5
SURFACE WATER SUPPLY SHORTFALLS DURING
HISTORIC AMERICAN RIVER HYDROLOGIC DRY AND DRIEST YEAR RECORDS



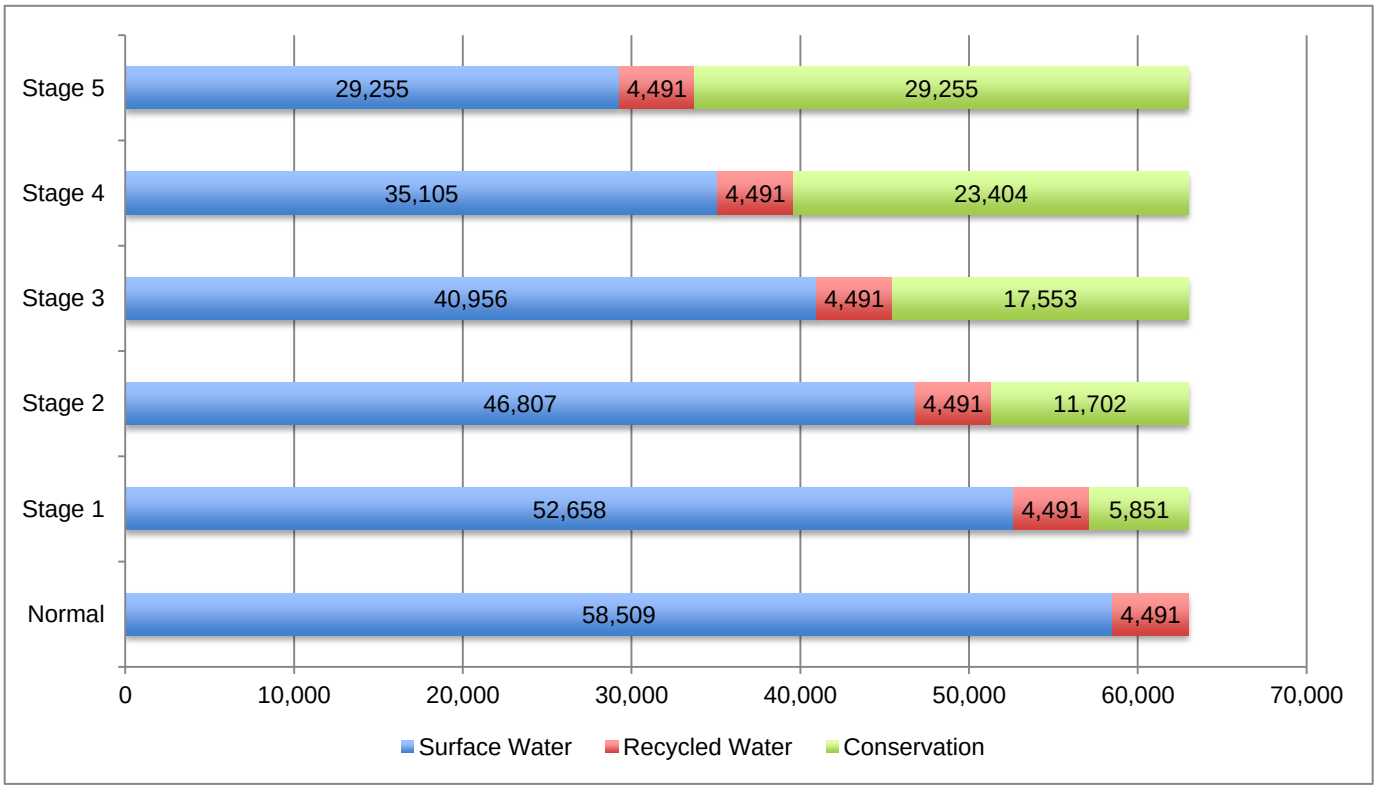
Build out demand for the City General Plan including the HPCO Master Plan is 63,000 AFY. The net potable water demand is 58,509 AFY. This is calculated by subtracting anticipated recycled water usage at build out from the build out water demand (63,000 AFY – 4,491 AFY). This amount is then compared to available surface water supplies. In a normal water year, there is 58,900 AFY available from the American River; available surface water supplies exceed build out potable water demands.

In drier and driest years, the City would need to make up the difference in supplies between 39,800 AFY; the minimum diversion allowed in driest years under the WF and 58,900 AFY; the City's normal year water diversion allowance (0 AFY to 19,100 AFY). This would be done through implementing conservation measures as identified in the RMC and supplementing available supplies with groundwater. As explained earlier, the RMC identifies five drought stages with varying degrees of reduction (10% to 50%). **Table 13** and **Figure 5** compare projected build out demands to available supplies based on 115 years of hydrologic record of the American River. The full history is contained in Appendix 7 to this WSA. The hydrologic record indicates that there were three (3) critically dry (driest) years and sixteen (16) drier years where City demands would need to be adjusted downward to conform to available surface water supplies. By way of example and

as shown on **Figure 5** a critically dry year could necessitate the implementation of up to a Stage Four drought to reduce water demands to a level that is comparable with available supplies. Drought Stages One, Two and Three would be required during drier years, depending on the level of shortfall in surface water supplies.

It is important to note that if the City is able to accomplish the recommended reductions in demand through more stringent conservation measures outlined in the Roseville Municipal Code, groundwater may not be needed to supplement supplies. This is depicted in **Figure 6** below.

FIGURE 6
DRY AND DRIEST YEAR SUPPLY
SCENARIOS USING 5 STAGES OF WATER CONSERVATION
Build Out Demand Totals 63,000 AFY

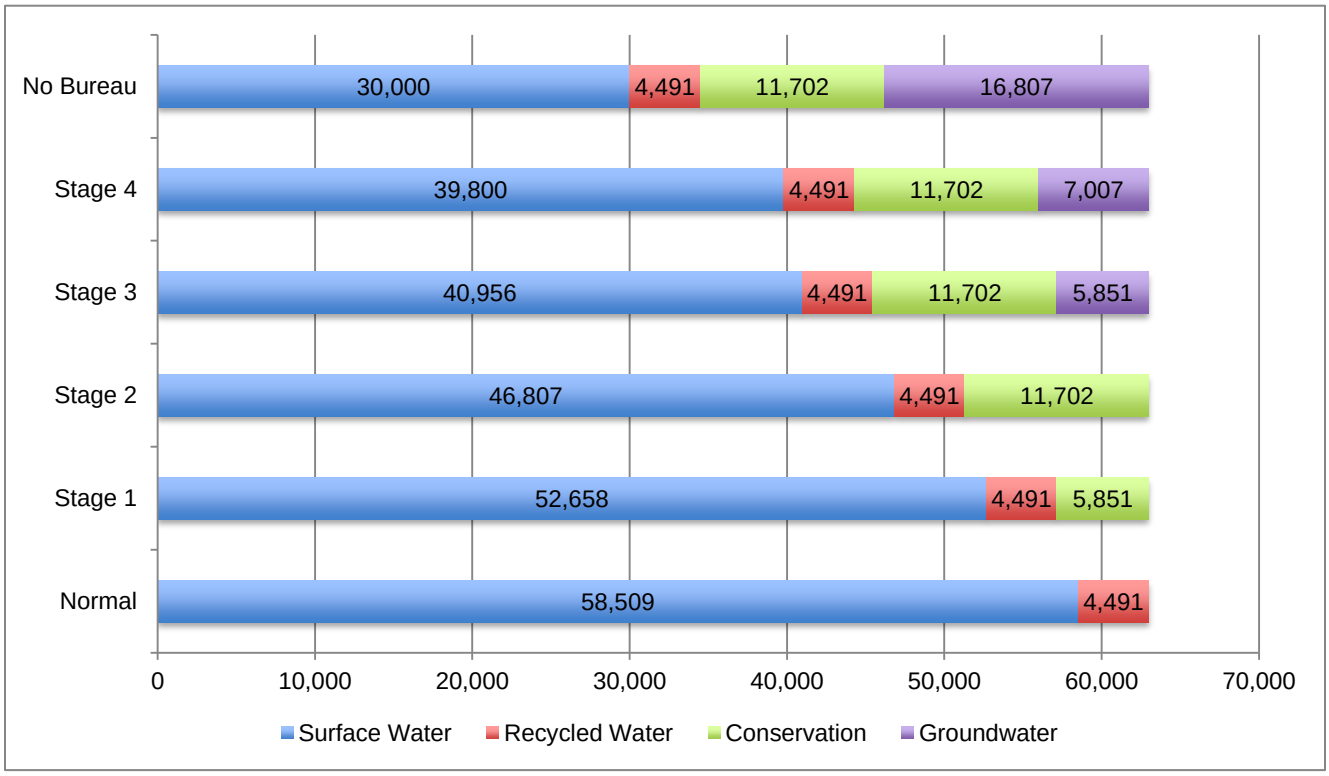


However, to ensure a highly reliable water supply for the City, this WSA assumes only a 20 percent reduction of surface water demands through conservation (20% of 58,509 AFY = 11,702 AFY). The 115 years of hydrologic data includes the 1977, 1924 and 2015 droughts of record. This record provides a good picture of what could be anticipated as future unimpaired flows in the American River. The record indicates that there would be 19 years out of 115 that would require some level of conservation. Depending on water delivery patterns (WFA or OCAP) the number of years in which groundwater is required is different. Each is described below.

WFA Scenario

Of the 7 years out of 115 when supplemental supplies are required to meet demands and assuming only a 20 percent reduction in water demand through conservation efforts, only 7 years would require groundwater pumping to make up for shortfalls in surface water supplies. Given the City's ability to divert up to 39,800 AFY of surface water under its WFA, only a Stage 4 level of conservation is needed to meet build out demands (assuming both CVP and PCWA supplies are available). The total amount of groundwater extracted over the life of the HPCO Master Plan is based on the need to pump groundwater in only 7 out of 115 years. The offsetting amount of groundwater is 30,680 over time included in the City's base extraction amount. The annual amount groundwater used varies depending on the year type, but ranges from a high of 7,007 AFY to a low of 0 AFY. In the unlikely event that CVP supplies were not allocated in a given year, the City would rely on 3,000 AF of PCWA surface water supplies, 4,491 AF of recycled water supplies, 11,702 AF demand reduction through conservation (conservatively assumed at 20%) and up to 16,807 AF of groundwater supplies as depicted on Figure 7 below.

FIGURE 7
DRIER AND DRIEST YEAR SUPPLY SCENARIO
20% WATER CONSERVATION
Build Out Demand Totals 63,000 AFY



In addition to groundwater to supplement surface water supplies during drought conditions, the City has identified groundwater as a backup supply for the recycled water system to bolster reliability. It is assumed that 11 AFY of groundwater could be required during emergencies such as a plant outage to back up the

recycled water system. This is based upon 1.8 million gallons per day for a period of two days. Additionally, it was assumed an emergency could occur once every five years. Thus, for the life of the HPCO Master Plan (assumed to be the hydrologic record of 115 years) up to 220 AF of groundwater could be required, this would result in a total extraction of groundwater over 115 years of 30,900 AF (30,680 AF + 220 AF).

OCAP Scenario

Additional supplies are needed 10 years out of 100 to meet demands, assuming only a 20 percent reduction in water demand through conservation efforts, In other words, it is estimated that in 10 out of a 100 years groundwater pumping would be required to make up for shortfalls in surface water supplies. The total amount of groundwater extracted over the life of the HPCO Master Plan (based on the 100 year hydrologic record and the need to pump groundwater in only 10 of 100 years) would be 51,057 AF. The annual amount varies depending on the year type, but like with the WFA scenario ranges from a high of 7,007 AFY to a low of 0 AFY and as previously depicted in **Figure 7**. An additional 220 AF of groundwater was added during the analysis period of the project (100 years) to supplement recycled water supplies as a backup condition such as a plant outage. Thus for the life of the HPCO Master Plan (assumed to be the hydrologic record of 100 years) under the OCAP Scenario, total extraction of groundwater over 100 years would total 51,227 AF (51,057 AF + 220 AF).

Section 10910(d)(1) Identify existing water supplies for the proposed project.

Existing surface water, recycled water, and groundwater supplies for the City of Roseville are described under Section 10910(c)(4), above.

Section 10910(d)(2)(A) Demonstrate existing water supply entitlements, water rights or water service contracts through written contracts or other proof.

Documentation for water entitlement contracts is contained in Appendix 8. Included are:

- United States Bureau of Reclamation Long-Term water supply No. 14-06-200-3474A
- PWCA Water Supply Contract dated September 1, 2010
- United States Bureau of Reclamation Contract for Conveyance of Non-Project Water between the United States and City of Roseville No. 02-WC-20-2217
- San Juan Water District - Water Supply Contract dated February 7, 2001 for 800 AFY and June 18, 2003 for 3200 AFY.

Section 10910(d)(2)(B) Provide copy of capital outlay program for financing of a water supply that has been adopted by the public water system.

Financing for water supply facilities are included in the City's Capital Improvement Projects (CIP). A list of Capitol Improvement Projects to be constructed over the next five years is provided in the City's annual budget document. Copies of the budget document are available at the City's Finance Department. Financing of these projects is through a combination of connection fees paid on new construction and general obligation bonds. A projected fund balance tied to the Capital Improvement Project schedule is also available at the City's Finance Department.

The Water Utility's 5-year capitol improvement budget is contained in the annual budget book available on line at: http://www.roseville.ca.us/gov/finance/budget.asp. The full CIP can be obtained from the Environmental Utilities Department. The City completed a connection fee update in 2015 which includes the most recent list of projects anticipated through City build out. Recognize that the CIP is an evolving list of projects that changes with land use actions taken by the Council. For example, after the Sierra Vista and Creekview Specific Plan approvals, the CIP needed to be updated to reflect additional capital projects identified in their respective Development Agreements. The next CIP and connection fee update is schedule for some time in 2018.

Section 10910(d)(2)(C) Identify any federal, state, and local permits required for construction of the facilities identified for delivering the water supply to the proposed project.

The majority of the proposed water transmission facilities will be located in proposed City public rights-of-way and with City approved plans. A final list of permit requirements for proposed facilities will be identified after the City's review of the corresponding improvement plans. Likely permit requirements include grading permits, tree permits and other local, state or federal permits identified in the environmental document for the HPCO Master Plan.

At this time, there are no known permits or contracts needed to supply the HPCO Master Plan with utility service. Permits for development are related to onsite improvements, not for expanding treatment or transmission facilities.

Permits in hand:

1) Warren Act Contract with US Bureau of Reclamation
2) ASR General Permit from State Water Resources Control Board
3) Master Reclamation Permit from the Central Valley Regional Water Quality Control Board

The three permits / contracts are in place to use with existing water supply contracts. When excess water is available, the City operates its Aquifer Storage and Recovery (ASR) program. Use of the City's ASR program was not possible without the approval of the General Permit from the State Water Resources Control Board.

Section 10910(d)(2)(D) Identify any necessary regulatory approvals required to convey or deliver the water supply to the proposed project.

Long-term water supply from the CVP is the primary source of water for the City of Roseville. The existing contract was valid through 2011. At this time, the City's CVP contract is on 2-year interim renewals until the Bureau of Reclamation has completed their environmental evaluations necessary to sign long-term contracts. Contract conditions have been negotiated identifying the life of the renewal contract of 40 years. Other contractual provisions of the interim contracts are the same as anticipated in the long-term agreement. Roseville has established the need for the full contract amount of 32,000 AFY. The City is waiting to move complete long-term contract negotiations, and there has been no indication from Bureau staff when negotiations will resume.

Roseville will be the recycled water provider for the HPCO. Roseville staff will work the project proponent to ensure that the Engineering Report is compliant with the City's Master Reclamation Permit. The State Department of Public Health and the Central Valley Regional Water Quality Control Board must review and approve an Engineering Report documenting the proposed use of recycled water within the project area prior to recycled water use within the plan area.

Section 10910(e) Identify other public water system or water contract holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system for the proposed project.

The City's diversion point for its American River water supply is at Folsom Lake. Other water purveyors with water contracts or water supply entitlements that receive water from the American River include: US Bureau of Reclamation, City of Folsom, San Juan Water District, Fair Oaks Water District, Orange Vale Water Company, Citrus Heights Water District, Sacramento Municipal Utility District, Placer County Water Agency, Folsom State Prison, El Dorado Irrigation District, Carmichael Water District, City of Sacramento, Sacramento Suburban Water District and East Bay Municipal Utility District.

The City of Roseville is a signatory to the Water Forum Agreement. The Water Forum is a Regional Plan developed by the Sacramento Area Water Forum and Foothill Forum Water Group with the objective for safe, reliable, and environmentally sound water supplies from the American River watershed, the source of Roseville contract water. A number of stakeholders were involved in the planning process focusing on a Regional Water

Agreement, which identified the resources needed to meet 2030 water demands. A copy of the Water Forum Agreement is available for review online at http://www.waterforum.org/agreement.cfm.

Section 10910(f)(1) Review any information contained in the UWMP relevant to the identified groundwater supply for the proposed project.

Because the HPCO Master Plan is an infill project, the water demand was included in the 2010 UWMP. The 2010 UWMP includes information pertaining to the local groundwater basin. As identified in the UWMP, the primary source of water supply for the City's service area is surface water from Folsom Lake and recycled water. Although there are no the restrictions on the use of groundwater identified in the Water Forum Agreement groundwater was only projected to be used in times of drought and water shortage, but has been expanded to include operational flexibility with the development of the Aquifer Storage and Recovery Program. Bureau studies estimated that groundwater will only be required in approximately 15 percent of the years. As documented in Section 10910 (c)(3) and (c)(4) above, the City estimates that groundwater may be used in 7 out of a 115 years under the Water Forum Agreement Scenario or up to 12 out of a 100 years under the OCAP Scenario.

Section 10910(f)(2) Describe any groundwater basin from which the proposed project will be supplied. Include information as to whether the Department of Water Resources has identified the basin as over drafted or has projected that the basin will become over drafted.

Portions of Placer, Sutter, and Sacramento counties are situated over the North American sub-basin. The sub-basin is delineated by the Bear River on the north, the Feather River and Sacramento River on the west the American River on the south and the Sierra-Nevada Range on the east. The sub-basin encompasses 351,000 acres (548 square miles), which is part of a much larger groundwater basin that under lays most of the Central Valley of California. Drainage in the sub-basin is west-southwest at an average five percent grade.

The eastern boundary of the sub-basin is a north-south line extending from the Bear River south to Folsom Lake, passing about 2 miles east of Lincoln and is the approximate edge of the alluvial basin, where little or no groundwater flows into or out of the basin from the Sierra Nevada. The western portion of the sub-basin is a flat flood basin for the Bear, Feather, Sacramento, and American Rivers and several small east-side tributaries.

Various geologic formations comprise the water-bearing deposits that underlie the region. These formations include an upper aquifer system consisting of the Riverbank (formerly known as Victor) and Turlock Lake/Laguna (formerly known as Fair Oaks-Laguna Formations), and a lower aquifer system consisting primarily of the Mehrten Formation. These formations are typically composed of lenses of inter-bedded sand, silt, and clay interlaced with coarse-grained stream channel deposits. These deposits form a

wedge thickening from east to west at a fairy constant rate to a maximum thickness of 2,000 feet near the Sacramento River.

Groundwater occurs in an unconfined to semi-confined state throughout the region. A confined aquifer state occurs in aquifers that have overlying stratum of low permeability. Groundwater under a confined state is described in terms of its piezometric surface elevation rather than a water surface elevation. The piezometric surface elevation is the elevation of water within a piezometer or well that is screened only in the confined or semi-confined aquifer. The groundwater surface elevation is the elevation of water in an unconfined aquifer. Semi-confinement can occur in local areas, and the degree of confinement typically increases with depth. Groundwater in the Riverbank and Turlock Lake/Laguna Formations is typically unconfined. The deeper Mehrten Formation, a major source of groundwater, exhibits semi-confined conditions.

The California Department of Water Resources (DWR) has not identified the basin as an over drafted basin. Groundwater levels in southwestern Placer County and northern Sacramento County have generally decreased between 1947 through 1997. Many wells experienced declines at a rate of about one and one-half feet per year with some of the largest decreases occurring in the area of McClellan AFB. After 1997 water levels seem to stabilize implying that the basin is in a state of equilibrium. Groundwater levels in Sutter and northern Placer Counties generally have remained stable, although some wells in southern Sutter County have experienced declines.

The groundwater basin has historically been primarily pumped for agricultural purposes, but some urban uses have occurred. The Western Placer Sustainable Yield analysis (WPSY) prepared by GEI Consultants, dated November 2013 indicates that the basin under western Placer has a potential safe yield of 100,000 AFY. Safe yield is defined as the amount of groundwater that can be continuously withdrawn from the basin without having an adverse impact – sometimes referred to as an annual average in acre-feet per year (AFY). The WPSY also estimated average annual agriculture and urban demands in western Placer County have been 100,000 AFY. Under these pumping conditions, the groundwater levels at the southern end of the basin have been stable since 1982 and at the northern end of the basin levels have risen slightly. Stable groundwater levels indicate that groundwater pumping is currently in balance with the natural groundwater recharge rate.

Groundwater elevations have been monitored by DWR for several decades. There are three groundwater wells in the DWR monitoring network in and immediately adjacent to the western edge of the City. One well is located adjacent to Pleasant Grove Boulevard. A second well is east of the WRSP along Kaseberg Creek southeast of the intersection of Fiddyment and Phillip Roads. The third well is located on City-owned land north of the WRSP. Data for the first well indicate rising groundwater elevations since about 1977, which could be attributable to a decrease in agricultural pumping or recharge into a subsurface channel system. In 2002, the groundwater elevation ranged from 45 to 47 feet above mean sea level (msl). The second well, which has not been monitored since 1993, shows almost stable groundwater elevations since about 1980. Reported groundwater elevations in the well in 1993 were 17 to 20 feet msl. The westernmost well has also been stable since about 1980, and decreased agricultural water use in the area suggests water table levels are rising. In

2002, groundwater elevations ranged from a low of 24 feet msl in November to a high of 17 feet msl in April. Bulletin 118 prepared by the California Department of Water Resources identifies eleven groundwater basins as being in a critical condition of overdraft. The North American sub-basin is not one of the eleven basins identified.

These stable groundwater conditions may be attributed to the conversion of agricultural lands to urban uses over the past several decades. With the land conversions pumping demands have decreased, especially for heavy pumping uses, such as rice farming. It is expected that basin pumping demands will continue to decrease over time. According to the IWRP, urban development within the Placer Vineyards, Curry Creek and West of Lincoln study areas alone are estimated to reduce agricultural groundwater pumping demands by 20,000 AFY over time. If these pumping demands are not replaced by other equivalent pumping demands, it is expected to result in improvements to the condition of the basin. There are no existing legal constraints that limit groundwater pumping. In theory, the recent Groundwater Management Act will ultimately lead to limits on the use of the aquifer. In crude terms, the sustainable yield will dictate what can be permitted. This will take many years to work out.

Section 10910(f)(3) Describe the amount and location of groundwater pumped by the public water system for the past five (5) years.

The City extracted 439 AF of groundwater in Phase 1 testing (Sept 2004) and 2,140 AF during Phase 2 testing (Feb 2008). Over the past six years (2008-2014), the City has extracted 296 AF, but has injected 2,603 AF as part of its on going banking program.

Use of groundwater is part of the City of Roseville's current water supply portfolio, with its primary purpose to be used for back-up supplies during dry years or to provide operational flexibility through a conjunctive use program.

Section 10910(f)(4) Describe the amount and location of groundwater projected to be pumped by the public water system from any basin from which the proposed project will be supplied.

The use of groundwater is part of the City of Roseville's current water supply strategy, used for short-term back-up supply during dry years and as an emergency backup for the recycled water system. Based upon the estimated water demand for the HPCO Master Plan, and as shown in **Figure 7**, a maximum of 16,807 AFY of groundwater could be required during a critically dry hydrologic year where USBR supply is not provided. Over the life of the HPCO Master Plan and as described in Section 101910(c)(2) above, under the OCAP Scenario, a total of 51,277 AF of groundwater would be required. This includes groundwater to supplement surface water supplies during drought conditions to meet City plus project build out and 220 AF of groundwater as emergency backup supply for the recycled water

system.

Section 10910(f)(5) Analyze the sufficiency of the groundwater from the basin from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.

As indicated in Section 10910(f)(4) above, surface water is the primary source of supply to serve the Master Plan site. During normal/wet year types (86% of the years) groundwater is not required to meet water system demands. During 12% of the years (over a 100 year period and under the OCAP Scenario) up to 7,007 AFY or a lifetime draw of 51,277 AF of groundwater would be extracted from the basin to meet dry year water supply needs and supplemental recycled water demands.

The groundwater basin has historically been pumped by agricultural and urban uses. Over the past several decades, agricultural land has been converted to urban uses. With the land conversions, especially of formerly heavy pumping uses such as rice farming, pumping demands have decreased. It is expected that basin pumping demands will continue to decrease over time. If pumping demands are not replaced by other equivalent pumping demands, it is expected to result in improvements to the condition of the basin. There are no existing legal constraints that limit groundwater pumping and the Western Placer Sustainable Yield analysis (WPSY) prepared by GEI Consultants dated November 2013 indicates the sustainable yield of 100,000 AFY for the western Placer County portion of the basin based on current groundwater level stability at these pumping levels. The recent Groundwater Management Act will ultimately lead to limits on the use of the aquifer. In crude terms, the sustainable yield will dictate what can be permitted. This will take many years to work out.

Table 14 Sub-Basin Sustainable Yield Summary	
Summary of Inflows	
	AFY
Net Percolation	10,852
City of Roseville ASR Injection	158
Un-gaged Watersheds	4,902
Total Inflow form Streams	79,126
Inflow from Sutter County	28,033
Inflow from Sacramento County	5,934
Inflow Summary	**AFY**
Total Inflow (Active Portion of Domain):	129,005
Summary of Outflows	
	AFY
Groundwater Extraction	98,593
City of Roseville ASR Extraction	440
Outflow to Sutter County	15,684
Outflow to Sacramento County	12,954
Outflow Summary	**AFY**
Total Outflow (Active Portion of Domain):	127,671
Change in Storage	
	AFY
Inflow - Outflow	1,334

Table 14, take from the Western Placer County Sustainable Yield analysis reaffirms the fact that the basin is not in an overdraft condition but is annually increasing storage contributions.

Further, a review of potential basin impacts incorporates the results of a groundwater impact analysis prepared by MWH in June 2003 as part of the West Roseville Specific Plan (WRSP) project. This report, MWH Groundwater Impact Report, is included in Appendix 9. The MWH report used the North American River and Sacramento County Combined Integrated Groundwater and Surface Water Model (IGSM) to simulate groundwater conditions. This model was originally developed for the American River Water Resources Investigation (ARWRI) and later updated by the American River Basin Cooperating Agencies for the Regional Water Master Plan.

The groundwater impacts described in the MHW Groundwater Impact Report were defined as the incremental

changes between the groundwater conditions corresponding to a baseline condition, which does not include development of the City's WRSP Area and groundwater conditions resulting after the WRSP Area has been developed. The following assumptions were made for the analysis of mitigating the dry-year groundwater use, which assumed fallowing of the City owned Reason Farms property:

- 1,080 acres fallowed,
- 6,483 AFY of groundwater required to meet crop irrigation demand,
- 2,632 AFY of groundwater return by deep percolation of irrigation water,
- Net 3,151 AFY of groundwater recharge "banked" and available for other uses, based strictly on mass balance of water in system. (6,483 AFY – 2,632 AFY for percolation 700 AFY for current cattle ranching operations).

To characterize the impacts to groundwater, this WSA analyzes the most conservative dry year scenario, the OCAP Scenario, when there are more years when supplemental groundwater is required. As previously described, based upon historic American River hydrologic data, it is estimated that under the OCAP, in 12% of the years groundwater could be required to supplement reduced surface water supplies. In 88% of the years, groundwater would not be required. The analysis calculates the volume of water that is "banked" or saved as a result of land retirement from Reason Farms and compares that to the volume of groundwater anticipated to be extracted over the same time period (115 years). This analysis is summarized below.

Using 3,151 AFY of banked groundwater available for beneficial use as a result of land retirement at Reason Farms and applying it over the period of the hydrologic record during which water supplies are not reduced (88 of 100 years), a total 277,288 AF of groundwater would be saved (3,151 AFY x 88 years). The projected groundwater needs for the City over this same time period under the more conservative OCAP scenario (51,277 AF) results in a net storage volume of groundwater of 226,011 AF (277,288 AF – 51,277 AF). This is an average annual groundwater savings of 2,260 AFY over 100 years. Under these conditions the groundwater basin is expected to increase as a result of eliminating rice farming at Reasons Farms even with the City and ARSP's projected groundwater demands. It is also expected that implementation of the City's Aquifer Storage and Recovery program, where treated surface water is stored in the groundwater basin, will likely increase groundwater levels.

Because the proposed project is expected to use less water than that identified as available from groundwater banking, adverse impacts to the groundwater basin are not anticipated. The numbers supporting this conclusion are shown in **Table 15**.

Table 15
Groundwater Needs at Build Out
USBR OCAP Dry Year Scenario

Type of Groundwater Use	GW Demand AFY	Frequency of Occurrence in a 100 Years	Annually Banked AFY	Total AF
Maximum dry year supply to supplement surface water	7,007 to 0	12		51,057
Recycled water emergency backup supply	11	20		220
Total Groundwater Demand				51,277
Banked Groundwater From Reasons Farms		88	3,151	277,288
Net Groundwater Banked				226,011

DETERMINATION OF SUFFICIENCY

The City of Roseville currently uses multiple sources of water, including, surface water, recycled water, and groundwater to serve existing and future customers. Roseville's long-standing policy is not to over allocate their contractual supplies. This means that the City Council will not effectuate a land use action without ensuring that a water supply exists for the proposed project. For projects who's implementation period extends past the 20-year planning horizon, they can be assured that the City has water set aside for the project, with a amount certain based on the adopted land use type for the various parcels.

Based upon the City's total projected water supplies for normal, single-dry, and multiple-dry years over a 20-year projection, as demonstrated by this WSA, the City has sufficient water to meet projected water demands for the Hewlett-Packard / Campus Oaks Mater Rezone & Master Plan Project. .

Appendix 1 - TM-1 – Unit Water Demand Factor Verification and Water Demand Evaluation and Update by MWH, September 2002

Appendix 2 - MWH – TM completed in 2006

Appendix 3 – Letter from Kelye McKinney on Available Water Supply on the Campus Oaks Area of the Hewlett-Packard / Campus Oaks Mater Rezone & Master Plan Project

Appendix 4 – Hewlett-Packard / Campus Oaks Mater Rezone & Master Plan Project, Water System Master Plan for Campus Oaks Area

Appendix 5 - Hewlett-Packard / Campus Oaks Mater Rezone & Master Plan Project, Water Conservation Plan

Appendix 6 - Effects of Changed Water Management Operations on Fisheries and Water Quality Impacts Previously Disclosed in the Water Form Agreement EIR, Robertson-Bryan Inc. and HDR, October 2009.

Appendix 7 – 100 years of Hydrologic Flow Data into Folsom Reservoir on the American River

Appendix 8 – City of Roseville Water Supply Contracts

Appendix 9 - MWH Groundwater Impact Report

CITY OF ROSEVILLE, CALIFORNIA

HEWLETT PACKARD/CAMPUS OAKS REZONE & MASTER PLAN PROJECT

M&P Project No. 130076-00 (v.1)

SANITARY SEWER MASTER PLAN STUDY

May 28, 2015

PREPARED BY:

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SANITARY SEWER MASTER PLAN STUDY

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LIST OF APPENDICES:

Appendix A: Land Use Summary

Appendix B: Sanitary Sewer Infrastructure Plan

Appendix C: Sewer Shed Map (Post-Development Conditions)

Appendix D: Sewer System Design Calculations

Appendix E: Peaking Factor Curve

Appendix F: 1996 Hewlett Packard Master Plan

I. INTRODUCTION

STUDY PURPOSE AND OBJECTIVES

The purpose of this Sanitary Sewer Study (Study) is to define parcels to be served by sanitary sewer, calculate demands, and properly size the sanitary sewer system within the Hewlett-Packard/Campus Oaks (HPCO) Master Plan Amendment Area to meet the City of Roseville's (City) sanitary sewer infrastructure operating goals.

The primary objective of this Study is to set forth the sanitary sewer infrastructure requirements of the HPCO-MASTER PLAN. This Study, in part, satisfies the need to provide sufficient information on the sanitary sewer demands and conveyance system to assist in the review and approval of the improvement plans within the HPCO-Master Plan.

PROJECT DESCRIPTION

Hewlett-Packard and BBC Roseville Oaks, LLC have proposed an amendment to the *Hewlett-Packard Roseville Campus Master Plan* that would reconfigure the land uses and infrastructure on a portion of the Master Plan Area. The Hewlett-Packard Roseville Campus Master Plan establishes development regulations for 492.2 acres at the southwest corner of Blue Oaks and Foothills Boulevards within the City of Roseville's North Industrial Planning Area (see Figure 1). Originally adopted in June 1996, the Master Plan envisioned a manufacturing and office campus to accommodate Hewlett-Packard's existing and planned operations. Hewlett-Packard has subsequently adjusted its facilities needs for the Roseville campus, divesting its ownership in all but a portion of the Master Plan Area.

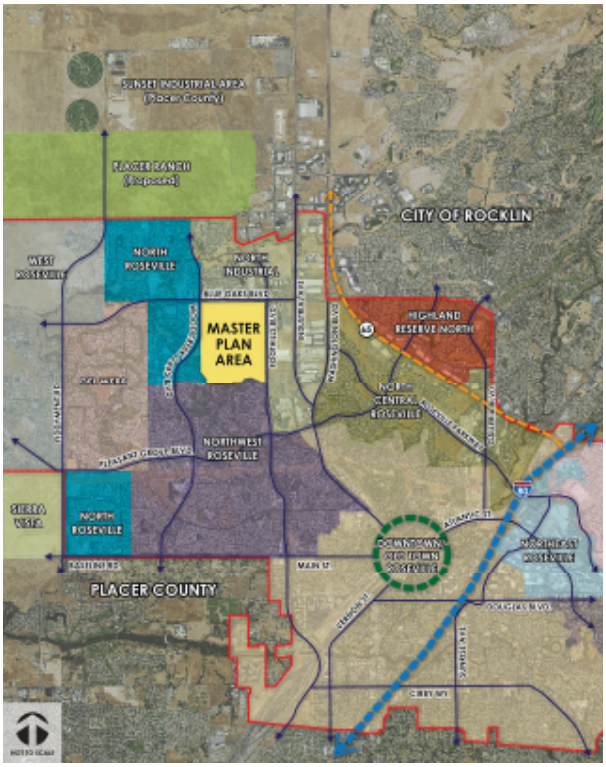


Figure 1 - Project Location

Figure 2 – HPCO Amendment Area

The proposed amendment to the Master Plan, **the Hewlett-Packard|Campus Oaks (HPCO) Master Plan Amendment**, provides for a mixed use community on a 375.7 acre portion of the original Master Plan Area (See Figure 2). The HPCO Amendment Area is organized into two physically and functionally integrated sub-areas: the **Hewlett-Packard Campus** accommodating existing and planned light industrial, recreation and related uses; and **Campus Oaks** planned for a new mix of tech/business park, office, commercial, residential, park and recreation, open space and public uses. The HPCO Master Plan Amendment supersedes all prior Master Plan requirements for the HPCO Amendment Area.

PROJECT SETTING

The HPCO Amendment Area has been designated for development for over 35 years. Surrounded by established employment, commercial and residential uses, the eastern portion of the Amendment Area is partially developed by Hewlett-Packard, one of Roseville's largest employers. The western portion of the Amendment Area, Campus Oaks, is undeveloped consisting primarily of annual grasslands with gently rolling topography that has been highly disturbed over time through bi-annual disk-plowing. The southern portion of Campus Oaks contains a City owned open space/wetland preserve along the South Branch of Pleasant Grove Creek.

PROPOSED PROJECT

The HPCO Master Plan Amendment establishes updated land use and zoning regulations, mobility and infrastructure plans, public services provisions, design guidelines, and development approval processes for the 375.6 acre Amendment Area. The remainder of the larger Master Plan Area will continue to be regulated by the existing *Hewlett-Packard Roseville Campus Master Plan*.

The HPCO Master Plan Amendment proposes to the retain the existing Light Industrial land use designation on a majority of the Hewlett Packard Campus, refining the square footage allocated to the Campus based upon Hewlett-Packard's projected development program. In addition, a City park is proposed on the western edge of the Campus.

The existing Light Industrial land use designation on Campus Oaks is proposed to be changed to a mix of tech/business park (LI), office, commercial, residential, park and recreation, open space and public uses. The existing City owned wetland preserve will be retained, and will be augmented by additional open space parcels.

The HPCO Master Plan Amendment includes proposed revisions to the mobility and utility systems to accommodate the revised land uses. The mobility system will include a modified grid street pattern that is connected to, and helps to complete, the City's larger roadway network; an interconnected system of paths, sidewalks and bike lanes; and multiple transit stops. HP Way will be constructed as a public roadway through the project site. Other roadway connections will include the extensions of New Meadow Drive from the north, and Painted Desert and Crimson Ridge Drives from the west.

The construction of backbone utility infrastructure will be necessary to accommodate full build-out of the Amendment Area. Water, recycled water, wastewater, drainage, electric, natural gas, and telecommunications infrastructure exist within and/or adjacent to the Amendment Area. Since adoption of the 1996 Master Plan, substantial development and associated infrastructure improvements have been constructed in the vicinity of the Amendment Area. The HPCO Amendment accounts for these changed conditions to define an updated and efficient backbone utility infrastructure program.

Proposed land uses within the HPCO Master Plan Area are summarized on Table 1, and illustrated on Figure 3.

Figure 3 – HPCO Master Plan Amendment

TABLE 1 – HPCO Master Plan Amendment Area Land Use Summary

Land Use	Gross Acres	Building Square Feet (sf)	Dwelling Units (du)						
		Existing	Future	Total Capacity	FAR Range	Avg. FAR	Units	du/ac Range	Avg. du/ac
EMPLOYMENT AND COMMERCIAL USES									
Light Industrial (LI)	129.24 ac	636,000 sf	564,000 sf	1,200,000 sf	20-50%	23%			
Tech/Business Park (T/BP-LI)	32.85 ac		300,000 sf	300,000 sf	20-40%	21%			
Business Professional (BP)	5.54 ac		60,000 sf	60,000 sf	20-40%	25%			
Community Commercial (CC)	19.29 ac		170,000 sf	170,000 sf	20-40%	20%			
Sub-Total	***186.92 ac***	***636,000 sf***	***1,094,000 sf***	***1,730,000 sf***		***21%***			
RESIDENTIAL USES									
Low Density (LDR)	46.76 ac						242 du	0.5-6.9	5.2
Medium Density (MDR)	35.60 ac						310 du	7.0-12.9	8.7
High Density (HDR)	21.97 ac						396 du	13.0+	18.0
Sub-Total	***104.33 ac***						***948 du***		***9.1***
PARK, OPEN SPACE AND PUBLIC USES									
Park & Recreation (P/R)	19.44 ac								
Paseo (P/R)	2.25 ac								
Open Space (OS)	46.35 ac								
Public (P/QP)	2.97 ac								
Sub-Total	***71.01 ac***								
Backbone Roads	13.47 ac								
TOTAL	**375.73 ac**	***593,820 sf***	***1,094,000 sf***	**1,687,820 sf**		**21%**	**948 du**		**9.1**

NOTE: Existing development consists of Buildings R3 (126,220 sf), R4 (131,190 sf), R5 (158,760 sf), and R6 (177,650 sf).

II. DESIGN CRITERIA AND ANALYSIS

This analysis applies only to the proposed sewer system within the Campus Oaks portion of the HPCO-MASTER PLAN and the areas contributing to that system. To evaluate the on-site sanitary sewer system required to support the development of the HPCO-MASTER PLAN, the distribution of land use within the plan area was divided into sheds contributing to each sewer pipe (see Appendix-C) as the basis for computing the sewer system flows. These computed sewer flows are used to determine the preliminary sizes of pipes required to accommodate the development of the project.

AVERAGE FLOW DETERMINATION

The proposed land use for each sewer shed area contributing flows to the proposed system is shown on the Sewer Shed Map in Appendix-C. From the proposed land use, the average dry weather flow (ADWF) was computed based on the sewer generation rates presented in Table 2 below.

TABLE 2 – SEWER GENERATION RATES

Land Use	Generation Rate[1]	
Commercial	850	gpd/acre
Heavy Industrial	850	gpd/acre
Light Industrial	850	gpd/acre
Mixed Use	2300	gpd/acre
Public / Quasi Public	660	gpd/acre
School	170	gpd/acre
Residential (1 DU)	190	gpd/DU
Residential (2 DU)	190	gpd/DU
Residential (3 DU)	190	gpd/DU
Residential (Multiple DU)	130	gpd/DU
Parks > 10 Acres	10	gpd/acre

[1] Includes allowances for dry season groundwater infiltration (GWI).

DESIGN FLOW

Sanitary sewer flows are characterized by a diurnal curve, where flows tend to be low during early morning hours and at maximum sometime in the morning and again in the afternoon / evening hours. In addition, sewer flows will increase during wet weather as groundwater and rain water leaks into the system, which is called inflow and infiltration, or I/I. Groundwater (infiltration) seeps into sewer pipes through holes, cracks, joint failures, and faulty connections. Storm water (inflow) rapidly flows into sewers via roof drain downspouts, foundation drains, storm

drain cross-connections, and through holes in manhole covers. Most I/I is caused by aging infrastructure that needs maintenance or replacement.

In accordance with the City of Roseville standards, a safety factor of 2.0 must be applied to the ADWF for all infrastructure 15-inches and smaller. The result is called the factored flow. To obtain the design flow, the factored flow must be multiplied by a peaking factor to account for diurnal flows and wet weather inflow from storm water as mentioned above. The peaking factor is based on the peaking factor curve shown in Appendix-E. The resulting flow is called the peak wet weather flow (PWWF), which is used to determine pipe sizing.

PIPE DESIGN CRITERIA

Criteria for pipe sizing and design are listed below and are based on the City of Roseville design standards dated January 2013.

- Minimum Pipe Slopes: Shown in Table 3 below.

TABLE 3 – MINIMUM PIPE SLOPE CRITERIA

Pipe Diameter (in)	Minimum Pipe Slope (ft/ft)
6	0.0050
8	0.0035
10	0.0025
12	0.0020
15	0.0015

- Minimum Pipe Depth: Minimum depth of cover to be based on recommendations of the pipe manufacturer. For preliminary sizing of the Campus Oaks on-site sanitary sewer system, a minimum depth of cover of 5 feet from top of pipe to finished grade was assumed.

- Maximum Depth: Sewer mains with service laterals shall not exceed a depth of 15 feet.

- Pipe Material: Gravity mains shall be Vitrified Clay Pipe Bell and Spigot (VCP). Force mains shall be Ductile Iron Pipe (DIP) with Protecto 401 coating (or approved equal as determined and approved by EUD).

- Roughness Coefficient: The Manning's "n" used to calculate pipe capacity shall be 0.013 for VCP pipes.

- Pipe Velocity: A minimum scour velocity of 2.0 feet/sec and a maximum velocity of 10.0 feet/sec shall be maintained for all gravity sewer pipes.

- Elevation Criteria: A minimum drop of 0.10 feet shall be used between the inlet invert elevation and the outlet invert elevation of pipes with the same diameter. Invert elevations for pipe of different diameters shall match crown of the exiting pipe.

- Depth of Flow: Maximum depth of flow in pipes used in this analysis is shown in Table 4 below. A depth of flow of 1.0 is allowed for pipes 12-inches and larger if there are no direct sewer connections to the pipe.

TABLE 4 – MAXIMUM DESIGN FLOW DEPTH

Diameter (in.)	Design Flow Depth Ratio
6	0.70
8	0.70
10	0.70
12	1.0
15	1.0

III. ANALYSIS AND RESULTS

SEWER ANALYSIS

The HPCO-MASTER PLAN on-site gravity sewer system layout and the proposed land development plan were used to compute the average dry weather flow (ADWF) and peak wet weather flow (PWWF) for each pipe segment. Refer to Appendix-B for the Sewer Infrastructure Plan including the designated pipe segment labels. **The peak flow summary tables for each pipe are shown in Appendix-D.**

- Results showed that the portion of the HPCO-MASTER PLAN project with an outlet at Painted Desert Drive (Pipe S-1) will generate an ADWF flow of 0.12 million gallons per day (MGD) and a PWWF (with I/I) of 0.66 MGD.

- Results showed that the portion of the HPCO-MASTER PLAN project with an outlet at Crimson Ridge Way (Pipe S-5) will generate an ADWF flow of 0.06 million gallons per day (MGD) and a PWWF (with I/I) of 0.40 MGD.

- Results showed that the portion of the HPCO-MASTER PLAN project with an outlet along the southwest property line (Pipe S-7) will generate an ADWF flow of 0.10 million gallons per day (MGD) and a PWWF (with I/I) of 0.57 MGD.

- Results showed that the portion of the HPCO-MASTER PLAN project with an outlet to the existing stub between Blue Oaks Boulevard and Painted Desert Drive (Pipe S-11) will generate an ADWF flow of 0.01 million gallons per day (MGD) and a PWWF (with I/I) of 0.03 MGD.

Results for the total contributing sewer flows generated by the project are listed in Table 5 below:

TABLE 5 – TOTAL CONTRIBUTING SEWER FLOWS

Contributing Area	Average Dry Weather Flow (ADWF)	Peak Wet Weather Flow (PWWF)
Campus Oaks Development Area	0.21 MGD	1.29 MGD
Campus Oaks Development Area + Off-site Contributing Areas	0.28 MGD	1.67 MGD

The 1996 HP Master Plan designated the entire HPCO-MASTER PLAN project area (375.73 ac) to have a land use of light industrial and general commercial. This area includes the existing Hewlett Packard Campus (141.08 ac) and the planned development area of Campus Oaks (234.65 ac). To obtain sewer flows for the HPCO –Master Plan area based on the 1996 HP Master Plan land use, the current sewer flow rate of 850 gpd/ac for light industrial and general commercial land use was applied, and yielded an average sewer flow (ADWF) of 0.32 MGD. By comparison, the average sewer flow for the proposed HPCO-MASTER PLAN area based on the proposed project is 0.33 MGD. Peak Wet Weather flows were calculated as 1.94 MGD and 1.97 MGD respectively. Results are shown in Table 6 below.

TABLE 6 – TOTAL SEWER FLOW COMPARISON WITH 1996 MASTER PLAN

Contributing Area	Average Dry Weather Flow (ADWF)	Peak Wet Weather Flow (PWWF)
HPCO-Master Plan Area (1996 MP Land Use)	0.32 MGD	1.94 MGD
HPCO-Master Plan Area (Proposed Land Use)	0.33 MGD	1.97 MGD

SUMMARY OF RESULTS

Results show that the peak sewer flows that will be generated by the HPCO-MASTER PLAN project will be very close to the flows computed for the previously approved master plan, with a difference of 0.01 MGD for ADWF, and 0.03 MGD for PWWF. These differences are primarily due to the proposed changes in land use.

The proposed development of the HPCO-MASTER PLAN will entail constructing an on-site sewer system with three points of connection to the existing system in Woodcreek Oaks Boulevard. Based on the analysis results, the backbone sewer collection system will be composed entirely of gravity sewer mains ranging from 8-inches to 12-inches to convey flows from the project to the existing 36" main in Woodcreek Oaks Boulevard. All pipes 6-inches in diameter and smaller are assumed to not be part of the master planned facilities. The proposed sewer system is shown in the Sewer Infrastructure Plan in Appendix-B.

As shown in the Sewer Infrastructure Plan, there are four (4) proposed connection points to the existing system: one (1) to existing stub between Blue Oaks Boulevard and Painted Desert Drive, one (1) at Painted Desert Drive, one (1) at Crimson Ridge Way, and one (1) along the southwest property line adjacent to the City's open space parcel. The connections at Painted Dessert Drive and Crimson Ridge Way were already constructed with improvements for Phase 1 of the North Roseville Specific Plan Area. A new 10-inch connection will be required at the southwest property line connection point. These proposed sewer infrastructure improvements will provide sufficient capacity to accommodate flows from the full buildout of the HPCO-MASTER PLAN project.

APPENDIX A:

Land Use Summary

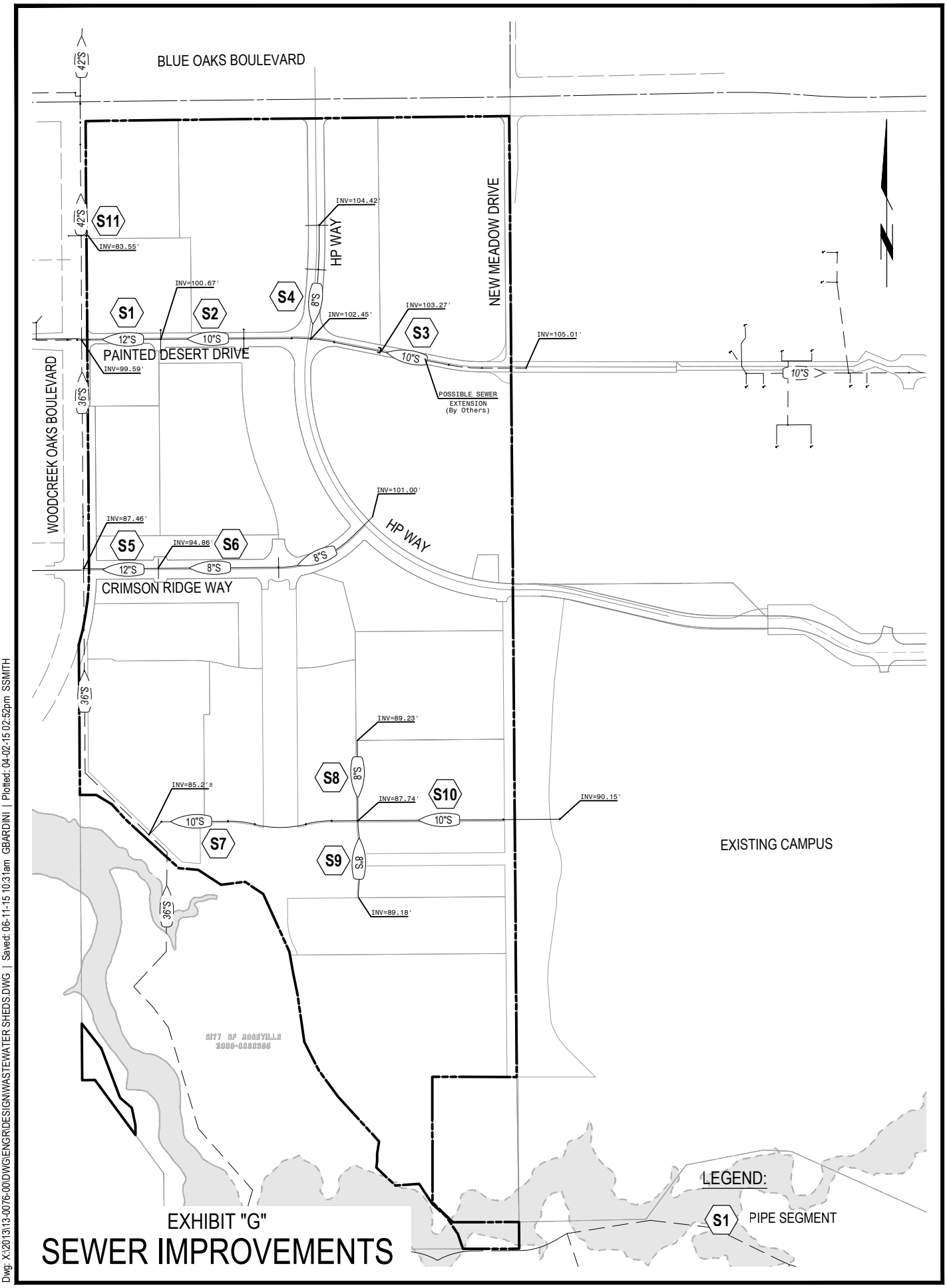
HEWLETT-PACKARD ROSEVILLE CAMPUS MASTER PLAN

LAND USE SUMMARY - January 12, 2015

PARCEL	LAND USE	ZONING	GROSS AREA (acres)	BUILDING SQUARE FEET (SF) EXISTING DEVELOPED	REMAINING CAPACITY	TOTAL	FLOOR AREA RATIO (FAR)	Dwelling Units (du) DENSITY (du/ac)	DU's (units)	AVERAGE LOT SIZE / PRODUCT TYPE
RESIDENTIAL										
LOW DENSITY RESIDENTIAL (0.5-6.9 du/ac)										
CO-1	LDR	RS/DS	6.10					5.9	36	50x100
CO-2	LDR	RS/DS	6.21					5.8	36	50X105
CO-3	LDR	R1/DS	16.53					3.9	64	60x110
CO-6	LDR	RS/DS	8.14					5.9	48	50x100
CO-7	LDR	RS/DS	9.78					5.9	58	50x100
Sub-Total:			**46.76**					**5.2**	**242**	
MEDIUM DENSITY RESIDENTIAL (7.0-12.9 du/ac)										
CO-4	MDR	R3/DS	8.37					10.0	84	Paseo
CO-5	MDR	R3/DS	4.69					9.8	46	Cluster
CO-11	MDR	R3/DS	4.72					7.2	34	Row
CO-12	MDR	R3/DS	4.88					7.0	34	Row
CO-13	MDR	R3/DS	3.34					7.2	24	Row
CO-14	MDR	R3/DS	4.43					11.3	50	Cluster
CO-15	MDR	R3/DS	2.62					7.3	19	Row
CO-16	MDR	R3/DS	2.55					7.5	19	Row
Sub-Total:			**35.60**					**8.7**	**310**	
HIGH DENSITY RESIDENTIAL (13.0 and above, Attached or Detached du/ac)										
CO-21	HDR	CMU/SA	5.00					25.0	125	APT
CO-22	HDR	R3/DS	7.26					16.4	119	Towns
CO-23	HDR	R3/DS	5.00					14.4	72	Towns
CO-24	HDR	R3/DS	4.71					17.0	80	Towns
Sub-Total:			**21.97**					**18.0**	**396**	
Residential Total:			**104.33**					**9.1**	**948**	
			25.7%							
COMMERCIAL AND EMPLOYMENT USES										
PROFESSIONAL OFFICE										
CO-31	BP	CMU/SA	5.54		60,000	60,000	24.86%			Prof. Office
Sub-Total:			**5.54**	-	60,000	**60,000**	24.86%			
COMMERCIAL										
CO-41	CC	CMU/SA	13.16		120,000	120,000	20.93%			Commercial
CO-42	CC	CMU/SA	6.13		50,000	50,000	18.72%			Commercial
Sub-Total:			**19.29**	-	170,000	**170,000**	20.23%			
TECH / BUSINESS PARK										
CO-51	BP	MP/SA	15.2		150,000	150,000	22.65%			Tech/Business Park
CO-52	BP	MP/SA	17.65		150,000	150,000	19.51%			Tech/Business Park
Sub-Total:			**32.85**	-	300,000	**300,000**	20.97%			
LIGHT INDUSTRIAL										
HP-1	LI	M1/SA	114	593,820	564,000	1,157,820	23.32%			Light Industrial
R1	*LI*	*M1/SA*			*200,000*	*200,000*				*Light Industrial*
R2	*LI*	*M1/SA*			*200,000*	*200,000*				*Light Industrial*
R3	*LI*	*M1/SA*		*126,220*		*126,220*				*Light Industrial*
R4	*LI*	*M1/SA*		*131,190*		*131,190*				*Light Industrial*
R5	*LI*	*M1/SA*		*158,760*		*158,760*				*Light Industrial*
R6	*LI*	*M1/SA*		*177,650*		*177,650*				*Light Industrial*
HP-3	LI	M1/SA	13.23		42,180	42,180	7.32%			Light Industrial
HP-4	LI	M1/SA	2.01		-	-	0.00%			Light Industrial
CV-1	LI	M1/SA	56.3	326,000	274,000	600,000	24.47%			Light Industrial
R10	*LI*	*M1/SA*		*326,000*		*326,000*				*Light Industrial*
Q-1	LI	M1/SA	58.44	312,000	588,000	900,000	35.35%			Light Industrial
R21	*LI*	*M1/SA*		*312,000*		*312,000*				*Light Industrial*
Sub-Total:			**243.98**	1,231,820	1,468,180	2,700,000	25.41%			
Commercial and Employment Total:			**301.66**	**1,231,820**	**1,998,180**	**3,230,000**				
			74.3%							
PARKS, OPEN SPACE & PUBLIC USES										
PARKS AND OPEN SPACE										
CO-61	P/R	PR	5.70							Park
CO-62	P/R	PR	2.62							Park
CO-63	P/R	PR	0.9							Paseo
CO-64	P/R	PR	2.42							Park
CO-65	P/R	PR	1.35							Paseo
HP-2	P/R	PR	8.7							Park
CO-81	OS	OS	0.84							Open Space
CO-82	OS	OS	0.86							Open Space
CO-83	OS	OS	44.65							Open Space
Parks and Open Space Total:			**68.04**							
PUBLIC										
CO-75	P/QP	P/QP	2.15							Fire Station
CO-76	P/QP	P/QP	0.32							Well Site
RE-1	P/QP	P/QP	0.5							Sub-Station
Public / Quasi-Public Total:			**2.97**							
Parks, Open Space & Public Uses Total:			**71.01**							
ROADS			15.17							
Campus Oaks			*10.71*							
HP			*2.76*							
Cokeva			*0.99*							
Quality			*0.71*							
Master Plan Total:			**492.17**	**1,231,820**	**1,998,180**	**3,230,000**			**948**	

APPENDIX B:

Sanitary Sewer Infrastructure Plan



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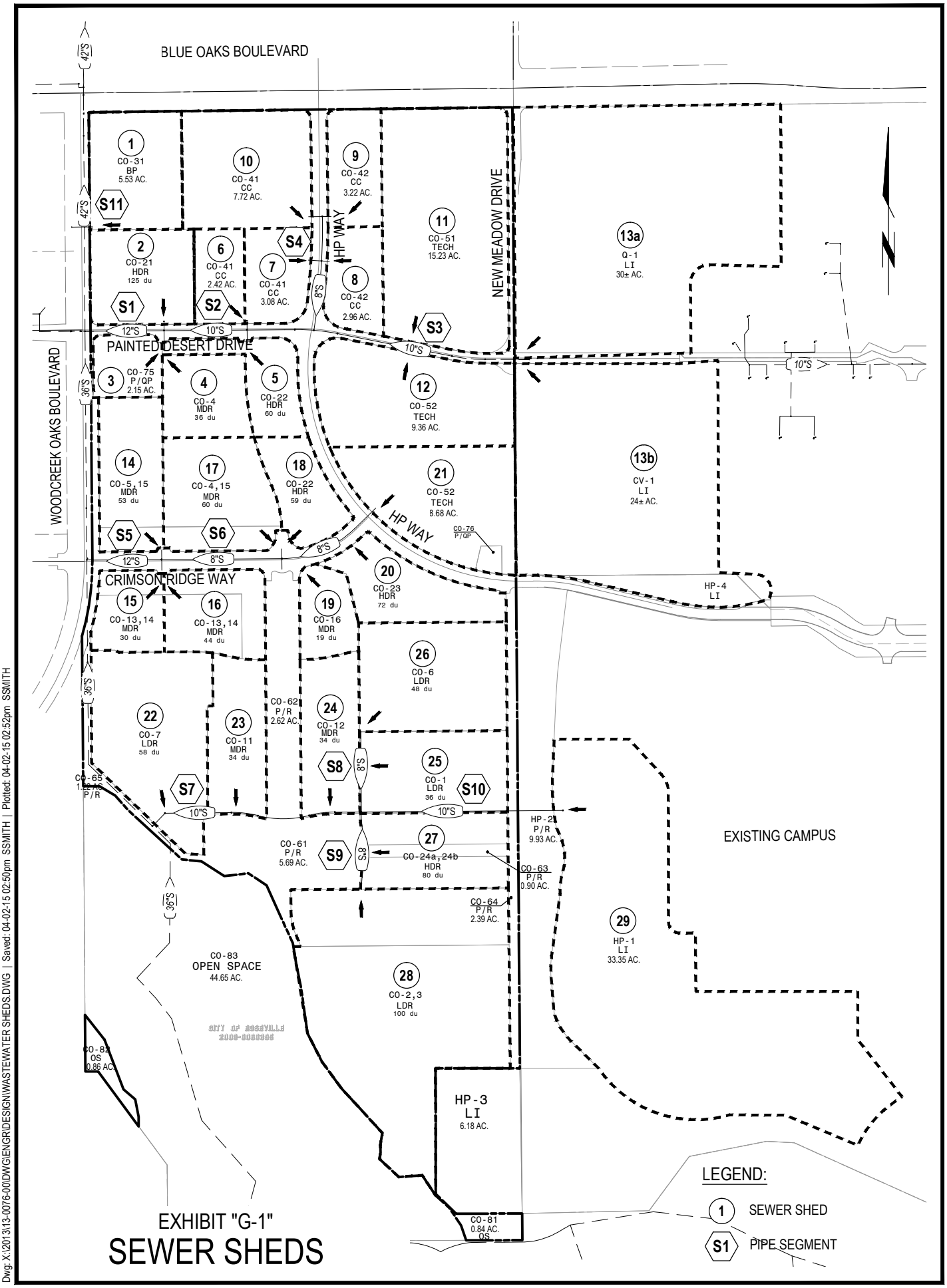
APPENDIX C:

Sewer Shed Map (Post-Development Conditions)



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APPENDIX D:

Sewer System Design Calculations

SEWER DESIGN CALCULATIONS

HP - Campus Oaks

May 28, 2015

Pipe Segment	Contributing Shed	Contributing Land Use												Contributing Shed Flow	Contributing Pipe Flow	ADWF	Safety Factor	Factored Flow	Peaking Factor	PWWF
		Low/Med-Density Residential			High-Density Residential			Commercial Core/Industrial			Public/Quasi-Public									
		Units	Rate	Flow	Units	Rate	Flow	Area	Rate	Flow	Area	Rate	Flow							
			(gpd/unit)	(gpd)		(gpd/unit)	(gpd)	(ac)	(gpd/ac)	(gpd)	(ac)	(gpd/ac)	(gpd)	(gpd)	(gpd)	(gpd)		(gpd)		(gpd)
S1	2,3,4	36	190	6,845	125	130	16,250		850	0	2.15	660	1,419	24,514	91,111	115,625	2.0	231,250	2.85	659,063
S2	5,6		190	0	60	130	7,819	2.42	850	2,057		660	0	9,876	81,235	91,111	2.0	182,221	2.98	543,020
S3	11,12,13a,13b		190	0		130	0	78.59	850	66,802		660	0	66,802	0	66,802	2.0	133,603	3.12	416,841
S4	7,8,9,10		190	0		130	0	16.98	850	14,433		660	0	14,433	0	14,433	2.0	28,866	3.51	101,320
S5	14,15,16	127	190	24,104		130	0		850	0		660	0	24,104	39,420	63,523	2.0	127,047	3.13	397,656
S6	17,18,19,20,21	79	190	15,031	131	130	17,011	8.68	850	7,378		660	0	39,420	0	39,420	2.0	78,839	3.30	260,170
S7	22,23,24	126	190	23,940		130	0		850	0		660	0	23,940	73,708	97,648	2.0	195,295	2.94	574,167
S8	25,26	84	190	15,960		130	0		850	0		660	0	15,960	0	15,960	2.0	31,920	3.50	111,720
S9	27,28	100	190	19,000	80	130	10,400		850	0		660	0	29,400	0	29,400	2.0	58,800	3.39	199,332
S10	29		190	0		130	0	33.35	850	28,348		661	0	28,348	0	28,348	2.0	56,695	3.39	192,196
S11	1		190	0		130	0	5.53	850	4,701		661	0	4,701	0	4,701	2.0	9,401	3.59	33,750

SEWER PIPE DESIGN PARAMETERS

HP - Campus Oaks

May 28, 2015

Pipe Segment	PWWF	Proposed Pipe		Depth Ratio	Depth of Flow	Max Capacity	Extra Capacity	Length	Invert Elevation	
		Diameter	Slope						Upstream	Downstream
	(gpd)	(in)	(ft/ft)		(in)	gpd	gpd	ft	ft	ft
SS-01	659,063	12	0.0200	1.00	12.00	3,256,333	2,597,270	370	89.42	82.02
SS-02	543,020	10	0.0025	0.70	7.00	592,765	49,745	705	91.35	89.59
SS-03	416,841	10	0.0025	0.70	7.00	592,765	175,924	1,025	93.91	91.35
SS-04	101,320	8	0.0035	0.70	5.60	386,830	285,510	535	93.39	91.52
SS-05	397,656	12	0.0200	1.00	12.00	3,256,333	2,858,677	370	94.86	87.46
SS-06	260,170	8	0.0035	0.70	5.60	386,830	126,660	1,065	98.92	95.19
SS-07	574,167	10	0.0025	0.70	7.00	592,765	18,598	1,015	87.74	85.20
SS-08	111,720	8	0.0035	0.70	5.60	386,830	275,110	380	89.23	87.90
SS-09	199,332	8	0.0035	0.70	5.60	386,830	187,498	365	89.18	87.90
SS-10	192,196	8	0.0025	0.70	5.60	592,765	400,569	950	90.15	87.74
SS-11	33,750	12	0.0021	1.00	12.00	1,055,173	1,021,423	14	83.55	83.52

Notes:

1. Pipes S1 and S5 are oversized to match existing 12" stubs at the connection points at Woodcreek Oaks Blvd.

SEWER SHED PARAMETERS

HP - Campus Oaks

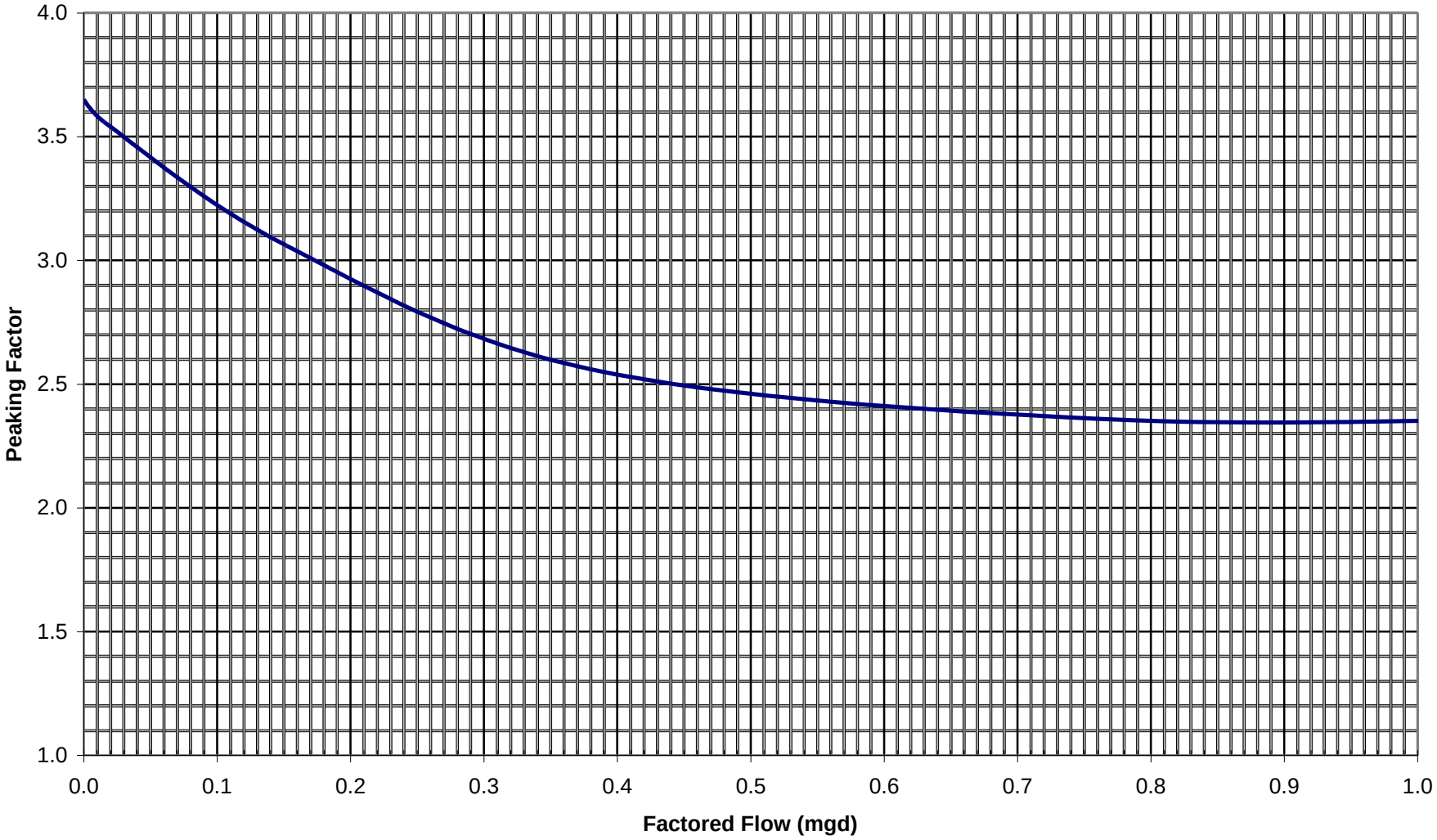
May 28, 2015

Shed No.	LU	City LU	Lot	Acres	DU's
1	BP	Com	CO-31	5.53	
2	HDR	HDR	CO-21	5.00	125
3	P/QP	P/QP	CO-75	2.15	
4	MDR	MDR	CO-4	3.59	36
5	HDR	HDR	CO-22	3.25	60
6	CC	Com	CO-41	2.42	
7	CC	Com	CO-41	3.08	
8	CC	Com	CO-42	2.96	
9	CC	Com	CO-42	3.22	
10	CC	Com	CO-41	7.72	
11	Tech	Ind	CO-51	15.23	
12	Tech	Ind	CO-52	9.36	
13a	LI	Ind	Q-1	30.00	
13b	LI	Ind	CV-1	24.00	
14	MDR	MDR	CO-5,15	4.99	53
15	MDR	MDR	CO-13,14	2.82	30
16	MDR	MDR	CO-13,14	4.34	44
17	MDR	MDR	CO-4,15	6.16	60
18	HDR	HDR	CO-22	3.18	59
19	MDR	MDR	CO-16	2.43	19
20	HDR	HDR	CO-23	4.54	72
21	Tech	Ind	CO-52	8.68	
22	LDR	LDR	CO-7	9.78	58
23	MDR	MDR	CO-11	4.55	34
24	MDR	MDR	CO-12	4.71	34
25	LDR	LDR	CO-1	6.10	36
26	LDR	LDR	CO-6	8.14	48
27	HDR	HDR	CO-24a,b	5.60	80
28	LDR	LDR	CO-2,3	22.80	100
29	LI	Ind	HP-1	33.35	
			TOTALS =	**249.68**	**948**

APPENDIX E:

Peaking Factor Curve

Figure SS-1
Peaking Factor Curve



APPENDIX F:

1996 Hewlett Packard Master Plan

CITY OF ROSEVILLE

HEWLETT PACKARD

ROSEVILLE CAMPUS MASTER PLAN

JUNE 5, 1996

PLANNING COMMISSION

Jay Kinder, Chair
Don Harlan
Pat Efseaff
Audrey Huisking
Kevin Joy
Earl Rush
Doug Selby

CITY COUNCIL

Harry Crabb, Mayor
Claudia Gramar
Pauline Roccucci
Mel Hamel
Randy Graham

PLANNING DIRECTOR
Patty Dunn

PRINCIPAL PLANNER
Dan Dameron

SENIOR PLANNER
Chris Burrows

Land Planning
Wade Associates

Civil Engineering
Morton and Pitalo

Commercial Site Design
Williams + Paddon, Architects

Resource Planning
Sugnet and Associates

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1 INTRODUCTION

The Hewlett-Packard Master Plan establishes a growth framework for 500.2 acres of light industrial and commercial property in the northern portion of the City of Roseville. The Hewlett-Packard Company purchased this property in 1979, and was granted initial Use Permit approval to develop a computer manufacturing and distribution facility. Construction first began in 1981, with major Use Permits for reconfiguration and expansion of development on the site subsequently approved in 1985 and 1988. At the time of the current Master Plan approval (June 1996), approximately 195 acres of the property had been developed with related manufacturing and office facilities.

This Master Plan provides for development of the remaining undeveloped portions of the site, which include expansion of Hewlett-Packard's facilities. The document incorporates land use and zoning regulations, infrastructure plans, design guidelines and a development approval process. All activity within the Master Plan area is required to be consistent with the provisions of this Master Plan and related documents.

1.1 Project Location

The Hewlett-Packard Master Plan area is located at the southwest corner of Foothills and Blue Oaks Boulevards north of downtown Roseville (Figure 1). The project is within a portion of the City identified as the North Industrial planning area. Other industrial users such as NEC Electronics, Albertson's and Pasco Scientific are also located within this growing regional employment area.

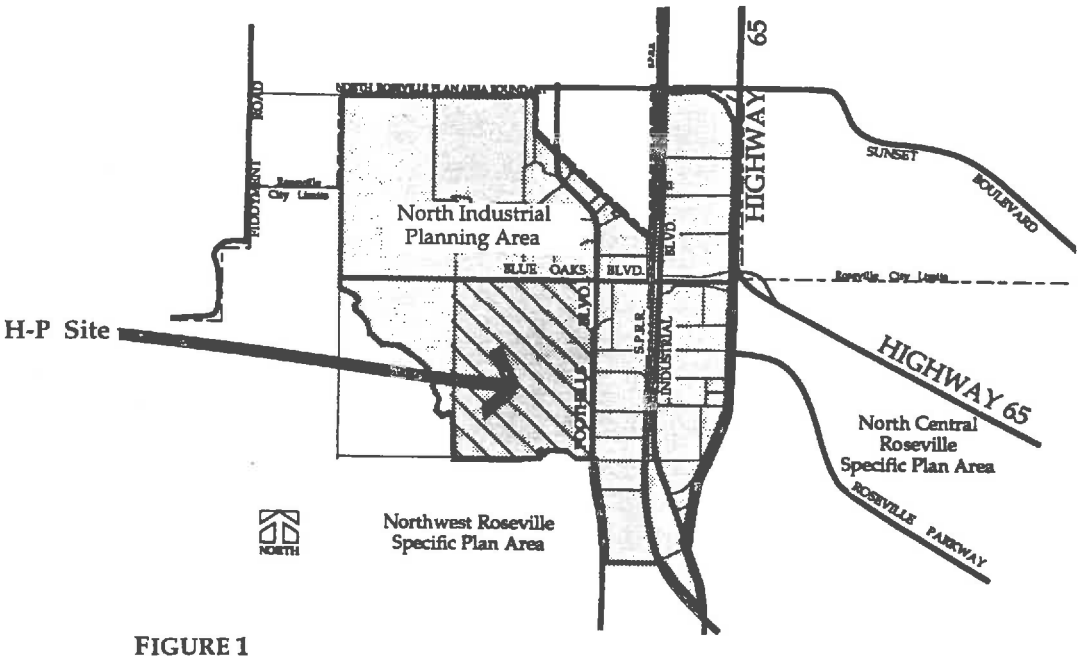


FIGURE 1
LOCATION MAP

1.2 *Project Objectives*

The Master Plan provides for the comprehensive planning and subsequent orderly development of the remaining vacant lands within the project area. The Hewlett-Packard Company has identified three primary objectives for developing the Master Plan.

- First, the company has a business need to expand its operations. to accommodate intended growth over the next two decades.
- Second, this growth often needs to be contiguous to the business activities already established on the Roseville campus due to operational and logistical efficiency, security, and strategic considerations.
- Third, the company needs the flexibility to respond very quickly to changing business conditions in the dynamic markets in which it competes, and to respond in ways that are often not anticipated.

The Master Plan is intended to facilitate and accommodate flexibility and change.

1.3 *Related Documents*

1.3.1 Environmental Impact Report

Pursuant to the California Environmental Quality Act (CEQA), the Hewlett-Packard Master Plan Environmental Impact Report (EIR) was certified with findings concurrent with adoption of the Master Plan. The EIR evaluates the existing environmental resources within the project area, analyzes potential impacts on those resources due to the project, and identifies mitigation measures as appropriate to reduce significant impacts. The EIR examines all phases of the project including planning, construction and operation. In accordance with CEQA, it is intended that the Master Plan EIR form the environmental basis for approval of subsequent development within and in compliance with the Master Plan.

1.3.2 Development Agreement

The Hewlett-Packard Company and the City of Roseville have executed a project Development Agreement in accordance with Sections 65864 through 65869.5 of the Government Code of California, as implemented through Article V of the City of Roseville Zoning Ordinance. The Master Plan Development Agreement forms a binding contract between the parties establishing certain development rights and obligations. The Development Agreement secures permitted uses, needed infrastructure improvements, the timing and method of financing improvements, and other specific rights, duties and obligations of the property owner and the City as it relates to development within the project area. Both the Master Plan EIR and Development Agreement are bound separately from the Master Plan, and are available through the City of Roseville Planning Department.

2 LAND USE AND ZONING

The Land Use and Zoning Section of the Master Plan presents a general summary of project land use, defines permitted and conditionally permitted uses, and references general development standards. Development projects within the Master Plan area will be reviewed to ensure compliance with all applicable Master Plan, General Plan and Zoning Ordinance policies and requirements.

2.1 *Land Use Summary*

Existing use
195 ac.
1.5 mil sq. ft.
4100 workers

The Hewlett-Packard Master Plan area was originally designated with Light Industrial land use in 1978. Hewlett-Packard's development of the site as a computer manufacturing and distribution facility first began in 1981. At the time of Master Plan approval (June 1996), the existing built campus encompassed approximately 195 acres within the southeast portion of the property consisting of approximately 1,300,000 square feet of manufacturing and office uses. This space housed approximately 4,100 employees and contract workers.

The Master Plan provides for continued development of a Light Industrial campus on the remaining undeveloped site. In addition, two Commercial sites are planned, one at the southwest corner of Foothills and Blue Oaks Boulevards, and the other at the southeast corner of extended Woodcreek Oaks and Blue Oaks Boulevards. An Open Space/Wetlands Preserve has been designated along the South Branch of Pleasant Grove Creek.

Future estimates
500 ac.
4.239 mil sq. ft.
13,870 workers

It is anticipated that build out of the Master Plan area will occur over a period of 20 years or more. At build out, total development is estimated to be approximately 4,239,000 square feet. Of this, about 248,000 square feet is projected on the two Commercial parcels, with the remainder within the Light Industrial area. It is estimated that a total of 13,870 people could ultimately be employed within the Master Plan area. Hewlett-Packard anticipates developing a majority of the Light Industrial property with restricted (gated) access for its use. Portions may be developed and used by others. The two Commercial parcels are expected to be developed by others.

The land use designations are summarized in Table 1. Land use designations and zoning are shown on Figure 2.

TABLE 1
MASTER PLAN LAND USE DESIGNATIONS

USE TYPE	SQUARE FEET	ACRES
Light Industrial	3,991,000	425.8
Commercial	248,000	28.5
Open Space		45.9
TOTAL	4,239,000	500.2

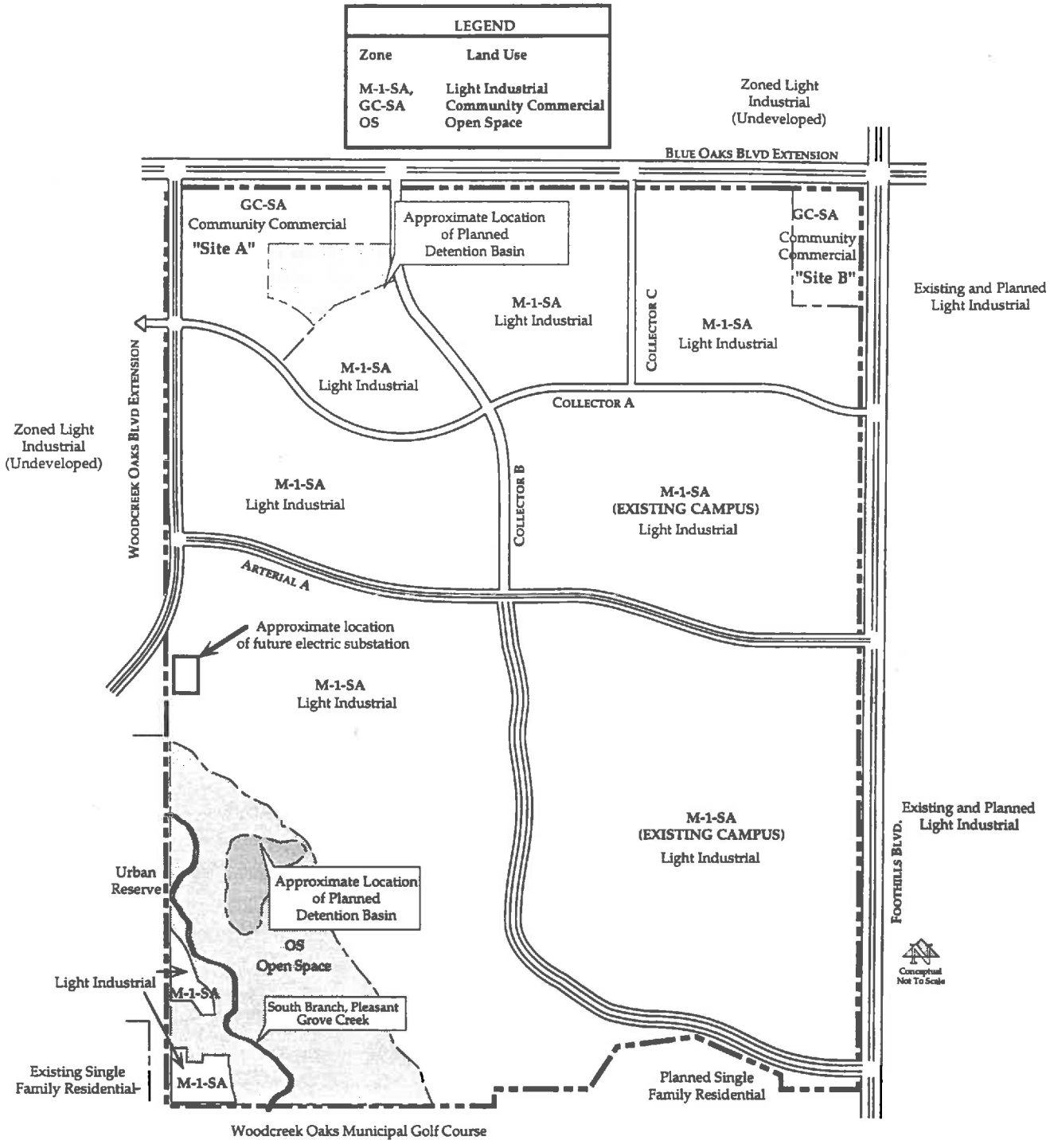


FIGURE 2
LAND USE DESIGNATIONS AND ZONING EXHIBIT

It is assumed that the new Light Industrial use will develop at an average floor area ratio (FAR) of twenty-seven percent, that is, the combined floor area for all enclosed building space will equal twenty seven percent of the total acreage. Similarly the Commercial use will develop at an average floor area ratio of twenty five percent.

2.2 *Permitted Uses*

All use types in the Master Plan Light Industrial, Commercial and Open Space districts are fully defined in Section 19.08 of the Roseville Zoning Ordinance. Use types identified as principally permitted in the districts are subject to the provisions for review and approval contained in Section 6 (Development Approval Process) of this Master Plan document. Use types identified as administratively or conditionally permitted also require approval of an Administrative or Conditional Use Permit as specified in Article V of the Zoning Ordinance. Use types not listed as principally, administratively or conditionally permitted are prohibited in the districts.

The permitted uses within the Master Plan Light Industrial and Commercial districts are modified from the Zoning Ordinance general districts by the provisions of the Special Area Overlay District. This overlay district allows for modification of the underlying general district regulations (including both permitted use types and development standards) by reference to regulations adopted in the ordinance rezoning the property so classified. In this particular case, the Hewlett-Packard Master Plan contains the regulations and is incorporated into the ordinance establishing the Light Industrial and General Commercial Special Area districts.

2.2.1 Light Industrial

LAND USE DESIGNATION:	*Light Industrial (LI)*
ZONING DISTRICT:	*Light Industrial-Special Area Overlay District (M1-SA)*

Purpose

The light industrial district is applied to the majority of the Master Plan, 425.8 acres. The district identifies areas appropriate for industrial and related uses such as manufacturing, processing, assembly, high technology, research and development, office, and storage uses. These uses are intended to be compatible operating in relatively close proximity to adjacent commercial and residential uses.

Permitted Uses

Table 2 identifies the permitted Master Plan Light Industrial use types and required approvals. As indicated, the Special Area Overlay District (SA) has been applied to modify uses as permitted by the Light Industrial District of the Roseville Zoning Ordinance. These modifications include changes to Conditional Use and Administrative Permit requirements, and the prohibition of

some uses. The changes focus on those uses that have the potential to conflict with internal or adjacent uses, and/or are considered inconsistent with the desired campus character of the Master Plan area. In general, all permitted industrial and transportation and communication use types have been retained.

The use types permitted within the Master Plan Light Industrial district do not include outdoor manufacturing, but may include limited outdoor storage and the emission of a limited amount of noise, vibration, odor, dust, smoke, light, or other pollutants. Truck and other vehicle storage related to the primary industrial activity is permitted in designated storage areas. Uses prohibited include some civic, all residential and several commercial use types.

2.2.2 Commercial

LAND USE DESIGNATION: *Community Commercial (CC)*
ZONING DISTRICT: *General Commercial-Special Area Overlay District (GC-SA)*

Purpose

The General Commercial district is applied to two parcels totaling 28.5 acres at the northwest (Site A) and northeast (Site B) corners of the Master Plan boundaries. The intent of the Master Plan General Commercial district is primarily to provide convenient retail and service commercial uses near employees in the Master Plan area. Nearly six acres of the northwest commercial site is allocated for a detention basin and will not be available for commercial use.

Permitted Uses

Table 2 identifies the permitted Master Plan General Commercial use types and required approvals. The Special Area Overlay District (SA) is applied to modify uses as permitted by the General Commercial District (GC) of the Zoning Ordinance. Modifications include prohibiting use types that are residential in nature or have a heavy commercial character. The retained uses focus on providing community retail-service needs and limited outdoor entertainment.

The outdoor entertainment component of this district is restricted to the northwest General Commercial site in association with the northern detention basin. This basin may be designed to incorporate outdoor entertainment uses such as an amphitheater, outdoor exposition events or field sport recreation. More intensive activities permitted under the Outdoor Entertainment use type, such as large sports arenas, BMX tracks, racing facilities, drive-in theaters and zoos, are not permitted. The intended design and development of the outdoor entertainment component is described in Section 5 of this document.

2.2.3 Open Space

LAND USE DESIGNATION: *Open Space (OS)*
ZONING DISTRICT: *Open Space District (OS)*

Purpose

The Open Space district is applied to approximately 45.9 acres of land within the Master Plan. This includes lands that are environmentally sensitive due to wildlife habitat, flood hazard or other natural features. Specifically, the intent of the Master Plan Open Space district is to preserve in permanent open space the existing oak woodland, the 100 year flood plain of the South Branch of Pleasant Grove Creek, designated seasonal wetlands, scenic vistas of the oak woodland and wildlife habitat associated with the oak woodland, creek and wetland resources. The Open Space area is intended to remain in private ownership with access restricted to Hewlett-Packard and related employees.

The Open Space area includes a 44 acre wetland preserve area for the enhancement and preservation of various wetland types, the creek and the adjacent oak woodland. Wetland mitigation constructed within the open space will include seasonal/emergent marsh and vernal pools. The preserve area includes buffer areas adequate to protect the wetland resources from the impacts of adjacent development.

The riparian blue oak woodland along the South Branch of Pleasant Grove Creek and its tributaries encompasses a total of 22.2 acres. All of the oak woodland is within the proposed open space preserve area and will not be affected by proposed development.

Permitted Uses

The Master Plan Open Space district is consistent with the Zoning Ordinance Open Space district. The listing of permitted uses and required approvals is contained in Section 19.16 of the Roseville Zoning Ordinance, and has been included in Table 2 for convenience. The Open Space district may include passive recreation uses such as bike and pedestrian trails, benches, observation points to view the wetland and oak woodlands, picnic benches and shelters, and other structures associated with the recreation use of the open space. A walkway is proposed within the preserve boundary, allowing people to view the vernal pool complex and to access the perennial marsh area. This walkway and the gravel access drive over the sanitary sewer line (described in Section 3.4) are the only development to occur within the preserve.

A monitoring system will be established pursuant to the Clean water Act (404 Permit) authorization. The wetland monitoring program requires annual reports for a minimum of five years which include data needed to establish success criteria and ensure compensation. Maintenance of the preserve will occur concurrently with the five year annual monitoring data collection. Subsequent site maintenance will be conducted on an as-required basis. During the summer months a fire break will be established along the perimeter of the preserve.

A portion of the Open Space district, approximately 15 acres, is designated for possible conversion to urban use in the future. The subject area is reflected on Figure 3. Such conversion is subject to amendment of the project Federal Clean Water Act permit and would require City approval of a General Plan Amendment, amendment to this Master Plan, amendment to the Development Agreement, and additional environmental analysis in accordance with CEQA.

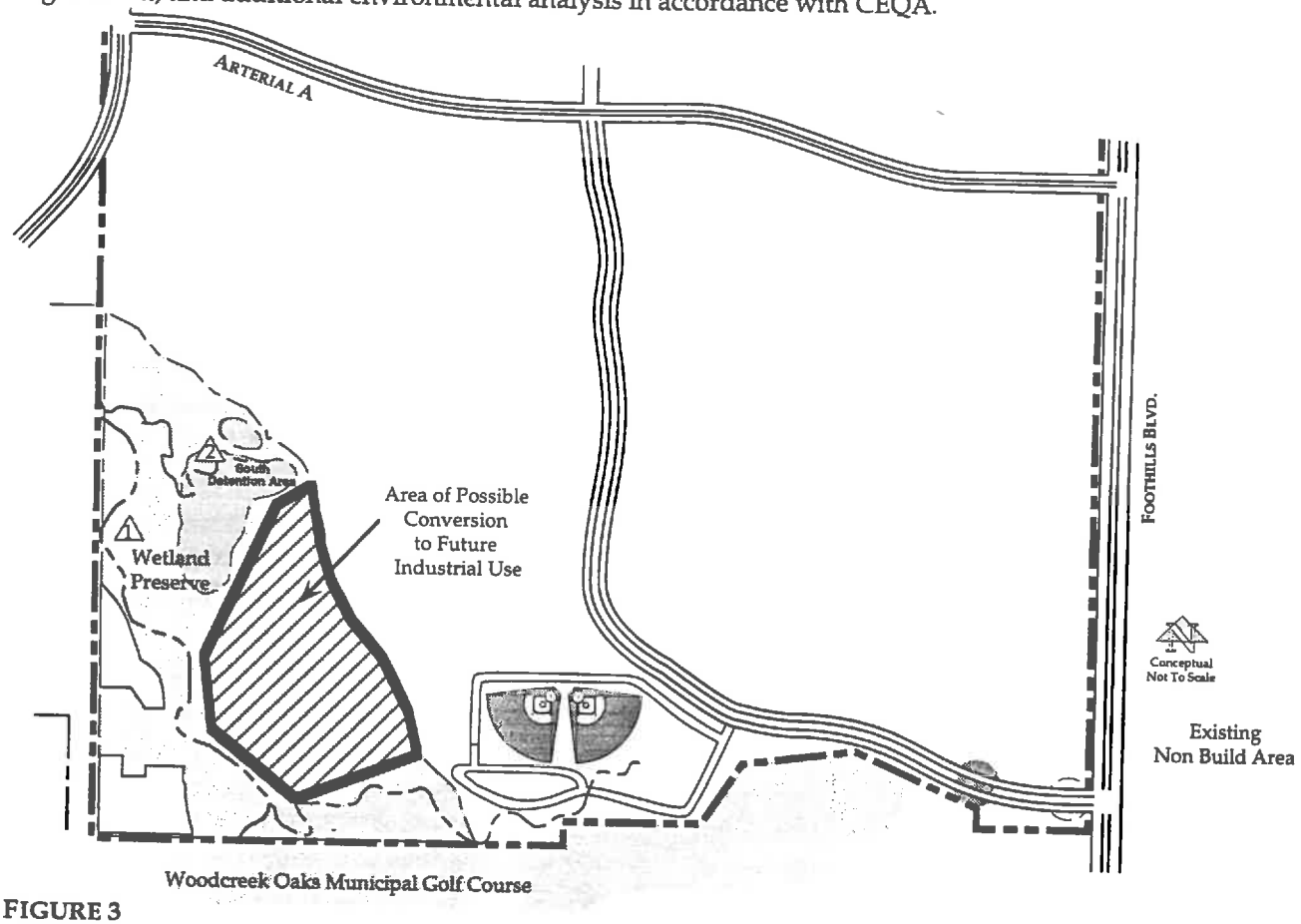


FIGURE 3
AREA OF POSSIBLE CONVERSION TO INDUSTRIAL USE

2.3 GENERAL DEVELOPMENT STANDARDS

Development standards and design guidelines for the Master Plan are contained in Section 5 of this document. If a development standard is not specifically addressed in Section 5, it shall be governed by the applicable standards in the Roseville Zoning Ordinance or as established through Site Review approval pursuant to the Development Approval Process, Section 6 of this document.

TABLE 2:
MASTER PLAN PERMITTED USES

AGRICULTURAL & OPEN SPACE USE TYPES		M1-SA	GC-SA	OS
Agriculture		P	-	CUP
Resource Protection & Restoration		P	P	P
Resource Related Recreation		P	P	P
CIVIC USE TYPES		**M1-SA**	**GC-SA**	**OS**
Community Assembly		CUP	AP	CUP
Community Services		P	P	P
Essential Services		P	P	P
Libraries & Museums, Private		-	P	P
Public Parking Services		P	P	-
Schools				
	College & University	-	P	-
COMMERCIAL USE TYPES		**M1-SA**	**GC-SA**	**OS**
Animal Sales & Services				
	Grooming & Pet Store	-	P	-
	Veterinary Clinic	-	P	-
Automotive & Equipment				
	Automotive Rentals	P	P	-
	Automotive Repairs	-	AP	-
	Automotive Sales	-	CUP	-
	Car Wash & Detailing	-	AP	-
	Commercial Parking	P	-	-
	Gasoline Sales	-	P	-
Banks & Financial Services		-	P	-
Bars & Drinking Places		-	P	-
Broadcasting & Recording Studios		P	P	-
Building Material Stores		-	AP	-
Business Support Services		P	P	-
Commercial Recreation				
	Amusement Center	-	P	-
	Indoor Entertainment	-	P	-
	Indoor Sports & Recreation	P	P	-
	Outdoor Entertainment	P	P (Limited)	-
	Outdoor Sports & Recreation	P	-	-
Eating & Drinking Establishments				
	Fast Food w/ Drive Through	-	P	-
	Convenience	-	P	-
	Full Service	-	P	-

TABLE 2:
MASTER PLAN PERMITTED USES (CONTINUED)

COMMERCIAL USE TYPES	M1-SA	GC-SA	OS
Food & Retail Sales	-	P	-
Lodging Services	-	P	-
Maintenance & Repair	-	P	-
Medical Services	-	P	-
Offices, Professional	P	P	-
Personal Services	AP	P	-
Retail Sales & Services	-	P	-
Specialized Education & Training			
Vocational Schools	P	P	-
Specialty Schools	P	P	-
Storage, Personal Storage Facility	AP	AP	-

INDUSTRIAL USE TYPES	M1-SA	GC-SA	OS
Equipment & Material Storage Yards	CUP	-	-
General Industrial	CUP	-	-
Hazardous Materials Handling	CUP	-	-
Light Manufacturing	P	-	-
Recycling, Scrap, Dismantling	P	-	-
(Indoor Only)			
Research Services	P	CUP	-
Specialized Industrial	CUP	-	-
Wholesale & Distribution			
Light	P	-	-
Heavy	AP	-	-

TRANSPORATION & COMMUNICATION USE TYPES	M1-SA	GC-SA	OS
Antennas & Communication Facilities I & II	P	AP	-
Heliport	CUP	-	-
Intermodal Facilities	P	AP	-

M1-SA	Light Industrial-Special Area Overlay District
GC-SA	General Commercial-Special Area Overlay District
OS	Open Space District
P	Principally Permitted
AP	Administrative Permit Required
CUP	Conditional Use Permit Required

3. INFRASTRUCTURE COMPONENTS AND SEQUENCING

The Infrastructure Components and Sequencing section of the Master Plan identifies the basic infrastructure system needed to service the project area, and defines general concepts for the sequencing of that system in relation to project development. Included are provisions for circulation, water, waste water, reclaimed water, solid waste, electric, natural gas and drainage. All proposed development projects within the Master Plan area will be reviewed to ensure compliance with the infrastructure and sequencing provisions described below and as further specified within the project development agreement.

3.1 General Concept and Project Review

Each components of the Master Plan infrastructure system is designed to accommodate development anticipated at build out of the Master Plan. Anticipated development is based on the floor area ratios assumed for the commercial and industrial acreage and the demand on infrastructure components and/or utilities. This concept is discussed in more detail in Section 4.

Each infrastructure component may be constructed in its entirety initially, but more likely it will be constructed over time in phases that coincide with the construction of the individual buildings within the Master Plan. When an individual development project is submitted for City review, each infrastructure component will be evaluated for adequacy to serve the proposed project and for compatibility with the overall system.

Since the infrastructure components may be constructed incrementally, individual permits may be conditioned to require improvements needed to directly serve the individual building. For example, it may be necessary to build an additional connection to a public street to resolve a level of service or circulation problem. It may be necessary to construct all or a substantial portion of a backbone system to serve an individual building.

3.2 Circulation Component

The Master Plan circulation system includes a combination of public and private arterial and collector streets. There are three public arterials adjacent to the Master Plan boundaries, Foothills Blvd. on the east (existing), Blue Oaks Blvd. on the north (future), and Woodcreek Oaks Blvd. on the west (future). Within the Master Plan there is one private arterial, Arterial A, and three private collector streets, Collectors A, B and C that provide access to and within the Master Plan area (See Figure 4).

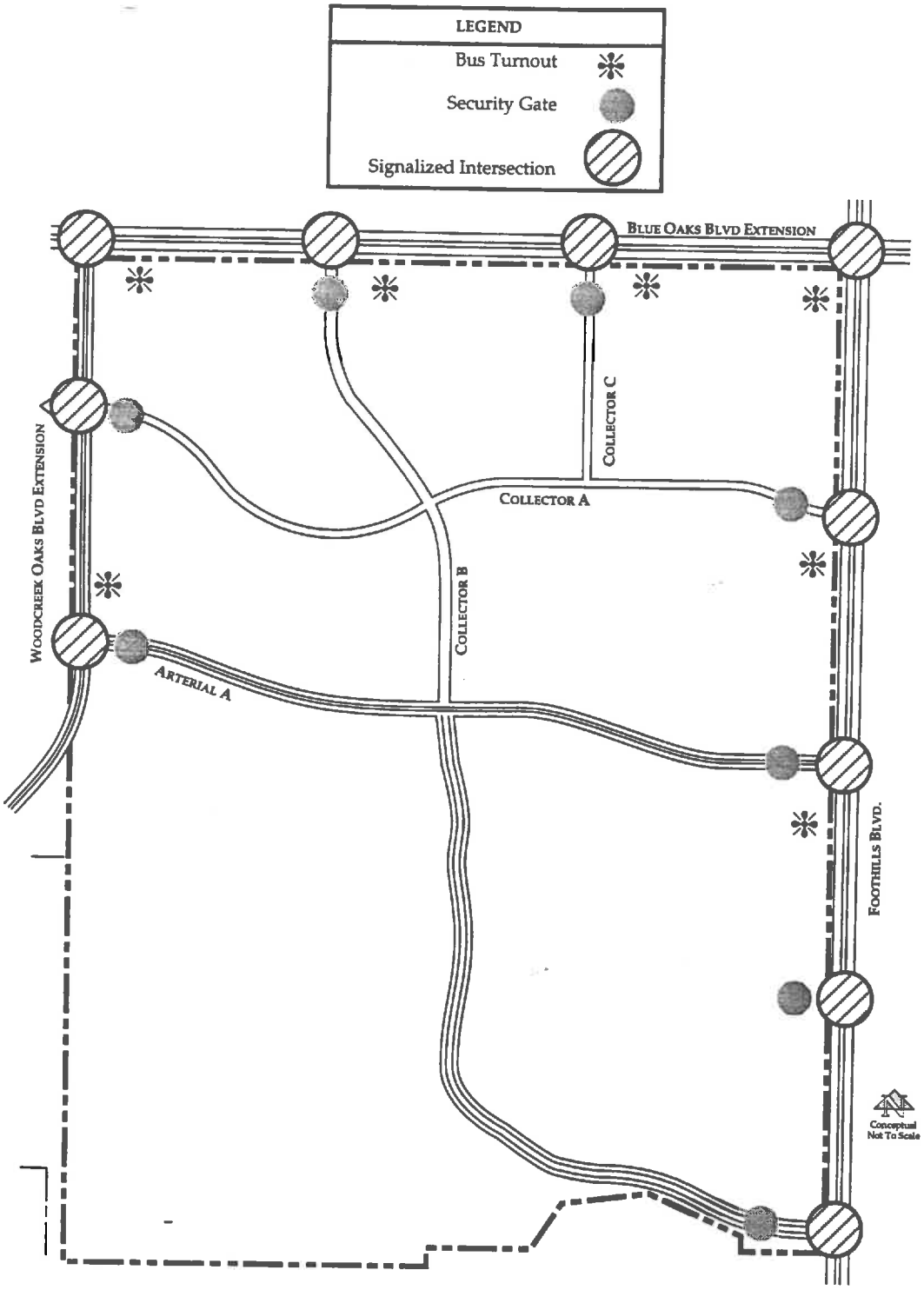


FIGURE 4
PRIMARY CIRCULATION SYSTEM

The existing campus circulation system provides four access points to Foothills Blvd. The Master Plan proposes two connections to Blue Oaks Blvd., Collector B and Collector C, and two connections to Woodcreek Oaks Blvd., Arterial A and Collector A. These connections will include traffic signalization. In addition, curb cuts may be permitted, subject to City approval and standards, along the frontages of the two General Commercial parcels.

Blue Oaks Boulevard is intended to ultimately be an expressway with limited access as defined by City standards.

Bicycle and pedestrian circulation will be provided through a system of off-street paths. The bicycle/pedestrian paths will connect to each of the individual buildings within the master plan as they develop and to recreation and open space areas. In addition, the trails will connect to the public bicycle/pedestrian paths located within the landscape corridor along arterial roadways adjacent to the campus, and to the Class I system provided along the south perimeter.

The Master Plan also provides for possible use of light electric vehicles (LEV) . In the early stages of development it is expected that the LEVs can travel in the shoulder lane on the internal private streets. As traffic levels increase with development of the plan area, and in the event that Arterial "A" is made part of the public street system, it may be appropriate to provide routes for LEVs separate from the street. Within the Master Plan area dedicated off-street routes will be provided along the north side of Arterial "A" and possibly in other locations to accommodate the LEVs.

All entries into the Light Industrial portion of the Master Plan may include security gates. The design of these gates shall allow for adequate stacking from the edge of public right-of-way as approved by the City.

Design requirements for roadways, landscape corridors and medians, bikeways and pedestrian paths and LEV connections are described in Section 5.

Circulation System Sequencing

Public Roadways

The implementation of the overall Master Plan circulation system will occur incrementally. The roadway connections from the Master Plan and development adjacent to the arterials will serve as triggers for the implementation of required improvements to the external circulation system.

As an example, when the landowner constructs an intersection with Blue Oaks Blvd. at Woodcreek Oaks Blvd. or either Collector B or C, the property owner will be required to construct specified improvements along Blue Oaks Blvd. from Foothills Blvd. to the point of connection. If a building permit is issued for a building within 300 feet of the right-of-way for Blue Oaks Blvd. improvements will be required from Foothills Blvd. to the westerly edge of the new building improvement. If the roadway has already been constructed by others, remaining

improvements such as pavement widening, signing and striping, curb, gutter and sidewalk, street lights, intersection improvements, and installation of landscaping and one-half the median will be required.

Similarly, when either Collector A or Arterial A are connected to Woodcreek Oaks Blvd., or a building permit is issued for a building within 300 feet of the road right-of-way, the property owner will be required to construct the specified improvements along Woodcreek Oaks Blvd. from Blue Oaks Blvd. to the point of connection or the southerly edge of the new building improvements. If the roadway has already been constructed by others, remaining improvements will be required.

Bus shelters will be required along the public roads when bus service is available on the subject street. Bus turnouts will be constructed at the appropriate locations as shown on Figure 4 with the adjacent street improvements.

Internal Roadways

Internal private roadway improvements will be constructed at the discretion of the landowner to provide access to individual development projects as they occur. The internal roadway system will be subject to the review and approval of the City as to the need for emergency access, and projects may be conditioned to include improvements required to resolve level-of-service issues at connections to public roadways.

While it is anticipated that the internal roadways will remain private, it is possible that the landowner may desire to convert some or a portion of the streets to public use in the future. While the landowner is not obligated to construct the internal roadways to City standards, the City may require that such roadways be improved to public street standards prior to their acceptance as public roads.

3.3 *Water Component*

Water supply to the existing campus is provided by a 24 inch water line located in Foothills Blvd. The existing water infrastructure system in the vicinity of the Master Plan will be expanded to include water service from a future 24 inch water line in Blue Oaks Blvd. and a future 24 inch water line in Woodcreek Oaks Blvd. The future water lines in these two roadways will be installed by others. Figure 5 reflects the proposed water distribution system.

In addition to the main water transmission lines in the adjacent arterials, additional water lines will be constructed within the Master Plan as follows:

- a 12 inch line in Collector A will serve development north of Collector A and east of Collector B;
- a 16 inch line in Collector B will serve all development west of Collector B;
- Additional 12 inch lines will be extended westerly along Collector A and Arterial A and will provide connections to the

future 24 inch line in Woodcreek Oaks Blvd. These lines will serve development west of Collector B and north and south of Collector A and Arterial A.

In addition to the water line improvements, a ground water well site has been reserved within the western portion of the property for possible use by the City in the future.

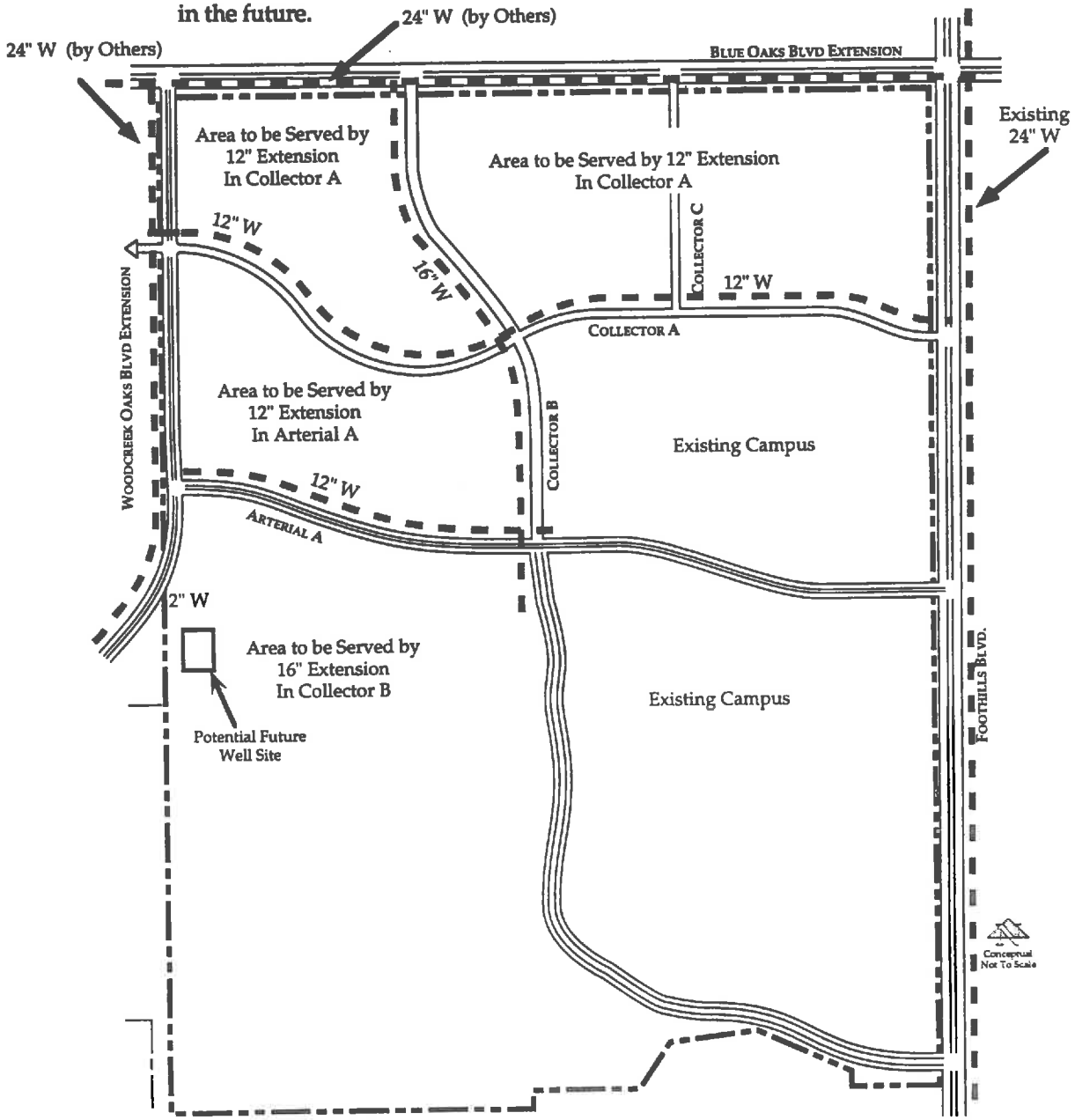


FIGURE 5
WATER SYSTEM

Water System Sequencing

The water infrastructure system will be constructed in phases that coincide with construction of individual buildings. Portions of the system intended to serve future development may be built earlier if more economical or necessary for more efficient system operation. The sequencing of water infrastructure improvements will be determined by the development pattern that evolves within the Master Plan area.

All water system infrastructure improvements will be reviewed by the City during the development review process to ensure consistency with the Master Plan and to ensure that the design and construction meet then current City standards as contained in the City's Improvement Standards. Unless otherwise approved by the City, all areas of the Master Plan shall at all times be supplied by a loop system.

3.4 *Wastewater Component*

The existing campus is provided waste water service by a 15 inch line located in the southern part of the property. This line feeds into a 21 inch line which connects to a lift station located just south of the Master Plan area. The majority of the undeveloped Master Plan area will be provided sewer service by proposed 12 and 15 inch sewer lines to be constructed along the northern and western edges of the plan area extending to the existing 21 inch line along the southern boundary of the property. The proposed 15 inch line will traverse the open space area, and will be located, designed and constructed to avoid impacts to existing trees and wetlands.

Approximately 34 acres in the northeast corner of the plan will temporarily be served by an existing 10 inch sewer line in Foothills Blvd. that flows to the north. The City will allow the landowner to develop within this northeast area as long as capacity is available within the 10 inch main. When capacity in the existing 10 inch line exceeds 50%, and the area served by this line is developed beyond 75%, then the flow must be re-directed to the west into the proposed 12 inch sewer line that will connect with the proposed 15 inch line.

Figure 6 shows the proposed overall waste water infrastructure system and the boundaries of the identified northeast portion of the plan.

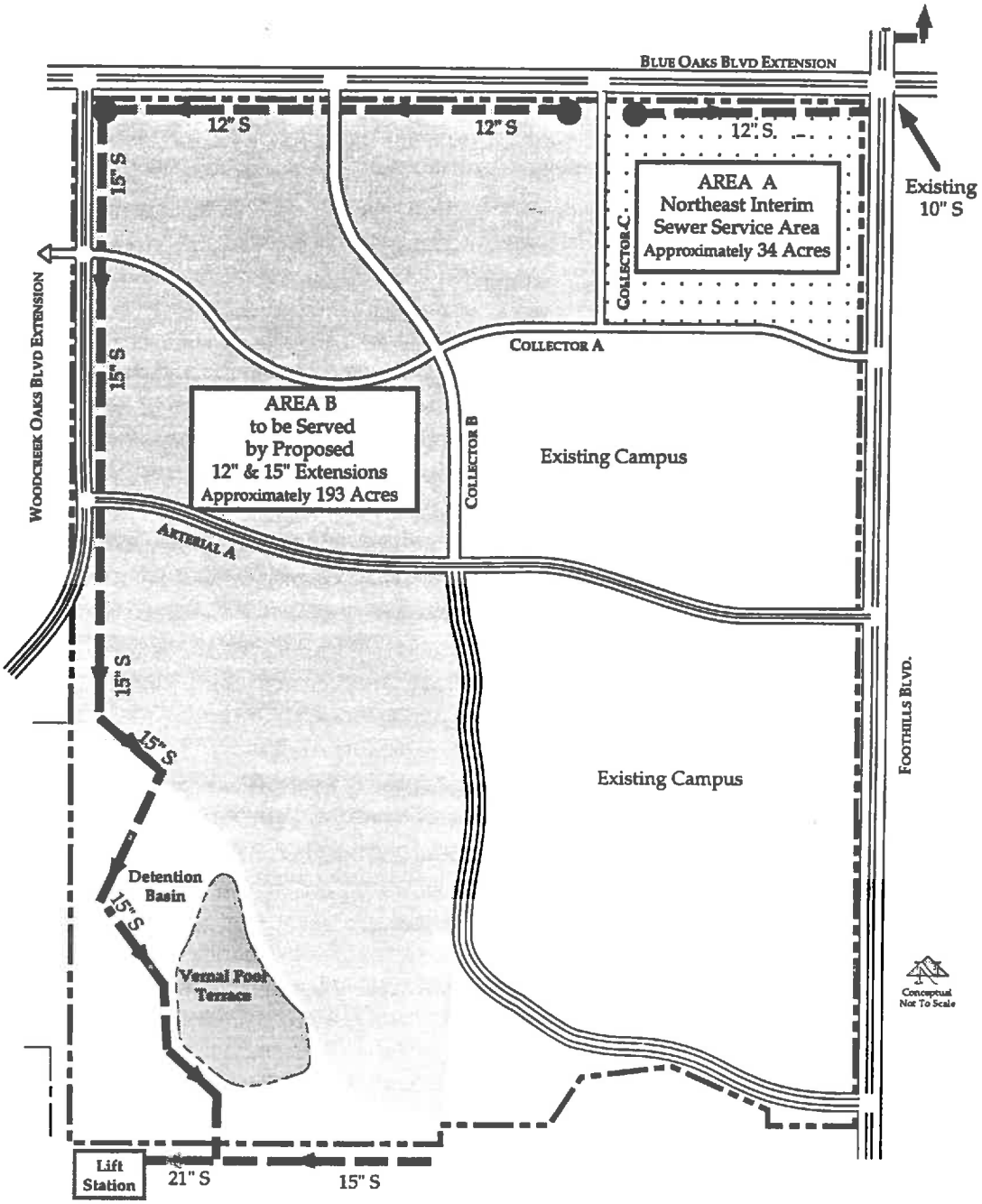


FIGURE 6
WASTE WATER SYSTEM

Waste water System Sequencing

Similar to the water system, the waste water system will be constructed in phases tied to the construction of individual buildings. All waste water system infrastructure improvements will be reviewed by the City during the development review process to ensure consistency with the Master Plan and to ensure that the design and construction meet then current City standards as contained in the City's Improvement Standards.

3.5 Reclaimed Water Component

Reclaimed water suitable for landscape irrigation will be available in an existing pipe terminating at lift station No. 2 near the southwest corner of the Master Plan area. This may be extended north in the existing pipe adjacent to the Master Plan west boundary. The opportunity to use reclaimed waste water for irrigation will be considered in the design of landscaping and supporting infrastructure on the west and north portions of the plan area. Reclaimed water will be used if feasible and may be extended to serve the existing campus irrigation.

3.6 Solid Waste Component

Solid waste collection in the Master Plan area is provided through a private solid waste hauling service. The City recognizes that this service may continue and expand to future development within the project. Should private service be terminated or not desired, the City will make municipal solid waste hauling service available to all or a portion of the Master Plan Area.

3.7 Electric Component

The electricity needs of development within the Master Plan will be supplied through an expansion of the existing power distribution network within the campus. Development of buildings within 300 feet of Blue Oaks Blvd. will be served by the extension of underground electrical service along Blue Oaks Blvd. For development within the remainder of the Master Plan area, service will be provided from Blue Oaks Blvd. or from the existing internal power distribution system, subject to available capacity in that system.

The Roseville Electric Department will review all plans for development within the Master Plan and ensure that the proposed electric infrastructure improvements are designed and constructed to then current City standards as contained in the Electric Department's non-residential specifications.

An electric substation site has been identified on the Land Use & Zoning Exhibit (Figure 2) on the western portion of the property. This site may be needed in the future to construct a substation to serve the future electricity needs of development. If it is determined that the substation site is not needed, the property will event to the landowner.

3.8 *Natural Gas Component*

A natural gas transmission pipeline bisects the plan area. Natural gas will be provided by Pacific Gas and Electric Company (PG&E) on request and in accordance with the rules and tariffs of the California Public Utilities Commission.

3.9 *Drainage Component*

Drainage for the undeveloped portion of the master plan area will be converted from a natural drainage system to an engineered drainage system. Details of this conversion will be outlined in a master drainage plan. The preparation, review and approval of the master drainage plan is required to occur prior to any development activity in the undeveloped portion of the master plan. The master drainage plan will address the size and location of the major drainage improvements needed to accommodate the drainage needs for buildout of the master plan.

Development projects will be reviewed to ensure that drainage improvements are designed and constructed consistent with the master plan, the master drainage plan, City policies and then current City improvement standards.

The key components of the drainage system are two detention basins within the northern and southern portions of the Master Plan area. These basins will be designed to detain peak flows associated with new development to pre-development levels. The northern detention basin will be constructed to mitigate for development in the "undeveloped northern watershed" and the southern detention basin to mitigate for development in the "undeveloped southern watershed". The general location of both basins and watershed areas is reflected on Figure 7.

Conservation, habitat preservation and flow easements will be granted to the City over the detention basins and the 100-year flood plain within the project area.

Drainage System Sequencing

Northern Detention Basin

The northern detention basin will be designed to store approximately ten (10) acre feet of water and is located within the General Commercial district on the northwest corner of the plan area. As discussed in Section 2, Land Use and Zoning, this basin may be utilized for limited outdoor entertainment activities. As an alternative, development in the undeveloped northern watershed may, on an interim basis, be mitigated through construction of a temporary basin also within the northwest General Commercial district. The temporary basin would be designed to store a minimum of five (5) acre feet of water.

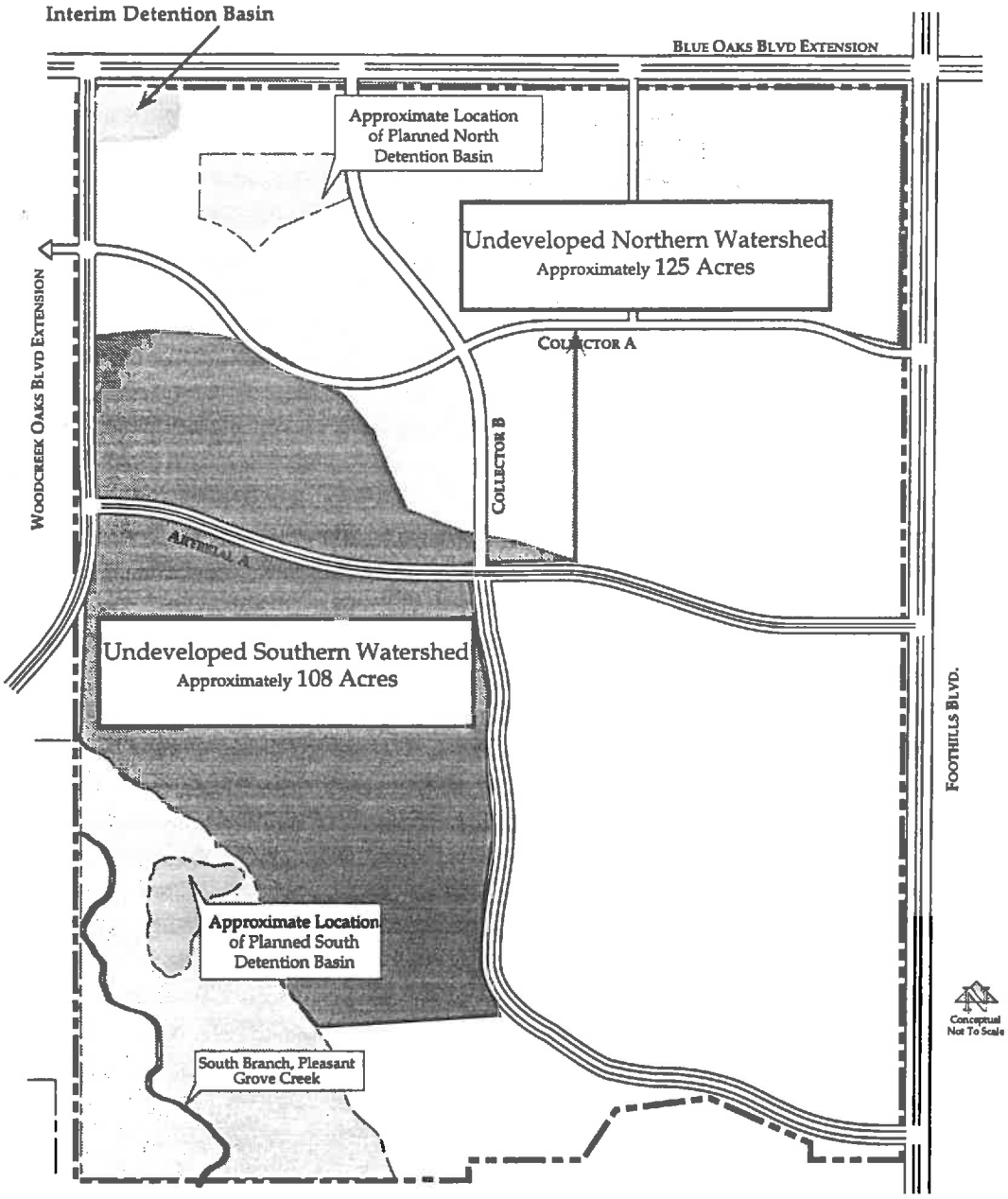


FIGURE 7
MASTER DRAINAGE CONCEPT PLAN

Either the permanent or temporary northern detention basin will be constructed by the landowner upon issuance of the first building permit within the undeveloped northern watershed. If the landowner elects to construct the temporary basin, up to fifty percent of the area within the undeveloped northern watershed may be developed before the permanent basin is constructed.

Southern Detention Basin

The southern detention basin will be designed to store approximately six (6) acre feet of water, and will be located within the open space area in the southwest portion of the plan area. This basin will be designed to avoid impact to existing woodland and wetlands in the open space area. The southern detention basin will be constructed by the landowner upon issuance of the first building permit within the undeveloped southern watershed. Road and utility improvements and construction by the City of either the electric substation or well site will not trigger the requirement to construct this basin.

4 INTENSITY THRESHOLDS

This section of the Master Plan identifies build out traffic and utility demand thresholds and monitoring provisions for new development within the Master Plan area. These thresholds are a critical component of the Master Plan as they help to define infrastructure and environmental analysis needs, as well as the ultimate limits of development. All proposed development projects within the Master Plan area will be reviewed to ensure compliance with the identified thresholds.

4.1 Build out Intensity Thresholds

Build out square footage estimates have been generated for new development within the Master Plan area using average Floor Area Ratios (FARs) for each land use type. The projected square footage or acreage, as appropriate, has been multiplied by generation/demand factors for each of the key service/ infrastructure components to identify build out needs. For the purposes of this Master Plan, these key components include traffic, water, waste water and electricity. The generation/demand factors utilized are a combination of standard demand rates and actual rates based on existing site development at the time of Master Plan approval.

While the square footage estimates provide a general base for monitoring purposes, it is the traffic and utility demand factors (Table 3) that dictate the build out development thresholds and infrastructure/service requirements for the project. In addition, these thresholds form the basis for the Master Plan EIR analysis. Inconsistency with the thresholds could modify infrastructure and resource needs, as well as trigger the requirement for additional environmental analysis.

Table 3 provides the projected generation/demand factors and build out intensity thresholds for new development within the Master Plan area.

4.2 Threshold Monitoring

As individual development projects are submitted, project square footage or acreage will be multiplied by the average generation/demand factors and monitored to ensure that it falls within the cumulative thresholds for new development identified on Table 3. Appendix A includes the monitoring format that will be updated as each project is processed.

It is recognized that the generation/demand factors are averages. Development projects may be above or below the average factor depending on the composition and operations of the uses proposed. It is also recognized that, over time, the mix of uses may vary and shift. The average factors take into account a general mix of uses and, in most cases, should provide an adequate overall long-term measure of project generation/ demand rates and impacts.

Should a development project be proposed that has an unusually high generation/demand rate, additional analysis may be required. This analysis will include consideration of cumulative demand within the Master Plan area. Based on the analysis, the City may apply a revised generation/demand factor for the subject development project. If monitoring indicates that actual cumulative factors are above or below the estimated averages included on Table 3, these average factors may be adjusted.

Development projects that place a higher than anticipated demand on service capacity, could result in attaining a particular service threshold prior to reaching the total anticipated build out square footage. This could impact improvement needs or limit the projected square footage of development. Conversely, uses that place a lower demand than anticipated on service capacity could result in excess capacity or the ability to develop square footage over and above estimated build out levels.

While it is not possible to predict the specific operational characteristics of each circumstance, the following general parameters can be used as a guide to help identify when additional analysis may be required. Actual determinations and specific analysis requirements will be made by the City on a case by case basis as development projects are submitted.

Traffic

Additional analysis may be required when a development project's total PM peak hour traffic generation exceeds the trip generation based on the average trip rate by 50 trips or more. In determining whether a traffic study is required, the City shall consider the following criteria:

- Roadway volumes on streets adjacent to the Master Plan
- Existing and projected levels of service at site access points
- Existing and projected queue lengths at driveways, right turn lanes and left turn pockets
- Impacts to safe and efficient traffic operation

When a traffic study is required, the analysis shall include, but not be limited to, the following:

- Ingress and egress queue lengths at existing and proposed security gates;
- Levels of service at existing and proposed access points;
- Roadway volumes on streets adjacent to the site and other local roadways that may be affected;
- Estimated trip generation rates;
- A comparison to the traffic analysis in the Master Plan EIR and City's Capital Improvement Program; and,
- Impacts on required improvements including the timing of planned improvements.

The traffic study shall identify mitigation measures that can be implemented by the landowner to achieve General Plan levels of service and efficient circulation on the roadway system in the vicinity of the Master Plan.

Water/Waste water

Additional analysis and/or information regarding the water and waste water service requirements of a proposed project may be required when any of the following occur:

- A proposed development project's maximum daily water or waste water demand exceeds the demand factor by 17.5% or more;
- A significant industrial user/discharger applies for connection to either the water or waste water system; or,
- An industrial user proposes to locate within the Master Plan with water demands of 3,124 gallons per acre per day or more (average), and/or waste water generation rates of 2,500 gallons per acre per day or more (average).

Additional water and waste water analysis will include the following information:

Water

- Average day demand, maximum day demand, and peak hour demand ;
- Hydraulic analysis of the proposed demands and their impacts to the City water distribution system; and,
- Required improvements necessary to accommodate new demands and proposed timelines for implementation.

Waste water

- Average day demand, maximum day demand, and peak hour demand ;
- Impacts of additional waste water on collection and treatment facilities;
- Compliance with regional waste water master plan;
- Required improvements necessary to accommodate additional demands and timelines for implementation; and,
- Anticipated level of chemical or biological demand, and impacts to the biological processes at the waste water treatment plant.

Electric

Additional analysis and/or information regarding the electric service requirements of a proposed project may be required when any of the following occurs:

- A proposed development project's total annual electric demand exceeds the average demand factor by 5% or more; or,
- A parcel or parcels within the Master Plan are sold to businesses other than Hewlett-Packard (except for the Commercial sites); or,
- Unique or unusual reliability requirements are identified in the project proposal.

Additional analysis and/or information required to be submitted may include:

- Peak demand and total energy consumption;
- Timely notice and details of any special equipment or infrastructure needs;
- Reliability requirements; and,
- Cost of outage information.

TABLE 3: ESTIMATED BUILDOUT INTENSITY THRESHOLDS FOR THE HP MASTER PLAN

USE	ACRES	SQUARE FOOTAGE		TRAFFIC		WATER		WASTEWATER		ELECTRIC	
		Average FAR	Total Square Footage	Trip Rate (Total PM Peak Hour trips per 1,000 sq ft)	Total PM Peak Hour Trips	Demand Factor (gallons/ day/acre)	Max Daily Water Demand (2 times avg daily flow)	Demand Factor (gallons/ day/acre)	Max Daily Waste-water Flow (2.3times avg daily flow)	Demand Factor (MW/ acre)	Peak Annual Electric Demand (MW)
COMM	22.5	.25[1]	248,000	2.68[2]	664	2,678[4]	0.12 mgd	1,600[5]	0.08 mgd	0.039[6]	0.88 MW
LIGHT IND	225.5	.27[1]	2,660,000	1.14[3]	3,032	2,678[4]	1..20 mgd	1,600[5]	0.83 mgd	0.079[7]	17.80 MW
TOTAL (New Development)	248		2,908,000		3,696		1.32 mgd		0.91 mgd		18.68 MW
TOTAL[8] (Existing Development)	200		1,330,000		1,516		.33mgd		0.23 mgd		9.00[9] MW
TOTAL (Buildout)	448		4,238,000		5,212		1.65 mgd		1.14mgd		27.68 MW

1. Typical Commercial and Industrial FARs have been adjusted upward to reflect existing and anticipated development levels.
2. Assumes 25% pass-by and 15% internalization with remainder of Master Plan.
3. Standard Light Industrial trip rates have been adjusted upwards based on actual traffic counts of existing Hewlett-Packard development (10/95).
4. Standard Commercial and Light Industrial water demand factors.
5. Standard Commercial and Light Industrial wastewater generation factors.
6. Standard Commercial and Light Industrial electricity demand factors.
7. Standard Light Industrial electricity demand factor has been adjusted upwards to reflect existing and anticipated demand.
8. Actual demand rates based on existing devleopment within the campus as of June 1996.
9. The peak demand for electricity for existing development occurred in July 1995.

5 DEVELOPMENT GUIDELINES

This section of the Master Plan discusses the development guidelines that will be applied to new development with the Master Plan. A discussion of existing design guidelines is followed by a discussion of additional guidelines, standards, or conditions specific to the Master Plan site. All proposed development projects within the Master Plan area will be reviewed to ensure compliance with the objectives of the applicable design guidelines and development standards.

5.1 *Relationship to Existing Design Guidelines*

Two existing documents contain design guidance applicable to development within the Hewlett-Packard Master Plan. They are:

- North Roseville Areas Design Guidelines - Adopted June 22, 1992
- Community Design Guidelines - Adopted December 6, 1995

These documents establish design goals and provide an indication of the type of treatment that is desired. The documents address site and building design issues such as:

- Street landscape requirements
- Entry and focal points
- Buffering of adjacent residential uses
- Required setbacks
- Site grading
- Fencing and screening
- Treatment of storage, loading, and refuse collection areas
- On-site circulation, parking, and access
- On-site landscaping and irrigation
- Architectural guidelines
- Signage guidelines
- Lighting guidelines

5.2 *Additional Standards, Guidelines and/or Conditions*

This section of the Master Plan addresses the intended design treatments of items that are specific to situations found within the Master Plan.

5.2.1 Arterial and Collector Streets

The primary interior roadway within the plan area is Arterial "A" (Figure 8). Arterial "A" is a private road that will be designed to accommodate an ultimate four lanes of vehicular traffic with a landscaped median. A portion of the Arterial "A" route exists as the primary entry to the campus from Foothills Boulevard. The existing street is designed to intentionally slow traffic within the plan area. Both sides of the roadway will have landscaped corridors. The north side of which will be wide enough to accommodate an optional dedicated route

for light electric vehicles or other transportation systems.

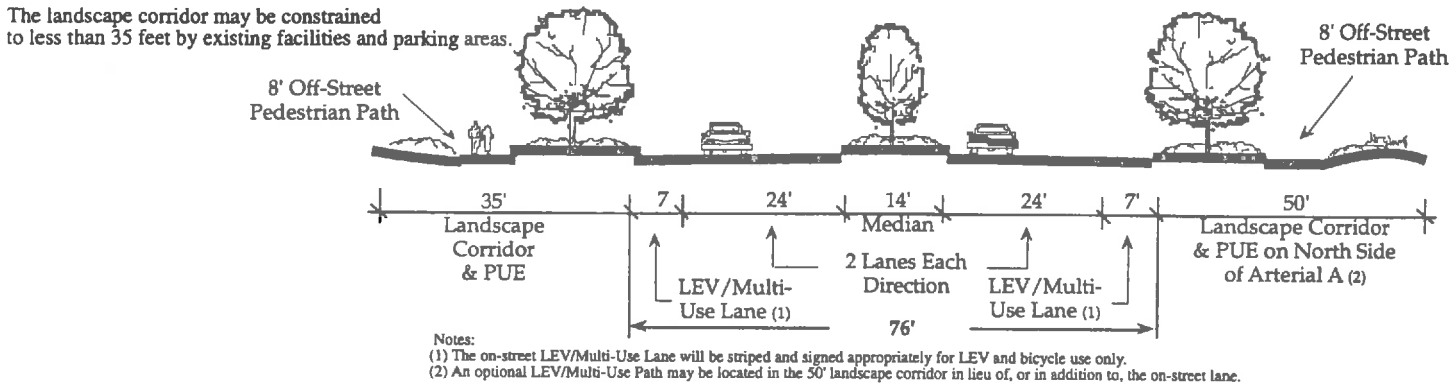


FIGURE 8
ARTERIAL "A" STREET SECTION

COLLECTOR STREETS

All other streets shown on the Circulation Master Plan are two lane collector streets. These are private streets but will be designed to city standards as shown in Figure 9. The location of the collector streets on the Circulation Master Plan is conceptual and may be amended to accommodate specific site plan requirements as the Master Plan is developed.

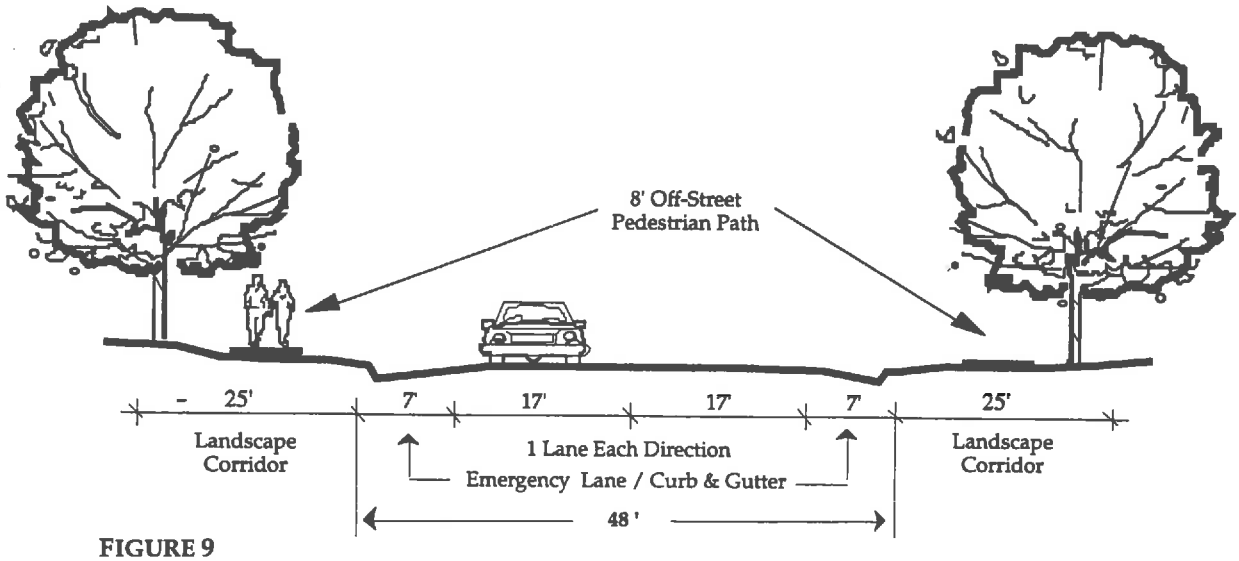


FIGURE 9
CONCEPTUAL SECTION OF TYPICAL COLLECTOR STREET

WOODCREEK OAKS BOULEVARD

Woodcreek Oaks Boulevard will ultimately be extended north of the present terminus in the Northwest Specific Plan area to Blue Oaks Boulevard. The North Roseville Design Guidelines call for a 35 foot landscape corridor along Woodcreek Oaks Blvd. Adjacent to Hewlett-Packard a portion of the street pavement will cover the easement for the existing sewer trunk line. The landscape corridor on the west side of the street will extend twenty feet beyond the existing 60 kv powerline as shown in Figure 10, in effect creating a 40 foot landscape corridor to allow room for trees to be planted adjacent to the existing power line easement.

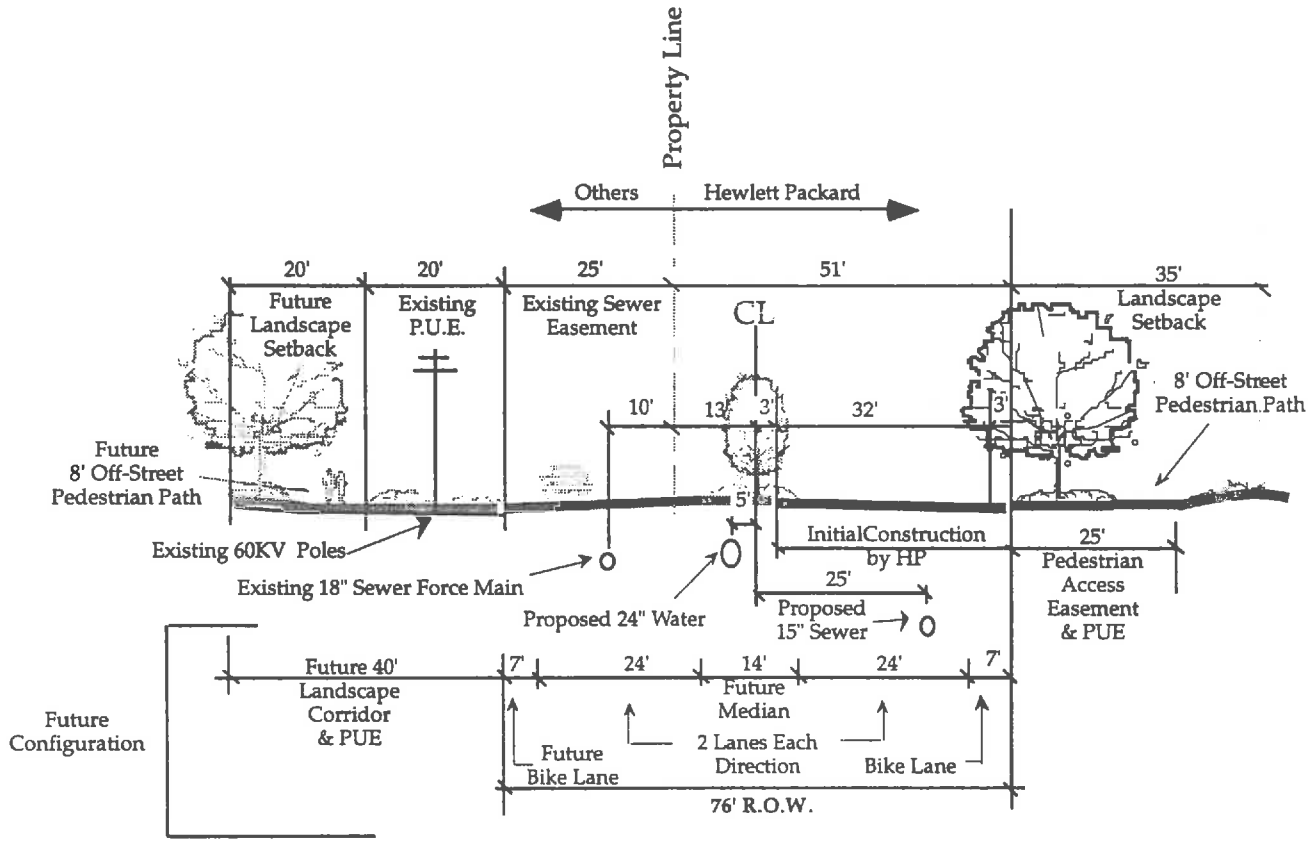
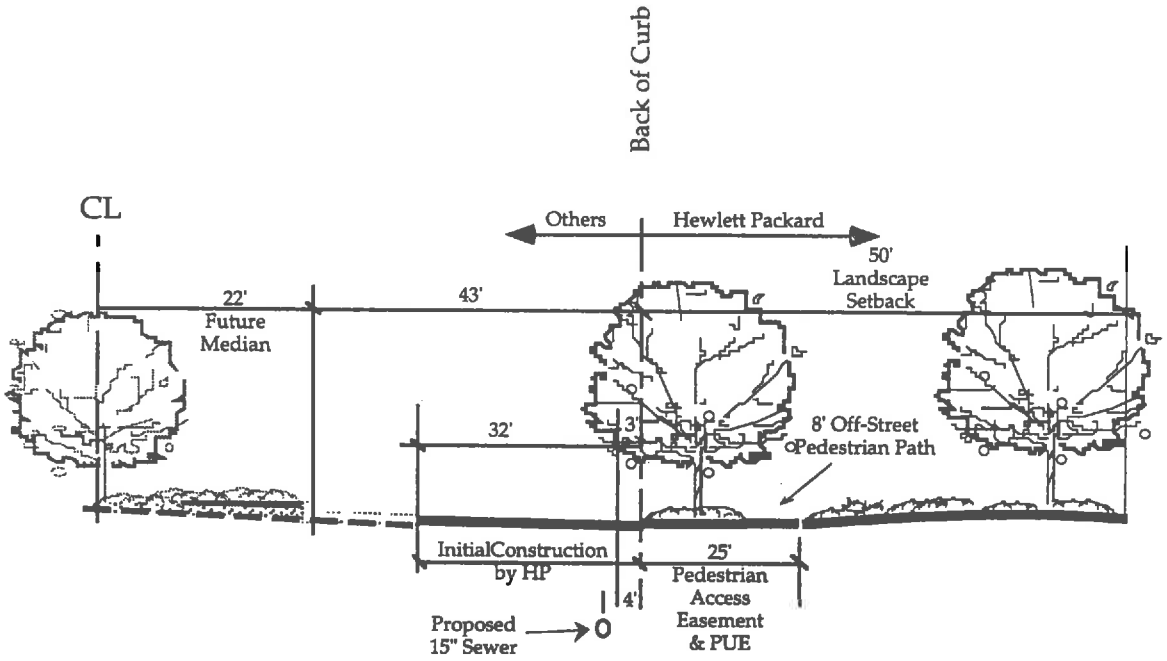


FIGURE 10
CONCEPTUAL SECTION WOODCREEK OAKS BOULEVARD

BLUE OAKS BOULEVARD

Blue Oaks Boulevard has a 130 foot right of way sufficient to accommodate a six lane, expressway standard street with a larger than standard median (Figure 11). It is intended that the road be constructed such that the ultimate configuration can be accommodated without relocating the side curb and gutter improvements. Consequently, the frontage improvements adjacent to the Hewlett-Packard campus will be constructed to the ultimate configuration when required as described in Section 3.2.



Note: The back of curb may be located up to 25 feet north of the existing H-P property boundary depending on the final design of Blue Oaks Boulevard. In no case will the landscape corridor and set back to buildings be required to be more than 50 feet from the back of curb.

FIGURE 11
BLUE OAKS BOULEVARD PARTIAL SECTION

5.2.2 Light Electric Vehicles (LEV's)

Special attention will be given to LEV crossings of arterial and collector streets within the plan area. These are private streets, but may be dedicated to the City in the future. Rumble Strips, speed bumps, signage, painted striping and/or special paving will alert approaching auto drivers that a LEV crossing is eminent. Bollards, and perhaps landscape barriers, will prevent autos from entering into designated non-auto areas such as LEV and/or bicycle/pedestrian paths. Special parking areas with electric recharge stations will be provided near entrances to commercial and industrial buildings.

5.2.3 Bikeways and Pathways

Bikeways are an integral component of the existing campus and will be extended to each building in the expansion area as they develop. Bikeways will avoid truck traffic routes and other high traffic areas where feasible. Bikeways will be planned as a primary element of site circulation to provide direct access to the primary entry of each building and employee recreation area. Bikeways may connect to the commercial uses such that employees may safely and conveniently access them. Security gates may be used to control access to the light industrial areas. The design of the bikeway and pedestrian security gates is an internal design consideration to be addressed by Hewlett-Packard. Design standards for pedestrian and bikeway security may be imposed by Hewlett-Packard on subsequent users through private CC & Rs. Where bikeways are located away from streets but in the public right of way they will meet the standards of a Class I bikeway as defined in the City Bikeway Master Plan.

5.2.4 Landscaping

The landscaping of public roads is addressed in the North Roseville Design Guidelines. In addition to landscaping along roads it is intended that the campus be distinguished by an internal landscaping theme. The theme includes broad canopy trees in parking areas and in the open spaces between buildings to provide shade and a distinctive character to the campus. In addition the distinctive double rows of tall upright trees in the existing campus may be extended to establish a strong linear form traversing the campus to serve as a visual landmark and orientation feature.

5.2.5 Developed Edge Adjacent to Open Space

The open space areas contiguous to formal landscaped or paved areas present a special condition. The transition between formal areas and open space should be visually pleasing. The formal landscaping, utilizing native materials, should provide a gentle transition by utilizing low ground covers rather than tall, dense shrubs. A tree line is permissible, but should have an open canopy and spacing between trees that permits a view toward the open space. Dense conifers and similar massing of trees should be avoided except to frame or block a particular view. An informal cable and post system may be appropriate to demarcate the edge of the open space area and discourage vehicle entry to the open space.

Surface run-off drainage from the landscaped areas can be detrimental to the natural conditions in the open space. Surface water will be controlled through the design of the planting, irrigation and drainage systems in the landscape areas adjacent to open space. Native, drought tolerant plants are recommended to limit the amount of irrigation required and to provide a transition between the natural open space areas and the more formal landscaping near buildings.

5.2.6 Multiple Use of Northern Detention Basin

Although safety and drainage considerations may require fencing and restricted access, the north west detention basin in Commercial Site A has potential for multiple use for informal recreation and special events. Such use could occur if the basin is designed to permit access and has relatively gentle slopes on all, or a portion, of the perimeter. Informal recreation may include jogging, walking and any sports that may be played on unmarked turf, as well as other more passive activities. Special events may include activities such as kite flying, carnivals, music and theatrical events and similar activities. Such events will be subject to the provisions of the municipal code and will require special arrangements to accommodate parking for the event on site or in adjacent parking areas under special joint parking agreements.

The basin may be landscaped to provide a visual amenity viewed from the surrounding uses and adjacent streets. The detention basin may include a small permanent pool as a landscape element, but may also be designed as a dry basin. Appropriate ground cover would include turf and other materials that can withstand occasional flooding and periodic foot traffic. Trees may be included in the landscape plan, but should not be placed such that they would interfere with the drainage control function of the basin. Where feasible trees may be used to screen or frame views to and from the basin, to define special use areas, perimeters and focal points, and to provide shade.

5.2.7 Commercial Area Development Concept

A conceptual schematic site plan (Figures 12A and 12B) for each of the commercial sites illustrates the possible configuration of the building and parking areas. The approximate location of points of access from the adjacent streets indicates that the primary orientation will be to Woodcreek Oaks Boulevard in the northwest site and Foothills Boulevard in the northeast site.

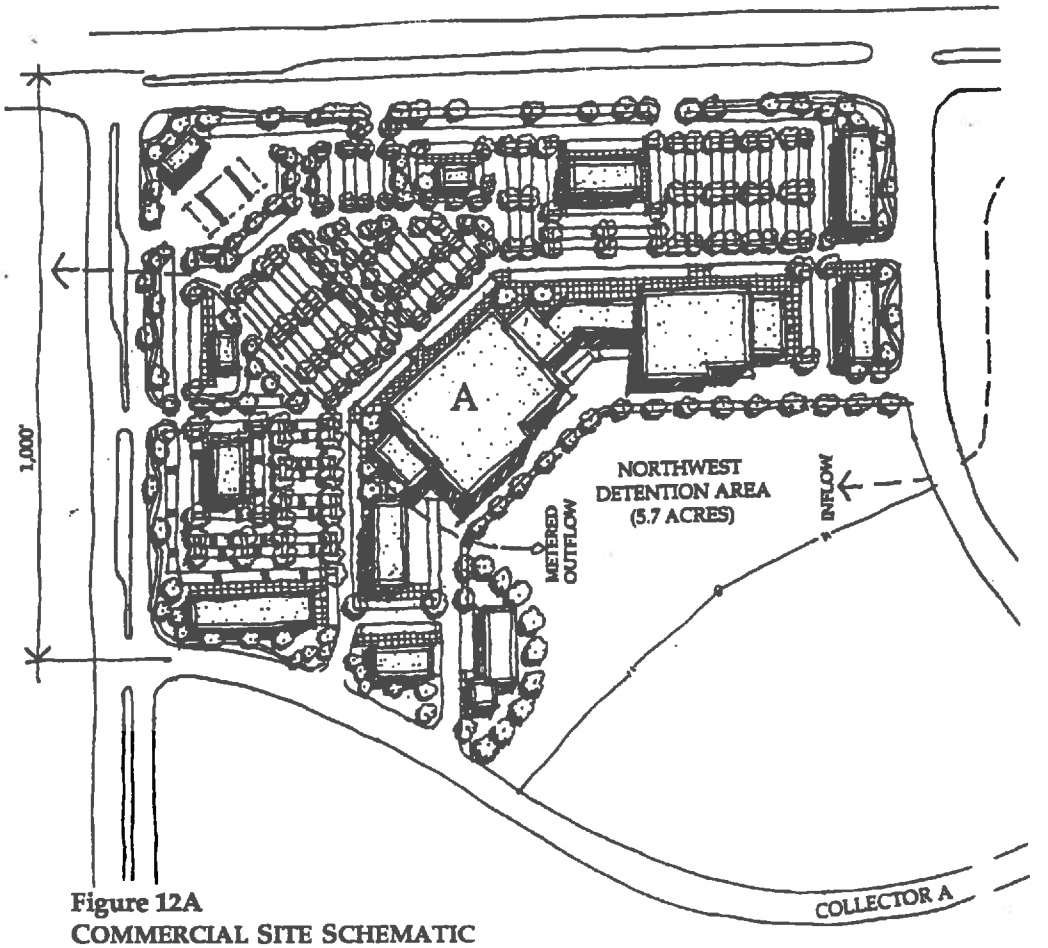


Figure 12A
COMMERCIAL SITE SCHEMATIC
NORTHWEST COMMERCIAL "SITE A"

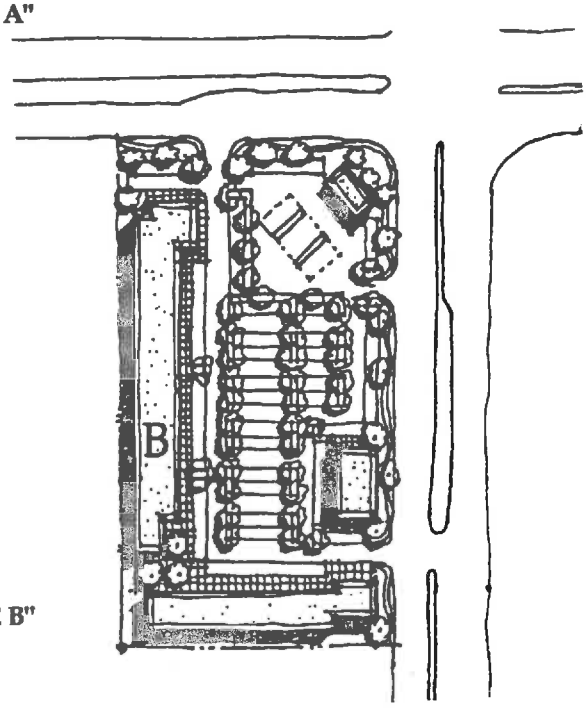


FIGURE 12B
COMMERCIAL SITE SCHEMATIC
NORTHEAST COMMERCIAL "SITE B"

5.2.8 Conceptual Grading Plan

Earthwork operations within the entire Master Plan area are expected to follow existing terrain. Generally, no more than an average two to three feet of cut or fill will occur within the plan boundaries. Gentle slopes of one to two percent will be created to allow for adequate drainage improvements and still allow for minor grading at level building pad sites to occur with little or no change to the overall master grading plan. Approximately 900,000 cubic yards of earth will be moved to accommodate the master grading plan, or less than 4,000 cubic yards per graded acre of land.

Typical building pad elevations will be at or near elevation 130. Those building pads will be set much more than the minimum City of Roseville standard of two feet for pad locations above the 100-year design storm. Most pads will be 10 to 15 feet above the 100-year event for the South Branch of Pleasant Grove Creek.

Street grades within the existing campus are constructed with less than a three percent centerline gradient. All proposed streets are planned to continue this standard. Minor changes in this standard may occur to accommodate local drainage conditions.

6. DEVELOPMENT APPROVAL PROCESS

This section of the Master Plan describes the various permits and associated processes that are required before additional physical development within the Master Plan area may occur. A process is also identified for determining consistency with, and for amending the Master Plan.

6.1 Development Approval Process

Measures have been incorporated into the Master Plan to allow for a streamlined City administrative review and approval process for development projects within the M1-SA zone district. All other development permits, including those within the GC-SA districts, are intended to be subject to the standard permit requirements of the Roseville Zoning Ordinance and other applicable documents. In addition, permits may be required by other agencies such as the US Army Corps of Engineers, Dept. of Fish and Game, and the Air Pollution Control District.

6.1.1. Administrative Design Review Permit

The administrative design review process will be used to review and approve development of permitted uses within the Light Industrial-Special Area (M1-SA) District. Evaluation and approval of the administrative design review permit will be performed in accordance with the procedures outlined in Article V of the Zoning Ordinance and as described here.

The decision to issue an administrative design review permit will be based on a determination of a development proposals consistency with the Master Plan. This determination shall be made by the approving authority (Planning Director), and will be based on the following factors as outlined in the Project Evaluation Form included as Appendix A to the Master Plan document.

- Land Use and Zoning
- Master Plan Components
- Intensity Thresholds and Infrastructure Sequencing
- Design Guidelines and Development Standards
- EIR Mitigation Measures
- Development Agreement Provisions

Planning Director Referral
If, after reviewing the proposed project for consistency with the provisions of the Master Plan, the Planning Director determines that the proposal is inconsistent with or gives rise to issues that were not addressed by the Master Plan, the proposed project may be referred to the Planning Commission as the appropriate approving authority.

Processing Procedures
The processing procedures for the administrative design review permit within the M1-SA district are the same as those specified in Article V of the Roseville Zoning Ordinance. Please refer to the Zoning Ordinance for a complete description of the administrative design review permit processing procedures.

6.1.2 Other Development Permits

This section of the Master Plan addresses other permits that may be required for physical development of the Master Plan. The following permits and associated review and approval processes are anticipated to be required at some point during the buildout time frame of the proposed Master Plan:

Administrative Permit
This permit will be used for determining the appropriateness of certain uses in the M1-SA or GC-SA. This process is also used for minor modifications to approved permits. Evaluation and approval of the administrative permit will be performed by City staff in accordance with the procedures outlined in Article V of the Roseville Zoning Ordinance.

Design Review Permit
This permit process would be used for development of principally permitted uses within the General Commercial-Special Area districts. Evaluation and approval of the review permit will be performed by City staff and City commissions in accordance with the procedures outlined in Article V of the Roseville Zoning Ordinance. The evaluation will be based on the proposed project's consistency and substantial compliance with the provisions of the Master Plan, the EIR, the development agreement, and other applicable City requirements.

Conditional Use Permit
This permit process would be used for conditionally permitted uses within the Light Industrial and General Commercial-Special Area districts. Evaluation and approval of the permit will be performed by City staff and City commissions in accordance with the procedures outlined in Article V of the Roseville Zoning Ordinance. The evaluation will be based on the proposed project's consistency and substantial compliance with the provisions of the Master Plan, the EIR, the development agreement, and other applicable City requirements.

Tree Permit
This permit is required by the Tree Preservation Ordinance for projects involving regulated activities or removal of native oak trees. Depending on the type of tree permit sought, evaluation of the permit will be performed by City staff and/or City commissions in accordance with the procedures outlined in the Tree Preservation Ordinance and Zoning Ordinance.

Sign Permit
This permit is required by the Roseville Sign Ordinance for any new signs proposed on the campus. Evaluation of the permit will be performed by City staff and/or City commissions in accordance with the provisions outlined in the

Sign Ordinance and applicable design guidelines.

Tentative Maps
Parcel or subdivision maps will be required for the creation of parcels within the Master Plan area. Such maps will be reviewed to ensure compliance with the Roseville Subdivision Ordinance and Subdivision Map Act.

Transportation Systems Management Plan
The existing Master Plan campus is covered by a TSM plan. New facilities will have to be incorporated into the plan and the plan updated periodically subject to requirements of state laws and the City's TSM Ordinance.

US Army Corps of Engineers 404 Permits
This permit is described in the Master Plan EIR, and is a mitigation measure for construction related impacts to jurisdictional waters such as vernal pools and other wetlands. This permit is issued and regulated by the US Army Corps of Engineers.

RWQCB Water Quality Certification
This permit is described in the Master Plan EIR and is a mitigation measure for construction related impacts to wetlands and the creek. It is also a condition of the 404 permit. This permit is issued and regulated by the Central Valley Regional Water Quality Control Board.

California Dept. of Fish and Game Streambed Alteration Agreement
This permit is described in the Master Plan EIR and is a mitigation measure for construction related impacts to plants, animals and water quality in the South Branch of Pleasant Grove Creek and its tributaries. This permit is issued and regulated by the Department of Fish and Game.

State Storm Water/NPDES Permits
These permits are described in the Master Plan EIR and are mitigation measures for construction and project operation related impacts to water quality, and are required by state and federal permitting agencies. This permit is issued and regulated by the State Water Resources Control Board.

PCAPCD Authority to Construct
This permit is described in the Master Plan EIR and is a mitigation measure for construction and project operation related impacts to air quality. This permit is issued and regulated by the Placer County Air Pollution Control District.

Hazardous Materials Permits
These permits may be required as determined by the Roseville Fire Dept. or other applicable regulatory agencies.

6.1.3 Master Plan Consistency and Amendment Process

One of the primary objectives of the Master Plan is maintaining flexibility and the ability to react quickly to changes. To achieve this, the following process is established which allows the Planning Director to interpret plan consistency and

the type of plan amendment, if any, that is required by proposed changes.

1. Substantial Conformity with Plan - The Planning Director may make the determination that a proposed change is consistent with the intent and basic provisions of the Master Plan, and therefore in substantial conformity with the Plan. In such cases, no amendment to the Plan is required.

2. Minor Modification to the Plan - If it is determined that a proposed change would result in a minor deviation to the Master Plan, then an Administrative Permit is required. Such permit shall be reviewed, consistent with Article V of the Zoning Ordinance.

3. Major Modification to the Plan - When a proposed change is considered to be inconsistent with the adopted Master Plan, an amendment to the Plan is required. Major modifications require action by the Planning Commission and City Council.

Any proposed change to the Master Plan may, at the discretion of the Planning Director, be forwarded to the Planning Commission for review.

RECYCLED WATER SYSTEM MASTER PLAN

Date: June 15, 2015

By: Derrick Whitehead, PE
Municipal Consulting Group

MUNICIPAL CONSULTING GROUP

6238 Birdcage Street Citrus Height, CA 95610

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INTRODUCTION

STUDY PURPOSE AND OBJECTIVES

The purpose of this Recycled Water System Master Plan (Plan) is to identify those parcels to be served by recycled water, calculate demands, and properly size the recycled water supply system within the Hewlett-Packard / Campus Oaks Rezone & Master Plan Project (HPCO) while meeting the City of Roseville's (City) Recycled Water Utility Design Standards.

The primary objective of this Plan is to set forth the recycled water infrastructure requirements of the HPCO, more specifically the recycled water system to be constructed in the Campus Oaks Area . This Plan, in part, satisfies the need to provide sufficient information on the recycled water demands and conveyance system to assist in establishing conditions within the project development agreement, environmental review and in the future, the review and approval of the improvement plans within the HPCO Master Plan area.

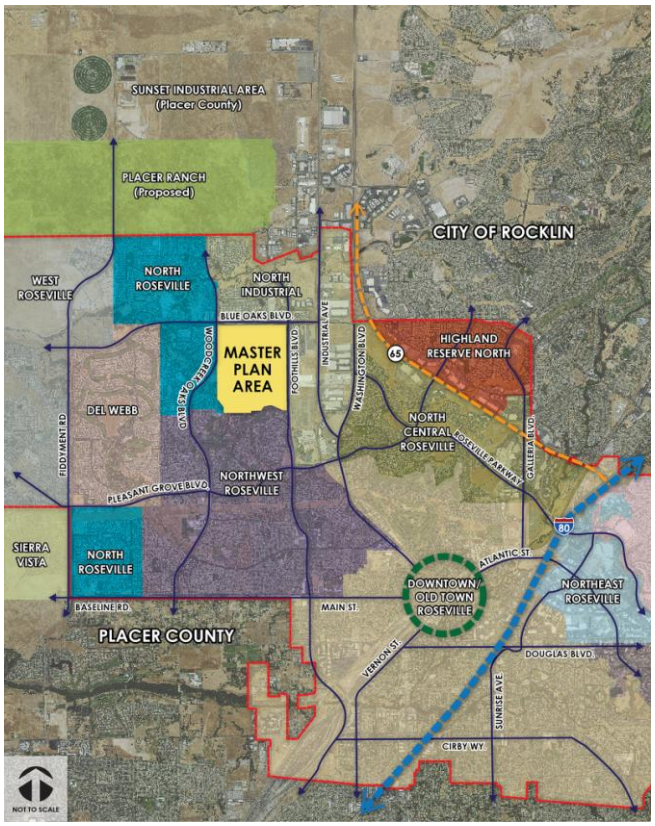

Figure 1- Project Location

PROJECT DESCRIPTION

Hewlett-Packard and BBC Roseville Oaks, LLC have proposed an amendment to the Hewlett-Packard Roseville Campus Master Plan that would reconfigure the land uses and infrastructure on a portion of the Master Plan Area. The Hewlett-Packard Roseville Campus Master Plan establishes development regulations for 492.2 acres at the southwest corner of Blue Oaks and Foothills Boulevards within the City of Roseville's North Industrial Planning Area (see **Figure 1**). Originally adopted in June 1996, the Master Plan envisioned a manufacturing and office campus to accommodate Hewlett-Packard's existing and planned operations. Hewlett-Packard has subsequently adjusted its facilities needs for the Roseville campus, divesting its ownership in all but a portion of the Master Plan Area.

Figure 2- HPCO Amendment Area

The proposed amendment to the Master Plan, the Hewlett-Packard / Campus Oaks (HPCO) Rezone & Master Plan Amendment provides for a mixed-use community on a 375.7-acre portion of the original Master Plan Area (See **Figure 2**). The HPCO Amendment Area is organized into two physically and functionally integrated sub-areas:

- the Hewlett-Packard Campus accommodating existing and planned light industrial, recreation and related uses (blue area);
- and Campus Oaks (tan area) planned for a new mix of tech/business park, office, commercial, residential, park and recreation, open space and public uses.

The HPCO Master Plan Amendment supersedes all prior Master Plan requirements for the HPCO Amendment Area.

PROJECT SETTING

The HPCO Amendment Area has been designated for development for over 35 years. Surrounded by established employment, commercial and residential uses, the eastern portion of the Amendment Area is partially developed by Hewlett-Packard, one of Roseville's largest employers. The western portion of the Amendment Area, Campus Oaks, is undeveloped consisting primarily of annual grasslands with gently rolling topography that has been highly disturbed over time through bi-annual disk-plowing. The southern portion of Campus Oaks contains a City owned open space/wetland preserve along the South Branch of Pleasant Grove Creek.

PROPOSED PROJECT

The HPCO Master Plan Amendment establishes updated land use and zoning regulations, mobility and infrastructure plans, public services provisions, design guidelines, and development approval processes for the 375.6-acre Amendment Area. The remainder of the larger Master Plan Area will continue to be regulated by the existing Hewlett-Packard Roseville Campus Master Plan.

The HPCO Master Plan Amendment proposes to the retain the existing Light Industrial land use designation on a majority of the Hewlett Packard Campus, refining the square footage allocated to the Campus based upon Hewlett-Packard's projected development program. In addition, a City park is

proposed on the western edge of the Campus.

The existing Light Industrial land use designation on Campus Oaks is proposed to be changed to a mix of tech/business park (LI), office, commercial, residential, park and recreation, open space and public uses. The existing City owned wetland preserve will be retained, and will be augmented by additional open space parcels.

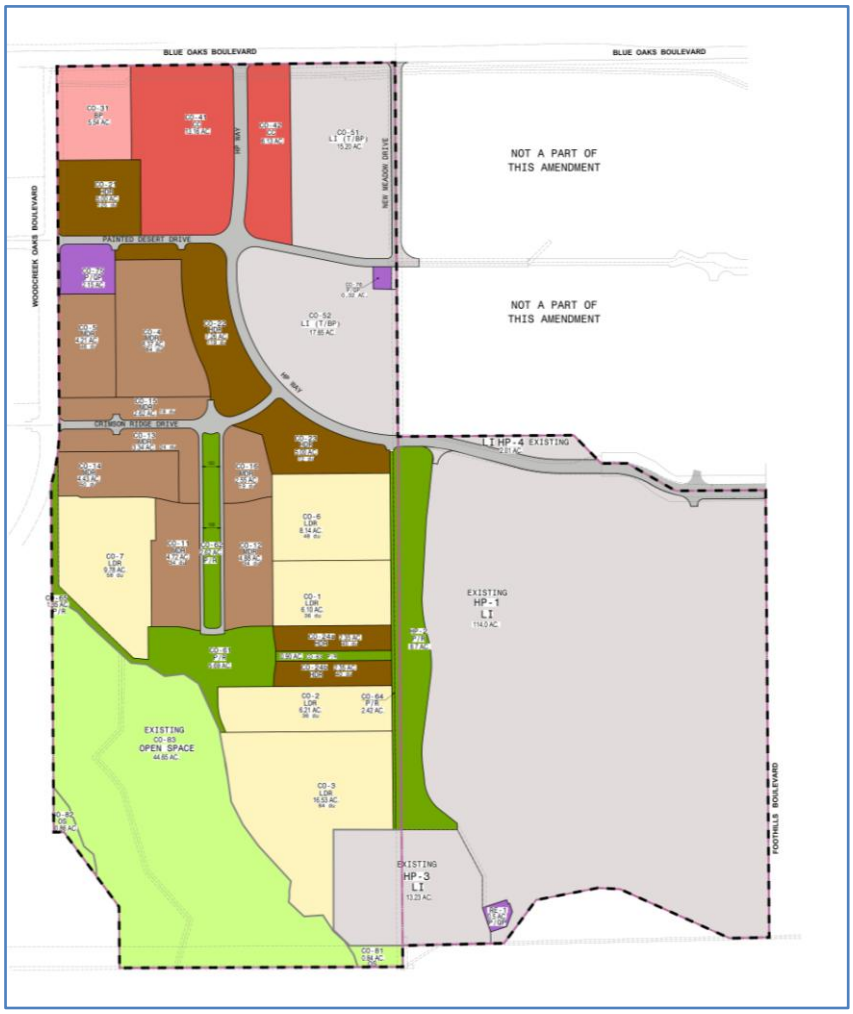

Figure 3 – HPCO Land Use Plan

The HPCO Master Plan Amendment includes proposed revisions to the mobility and utility systems to accommodate the revised land uses. The mobility system will include a modified grid street pattern that is connected to, and helps to complete, the City's larger roadway network; an interconnected system of paths, sidewalks and bike lanes; and multiple transit stops. HP Way will be constructed as a public roadway through the project site. Other roadway connections will include the extensions of New Meadow Drive from the north, and Painted Desert and Crimson Ridge Drives from the west.

The construction of backbone utility infrastructure will be necessary to accommodate full build-out of the Amendment Area. Water, recycled water, wastewater, drainage, electric, natural gas, and telecommunications infrastructure exist within and/or adjacent to the Amendment Area. Since adoption of the 1996 Master Plan, substantial development and associated infrastructure improvements have been constructed in the vicinity of the Amendment Area. The HPCO Amendment accounts for these changed conditions to define an updated and efficient backbone utility infrastructure program.

Proposed land uses within the HPCO Master Plan Area are summarized on **Table 1**, and illustrated on **Figure 3**.

TABLE 1: HPCO Master Plan Amendment Area Land Use Summary

Land Use	Gross Acres	Building Square Feet (sf)					Dwelling Units (du)		
		Existing	Future	Total Capacity	FAR Range	Avg. FAR	Units	du/ac Range	Avg. du/ac
EMPLOYMENT AND COMMERCIAL USES									
Light Industrial (LI)	129.24 ac	593,820 sf	606,180 sf	1,200,000 sf	20-50%	21%			
Tech/Business Park (T/BP-LI)	32.85 ac		300,000 sf	300,000 sf	20-40%	21%			
Business Professional (BP)	5.54 ac		60,000 sf	60,000 sf	20-40%	25%			
Community Commercial (CC)	19.29 ac		170,000 sf	170,000 sf	20-40%	20%			
Sub-Total	***186.92 ac***	***593,820 sf***	***1,136,180 sf***	***1,730,000 sf***		***21%***			
RESIDENTIAL USES									
Low Density (LDR)	46.76 ac						242 du	0.5-6.9	5.2
Medium Density (MDR)	35.60 ac						310 du	7.0-12.9	8.7
High Density (HDR)	21.97 ac						396 du	13.0+	18.0
Sub-Total	***104.33 ac***						***948 du***		***9.1***
PARK, OPEN SPACE AND PUBLIC USES									
Park & Recreation (P/R)	19.44 ac								
Paseo (P/R)	2.25 ac								
Open Space (OS)	46.35 ac								
Public (P/QP)	2.97 ac								
Sub-Total	***71.01 ac***								
Backbone Roads	13.47 ac								
TOTAL	**375.73 ac**	***593,820 sf***	***1,136,180 sf***	**1,730,000 sf**		**21%**	**948 du**		**9.1**

NOTE: Existing development consists of Buildings R3 (126,220 sf), R4 (131,190 sf), R5 (158,760 sf) and R6 (177,650 sf).

Recycled Water Demand

Table 2 summarizes the amount of recycled water needed to serve the Hewlett-Packard /Campus Oaks Rezone Area is 145.19 AFY. This includes the recycled water used to irrigate HP-02, which is a park on the HP campus. Full utilization of recycled water without reducing the demand is used to as the underlying basis for evaluating the various system components in this Plan.

Demand Calculation

Each land use type has different landscaping requirements for using recycled water. **Table 3** identifies the amount of area typically landscaped for each land use type that will be irrigate with recycled water.

For example, a High Density Residential land use includes approximately 20% landscaping in the water usage estimate. The estimated demand is is multiplied 40% resulting in 17.49 AFY of recycled water used for irrigation. This estimate is prior to applying water conservation measures identified in the Water Conservation Master Plan Document for Hewlett-Packard / Campus Oaks Rezone.

Table 2
Recycled Water Demand for
Campus Oaks and HP Rezone

		Type of Landscape	Total Acres	Landscaped Acres	RW AFY
Residential					
	Low Density Residential	Potable	46.76	0.00	0.00
	Medium Density Residential	Potable	35.60	0.00	0.00
	High Density Residential	Recycled	21.97	4.39	17.49
	Sub-Total:		104.33	4.39	17.49
Non-Residential					
	BP/ Commercial	Recycled	57.68	17.30	50.36
	Parks	Recycled	12.99	11.69	39.13
	Open Space	-	46.35	0.00	0.00
	Public Quasi Public	Recycled	2.47	1.24	2.46
	Right of Way[1]	Recycled	27.06	8.78	9.53
	Sub-Total:		146.55	39.01	101.49
Campus Oaks Total:			223.82	43.40	118.98
HP-2[2]	Park	Recycled	8.7	7.83	26.21
HP & Campus Oaks Total:			232.52	51.23	145.19

1. Right of Way – Recycled Water Demands were not calculated for the Water Conservation Master Plan because their demands are considered to be part of the demand factors for the various land use types. Demands are included here to ensure there is adequate distribution system capacity is available to meet peak delivery requirements.
2. HP-2 Park not included in Campus Oak, but is included for recycled water infrastructure sizing.

Table 3 lists the landscaped area percentage used to develop recycled water use for each of parcel. Right of way demands as well as the HP-2 Park site Demands are being included to ensure there is adequate distribution system capacity available to meet peak delivery requirements.

Table 3
Irrigated Surface Area Factors

Land Use Type	Irrigated Surface Area Factors[1] (Ratio of Irrigated Surface Area to Total Surface Area)
Park / Paseo / Streetscape[2]	0.90
School / Public / Quasi Public	0.50
High Density Residential	0.20
Commercial / Business Professional / Light Industrial	0.30

1. The irrigated surface area factor is consistent with the WRSP Recycled Water Study (May 2003).
2. Streetscape areas were estimated based on the current alignment of arterial and collector streets.

PLAN DEVELOPMENT

The base recycled water demands of 118.98 AFY for the Campus Oaks Area plus and additional 26.21 AFY for HP-02 totaling 145.19 AFY form the basis of sizing the various elements of the recycled water system required to serve the project. The methodology used for evaluating the recycled water system in this Plan conforms to the methodology and criteria used by the City's Environmental Utilities Department. The City's current Design Standards (January, 2010) were used as a guide for developing this evaluation.

The Plan will look at three major areas to determine if there are any system constraints that could impact the use of recycled water in the Plan area. The three areas of concern are:

1) Available Supply / Treatment Plant Capacity
2) Distribution System Capacity
    a. Regional Transmission
    b. Local distribution system
3) Available Storage Capacity

Available Supply / Treatment Plant Capacity

The recycled water system receives its water supply from two regional wastewater treatment plants - Dry Creek Wastewater Treatment Plant (DCWWTP) and the Pleasant Grove Wastewater Treatment plant (PGWWTP). Both plants are located on the west side of Roseville and discharge to different creeks as the names imply. Recycled Water supply for

the Campus Oaks Area predominately will come from the DCWWTP, but the two treatment plants have the ability to provide recycled water into the recycled water system. Being primarily served by the DCWWTP and having access to the PGWWTP provides a reliable backup in the event of an emergency.

Roseville contracted with RMC to develop the "South Placer Regional Wastewater and Recycled Water Systems Evaluation" (Systems Evaluation). The original Systems Evaluation was completed in 2004 and was updated in 2009. A major element of the documents is a "Recycled Water Systems Evaluation" (RWSE). The RWSE conducted a recycled water use market analysis, recommended recycled water projects in a phased approach.

Based on the Systems Evaluation, there does not appear to be a problem with availability of a recycled water supply. As noted earlier, the recycled water supply comes from the DCWWTP through the North Zone Pump Station site. The DCWWTP currently treats approximately 9.5 mgd average dry weather flow (ADWF) and is expected to be expanded to 21 mgd ADWF to meet build out of demands of the region. Current recycled deliveries inside the City are in the range of 3,000 AFY at roughly 5.2 mgd during the summer irrigation months.

Figure ES - 18: Recommended Projects for Alternative C

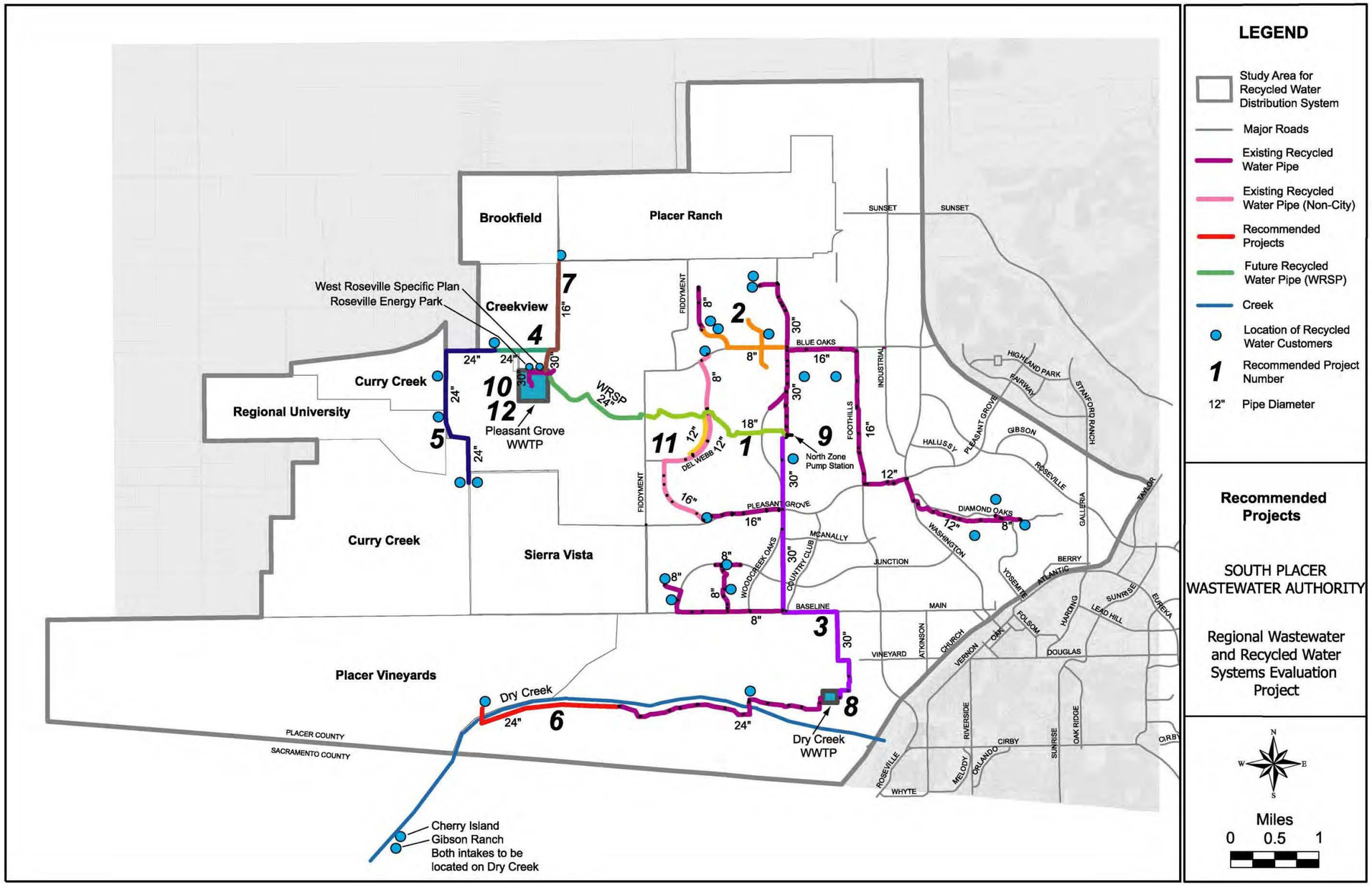

Figure 4 – RWSE Project List - System Layout – Alternative C

Distribution System Capacity

Figure 4 provides a system wide layout of existing and proposed facilities needed to provide recycled water service to existing and future growth areas. From the figure, one can see that the Campus Oaks Area is circled by recycled water infrastructure; the North Zone Pump Station (southwest corner of project); a 30-inch line to the west; a 16-inch line on the north paralleling Blue Oaks Boulevard that extends to Foothills Boulevard; then south along Foothills Boulevard; and, then ultimately extending to Diamond Oaks Golf Course. Because of the close proximity to the main transmission lines and the North Zone Pump Station, only the on-site distribution system has been evaluated.

Available Storage Capacity

The North Zone Pump Station is located adjacent to the southwest corner of the Campus Oaks area. It is comprised of a 1.5 million gallon recycled water storage tank and a booster pump station. The RWSE conducted an hour-by-hour analysis to determine storage requirements and optimize operational requirements for recycled water in conjunction with daily treatment plant (both DCWWTP and PGWWTP) operations. Storage facilities (either a tank or pond) were assumed at each urban growth area having a volume of 1 peak day (July) of recycled water supply. The three major scenarios determined that storage at either PGWWTP or DCWWTP was not needed as long as the recycled water generated at the plants could be delivered to the urban growth areas as it was generated.

Section 6.2.7 of the RWSE identifies the HP Campus and Rezone as "Existing Near Future Customers" with an estimated demand during the irrigation period of 1,219 gpm. To serve the "Existing Near Future Customers requires the addition of a recycled water pump at the DCWWTP and a pump at the North Zone Pump Station, and specifically states that a volume increase to the storage tank at the North Zone site is not required.[1] It further states that the urban growth areas will be required to have recycled water storage facilities with the capacity to store one peak day (in July) demand volume but does specify the same requirement for infill projects. The Campus Oaks Area will be required to add additional pumping capacity and ancillary equipment necessary to meet increased peak demands.

IRRIGATION DEMAND PROJECTIONS

This section details the criteria used in this Study for estimating irrigation demands. The criteria described in this section are consistent with the methods used in the Recycled Water Study for West Roseville Specific Plan Area (WRSP Study) dated May 21, 2003.

[1] South Placer Regional Wastewater and Recycled Systems Evaluation, Dec 2009, page 6-28.

Irrigation Demands

The WRSP study developed an irrigation demand pattern based on local evapotranspiration rates, precipitation data and irrigation demand patterns. Results of this pattern are shown on **Table 4** and are adopted in this study.

Table 4
Typical Irrigation Demand Pattern in Sacramento Area

Month	ET-Turf Grass (inches)	Monthly Precipitation (inches)	Monthly Irrigation Demand (1) (inches)	Monthly Irrigation Demand (feet)
January	0.88	3.57	0.0	0.00
February	1.36	3.24	0.0	0.00
March	2.48	2.45	0.6	0.04
April	3.76	1.52	3.3	0.27
May	4.96	0.71	5.7	0.48
June	6.16	0.24	8.0	0.67
July	6.8	0.02	9.2	0.77
August	5.84	0.04	8.0	0.67
September	4.48	0.24	5.8	0.48
October	2.96	0.97	2.8	0.24
November	1.28	1.68	0.0	0.00
December	0.8	3.63	0.0	0.00
Average	3.48	1.53	3.6	0.30
Total	41.76	18.31	43.4	3.62

1. Demands from Table 4-1 of Recycled Water Distribution System Feasibility Study, April 2000.

As shown in **Table 4,** the total annual unit irrigation demand for turf grasses is estimated at 43.4 inches. A peak monthly irrigation demand of 9.2 inches is projected for July. November through February demand values were considered to be zero due to the assumption that irrigation demands are met from the available rainfall or atmospheric humidity.

Recycled Water Customers

Land use types that will use recycled water are parks, streetscape, paseo, schools, public/quasi public, commercial / business professional, industrial and attached high density residential. It is assumed under this evaluation that recycled water will be used only for irrigation purposes on all but the commercial / business professional / industrial types of land uses.

Estimated Irrigated Surface Area

Total irrigated surface area for each recycled water large lot within the Campus Oaks Area was obtained from the Land Use Plan, **Figure 3 and Table 1**. Irrigated surface area factors in **Table 3** are used to calculate the amount of surface area that would be irrigated for each land use type.

Then appropriate demand factors are used to calculate recycled water demands. The reason for using the irrigated surface factors is to account for buildings, sidewalks, and other hardscape areas that are not irrigated.

Average Day Demands

The average day demand (ADD) for a given customer is defined as the total annual irrigation water usage divided by the number of days in a year (365). Thus, average day demand is equivalent to what a customer's flow rate would be if water were delivered at a steady rate, 24 hours a day, 365 days a year. Average day demands are calculated (in gallons per day) by multiplying the irrigated surface area (in acres) by the average annual irrigation demand.

Maximum Day Demands

The maximum day demand (MDD) is defined as the typical flow rate during the seasonal period of greatest demand. Summer generally has the greatest irrigation demands in the Roseville area. The maximum monthly irrigation demand of 9.2 inches occurs during the month of July. **Table 4** shows that the average monthly irrigation demand for the year is 3.6 inches; therefore the peak day demand factor is 9.2/3.6 = 2.55. Maximum Day Demands are estimated by applying the peaking factor of 2.55 to the calculated average day demands.

Peak Hour Demands

The peak hour demand (PHD) is assumed to be equal to peak day volume distributed over the irrigation window for the day. The PHD is obtained by multiplying the MDD by the peak hour demand peaking factor, which is a function of irrigation duration. Assuming a 9-hour irrigation period (9:00p.m. to 6:00 a.m.), the peak hour demand peaking factor is 2.7 (24 hr / 9 hr).

Operational Demands

Irrigation patterns vary from customer to customer. Land use, total irrigation area, irrigation system design, length of irrigation time, and other factors impact how a site is irrigated. A system operational factor is used with the PHD to account for the irrigation system irregularities. A factor of 1.5 times the PHD is used to determine operational demands to account for the variations in the design and fluctuations in irrigation patterns. This operational demand allows the City to plan some flexibility into their systems. The operational demand peaking factor is only applied to the PHD for sizing the distribution system and is not applied to the PHD for sizing of the pump stations or storage tanks.

Summary of Project Irrigation Demand Estimates

Table 5 shows the estimated irrigation demands calculated for Campus Oaks Area. The General Water System Layout for the Campus Oaks Area is shown in **Figure 5**.

Table 5
Summary of Irrigation
Demand Projections

		Type of Landscape	Total Acres[1]	Landscaped Acres[2]	RW AFY[3]	ADD gpm	MDD gpm	PHD gpm	PHD *FLEX gpm
Residential							2.5	2.67	1.5
	Low Density Residential	Potable	46.76	0.00	0.00	0.00	0.00	0.00	0.00
	Medium Density Residential	Potable	35.60	0.00	0.00	0.00	0.00	0.00	0.00
	High Density Residential	Recycled	21.97	4.39	17.49	10.85	27.11	72.39	108.59
	Sub-Total:		104.33	4.39	17.49	10.85	27.11	72.39	108.59
Non-Residential									
	BP/ Commercial	Recycled	57.68	17.30	50.36	31.22	78.05	208.39	312.58
	Parks	Recycled	12.99	11.69	39.13	24.26	60.65	161.93	242.89
	Open Space	-	46.35	0.00	0.00	0.00	0.00	0.00	0.00
	Public Quasi Public	Recycled	2.47	1.24	2.46	1.53	3.82	10.19	15.29
	Right of Way[4]	Recycled	27.06	8.78	9.53	5.91	14.78	39.46	59.18
	Sub-Total:		146.55	39.01	101.49	62.92	157.29	419.96	629.94
Campus Oaks Total:			223.82	43.40	118.98	73.76	184.40	492.35	738.53
HP-2	Park	Recycled	8.70	7.83	26.21	16.25	40.62	108.45	162.68
HP & Campus Oaks Total:			232.52	51.23	145.19	90.01	225.02	600.80	901.20

1. Total Site Area is the sum of all the recycled water customer sites (park, streetscape, paseo, school, public/quasi public, commercial, light industrial, and high density residential), including those areas that do not require water for irrigation (buildings, pavement, etc.)
2. Total Irrigated Area is the total sum of all areas that are assumed to require water for irrigation. See Table 3 for factors used for this calculation.
3. Demands are based on the estimated use identified in the Water Conservation Plan; also, demands do not include system losses.
4. Right of Way – Recycled Water Demands were not calculated for the Water Conservation Master Plan because their demands are considered to be part of the demand factors for the various land use types. Demands are included here to ensure there is adequate distribution system capacity is available to meet peak delivery requirements.

The demands for the Campus Oaks Area are based on the current land use plan (January 2015) adjusted by the Irrigated Surface Area Factors to account for hardscape.

SYSTEM DESCRIPTION AND DESIGN CRITERIA

Proposed recycled water transmission mains and distribution facilities are to be designed to provide the required flow while maintaining acceptable service pressures to all customers within the Campus Oaks Area. A description of the proposed recycled water system and the City of Roseville's operating goals and facility sizing requirements are discussed in this section.

System Description

The recycled water backbone pipe network internal to the Campus Oaks Area is shown in **Figure 5.** Transmission mains to the site are discussed above in the Distribution System Capacity section.

System Criteria

The City of Roseville will be responsible for the operation and maintenance of the offsite recycled water facilities that service the Campus Oaks Area. Onsite recycled water utilities downstream of billing meters will be maintained by the individual customers. The City has developed minimum operating criteria to be used in the planning new or additions to the recycled water distribution systems. The design criteria help ensure adequate pressure and flow are available to serve recycled water customers on a daily basis. The criteria used in this study for the backbone recycled water pipelines are listed in **Table 6**.

Table 6
Recycled Water Hydraulic Design Criteria[1]

System Component	Criterion
Minimum pressure at Customer Connections During Irrigation Period	40 psi
Maximum Pressure at a Customer Connection During Non-irrigation Period	60 psi
Maximum Pressure	120 psi
Minimum Pipe Size (including laterals)	6 inch
Available Pipe Sizes (inches)	6, 8, 12, 16, 24, 30
Maximum head loss per 1000 lf of pipe	5.0 Feet
Velocity Range	2 to 8 fps
Hazen-Williams Coefficient for Headloss Calculation	130

1 - Table 6-7 – Recycled Water Systems Evaluation, 2009, RMC

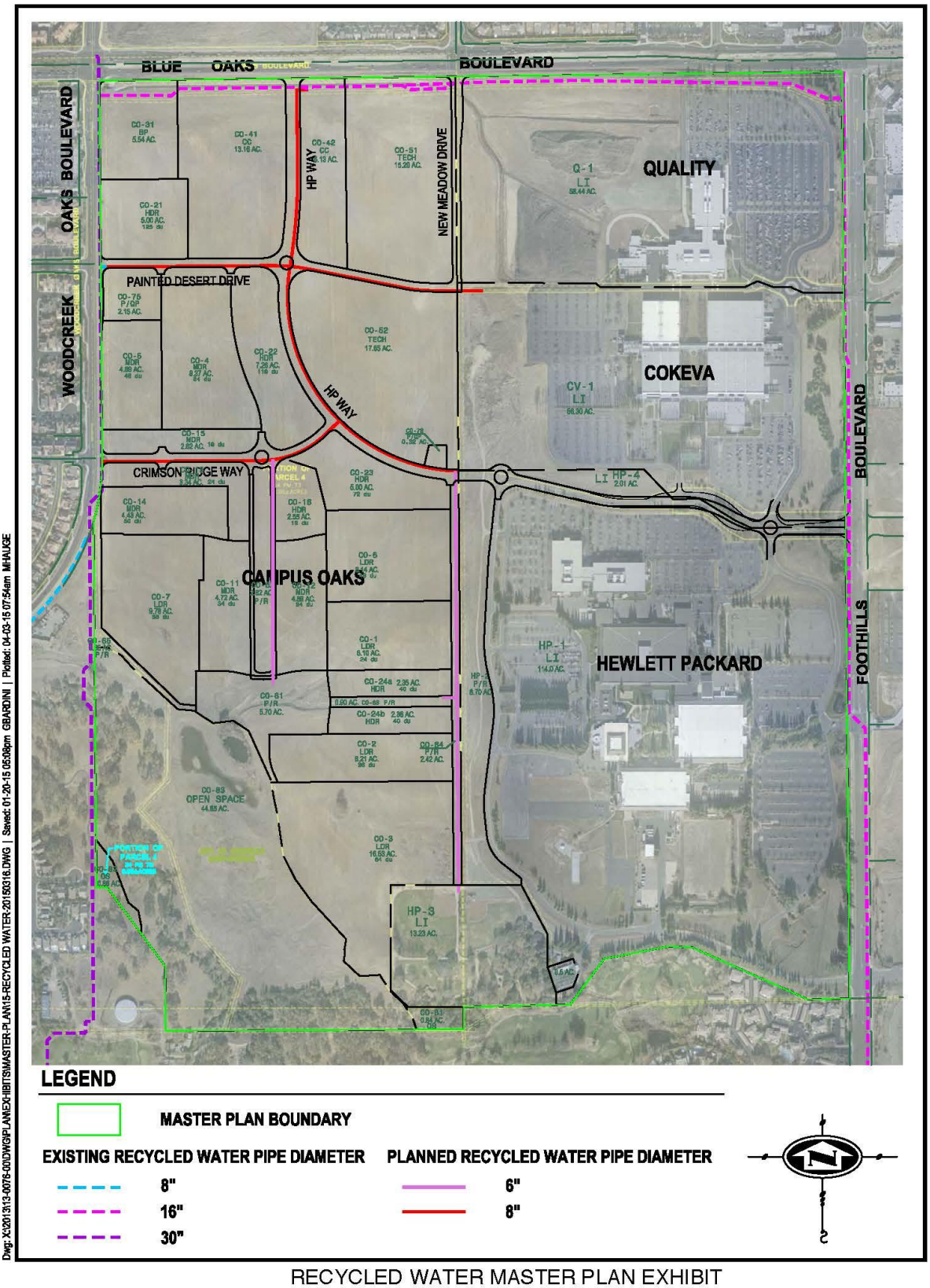

Figure 5 – Recycled Water Pipe Network Layout

Recycled Water Supply

The City of Roseville will provide a recycled water supply for the site. The Campus Oaks area is part of the full HP site, classified as an "Existing Near Future Customers". The City planned on delivering 1,219 gpm to the site during the annual irrigation period. The Campus Oaks Area is projected to use 225.02 gpm (MDD) or 600.80 gpm (PHD) applying the operational demand factor of 1.5 totals 901.20 gpm. The RWSE projected demand appears to be adequate to supply recycled water to the Campus Oaks Area.

Conservation

Conservation reductions are not included in the quantities estimated in this evaluation. Implementation of conservation measures identified in the "Water Conservation Master Plan" for the Project will reduce irrigation demands significantly. The available recycled water supply is more than adequate to support the irrigation demands throughout the project.

Recycled Water Storage

The volume of storage needed to support the project is based on the MDD + 2% System Losses, then an overall 20% operating buffer.

Campus Oaks Area ADD is 0.130 mgd
Campus Oaks Area MDD is 0.324 mgd
System Losses is 0.006 mgd
Storage is (0.330mg) + 20% (0.330 mg) = 0.397 mg

As noted earlier in the Available Storage Capacity section, Section 6.2.7 of the RWSE identifies the HP Campus and Rezone as "Existing Near Future Customers" with an estimated demand during the irrigation period of 1,219 gpm. To serve the "Existing Near Future Customers requires the addition of a recycled water pumps at the DCWWTP and a pump at the North Zone Pump Station, and specifically states that a volume increase to the storage tank at the North Zone site is not required.[2]

It further states that the urban growth areas will be required to have recycled water storage facilities with the capacity to store one peak day (in July) demand volume.

The Recycled Water Systems evaluation is being updated which will identify the need for new infrastructure (like the pumps identified above). The Campus Oaks Area will be required to add additional pumping capacity and ancillary equipment necessary to meet increased peak demands.

[2] South Placer Regional Wastewater and Recycled Systems Evaluation, Dec 2009, page 6-28.

Recycled Water Local Distribution System

Morton and Pitalo (M&P) modeled the local recycled water distribution system for the Campus Oaks Area. The analysis titled "Domestic Water and Recycled Water Analysis", which summarizes the results is included as Appendix A.

Bently Inc. developed the modeling software used by M&P under the trademark WaterCAD, Version 8. The model uses a combination of energy and mass balance iterations including the application of Bernoulli's equation with the Hazen-Williams method for determining headloss, Direction flow distribution is determined by applying the Hardy-Cross method.

Comparison of the ADD to that of the current land use plan: Morton & Pitalo's analysis used the demand estimate of 157.38 AFY (97.57 gpm) compared to the current demand estimate of 145.19 AFY (90.01 gpm).

Comparison of the MDD to that of the current land use plan: Morton & Pitalo's analysis used the demand estimate of 248.81 gpm compared to the current demand estimate of 225.02 gpm.

Comparison of the PHD to that of the current land use plan: Morton & Pitalo's analysis used the demand estimate of 671.79 gpm compared to the current demand estimate of 600.80 gpm.

Comparison of the PHD Flexibility to that of the current land use plan: Morton & Pitalo's analysis used the demand estimate of 1,007.68 gpm compared to the current demand estimate of 901.20 gpm.

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Conclusion

The recycled water system presented in this Plan can adequately supply recycled water to the Campus Oaks Area while meeting the City's recycled water design criteria.

Major backbone infrastructure needed to convey recycled water to the site is already in place. The local distribution system internal to the site is shown on **Figure 5.**

The model analysis is contained in Appendix A – Domestic Water and Recycled Water Analysis.

Table 7 summarizes the average day demands, max day demands, peak hour demands and the peak flexible operational demands for each land use parcel as well as the right of way segments.

Table 7
Recycled Water Parcel Summary
Average Daily Demand, Max Day Demand, Peak Hour Demand

High Density Residential										
Parcels		**Acres**	**Demand AFY**	**RW Landscape Acres**	**RW Demand AFY**		**ADD gpm**	**MDD gpm**	**PHD gpm**	**PHD+Flex gpm**
CO - 21		5.00	24.78	1.00	4.96		3.07	7.68	20.51	30.77
CO - 22		7.26	23.60	1.45	4.72		2.93	7.31	19.53	29.29
CO - 23		5.00	23.23	1.00	4.65		2.88	7.20	19.22	28.84
CO - 24		4.71	15.86	0.94	3.17		1.97	4.92	13.13	19.69
Sub-Total		21.97	87.47	4.39	17.49		10.85	27.11	72.39	108.59
Parks										
Parcels		**Acres**	**Demand AFY**	**RW Landscape Acres**	**RW Demand AFY**		**ADD gpm**	**MDD gpm**	**PHD gpm**	**PHD+Flex gpm**
CO - 61	P / R	5.70	19.08	5.13	17.17		10.64	26.61	71.05	106.58
CO - 62	P / R	2.62	8.77	2.36	7.89		4.89	12.23	32.66	48.99
CO - 63	P / R	0.9	3.01	0.81	2.71		1.68	4.20	11.22	16.83
CO - 64	P / R	2.42	8.10	2.18	7.29		4.52	11.30	30.17	45.25
CO - 65	P / R	1.35	4.52	1.22	4.07		2.52	6.30	16.83	25.24
CO - 81	OS	0.84	0.00	0.00	0.00		0.00	0.00	0.00	0.00
CO - 82	OS	0.86	0.00	0.00	0.00		0.00	0.00	0.00	0.00
CO - 83	OS	44.65	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Sub-Total		59.34	43.48	11.69	39.13		24.26	60.65	161.93	242.89
Public Quasi Public										
Parcels		**Acres**	**Demand AFY**	**RW Landscape Acres**	**RW Demand AFY**		**ADD gpm**	**MDD gpm**	**PHD gpm**	**PHD+Flex gpm**
CO - 75	P/QP	2.15	4.29	1.08	2.14		1.33	3.32	8.87	13.30
CO - 76	P/QP	0.32	0.64	0.16	0.32		0.20	0.49	1.32	1.98
Sub-Total		2.47	4.93	1.24	2.46		1.53	3.82	10.19	15.29
Commercial										
Parcels	**Land Use**	**Acres**	**Demand AFY**	**RW Landscape Acres**	**RW Demand AFY**		**ADD gpm**	**MDD gpm**	**PHD gpm**	**PHD+Flex gpm**
CO - 41	CC	13.16	38.30	3.95	11.49		7.12	17.81	47.55	71.32
CO - 42	CC	6.13	17.84	1.84	5.35		3.32	8.29	22.15	33.22
Sub-Total		19.29	56.14	5.79	16.84		10.44	26.10	69.69	104.54
Business Professional										
		Acres	**Demand AFY**	**RW Landscape Acres**	**RW Demand AFY**		**ADD gpm**	**MDD gpm**	**PHD gpm**	**PHD+Flex gpm**
CO - 31	BP	5.54	16.12	1.66	4.84		3.00	7.50	20.02	30.02
CO - 51	BP	15.2	44.24	4.56	13.27		8.23	20.57	54.92	82.37
CO - 52	BP	17.65	51.37	5.30	15.41		9.55	23.88	63.77	95.65
Sub-Total		38.39	111.73	11.52	33.52		20.78	51.95	138.70	208.05
Total:		223.82	578.40	34.62	109.45		67.85	169.62	452.90	679.35
Right of Way										
Road Segment	**Roadway**	**Acres**		**RW Landscape Acres**	**Soft Planting AFY**		**ADD gpm**	**MDD gpm**	**PHD gpm**	**PHD+Flex gpm**
RD 1	Blue Oaks Boulevard	1.36		0.59	0.64		0.40	0.99	2.66	3.98
RD 2	Blue Oaks Boulevard	0.98		0.43	0.46		0.29	0.72	1.91	2.87
RD 7	Painted Desert	3.47		1.18	1.29		0.80	1.99	5.32	7.99
RD 8	Painted Desert	3.43		1.17	1.27		0.79	1.97	5.26	7.89
RD 10	Crimson Ridge Drive	4.57		1.56	1.69		1.05	2.62	7.00	10.49
RD 3	Woodcreek Oaks Boulevard	0.65		0.24	0.26		0.16	0.40	1.08	1.61
RD 4	Woodcreek Oaks Boulevard	0.68		0.25	0.27		0.17	0.42	1.13	1.69
RD 5	Woodcreek Oaks Boulevard	0.29		0.11	0.12		0.07	0.18	0.49	0.73
RD 9	HP Way	3.14		0.65	0.71		0.44	1.10	2.94	4.41
RD 11	HP Way	3.72		1.10	1.20		0.74	1.86	4.96	7.44
RD 12	HP Way	2.92		0.87	0.94		0.58	1.46	3.90	5.85
RD 6	New Meadow Dr	1.84		0.63	0.68		0.42	1.05	2.82	4.23
Subtotal:		27.06		8.78	9.53		5.91	14.78	39.46	59.18
CO - Total Recycled Water Demand:				43.40	118.98		73.76	184.40	492.35	738.53
HP - 2 Park										
		Acres	**Demand AFY**	**RW Landscape Acres**	**RW Demand AFY**		**ADD gpm**	**MDD gpm**	**PHD gpm**	**PHD+Flex gpm**
HP-2	Park	8.7	29.12	7.83	26.21		16.25	40.62	108.45	162.68
CO & HP-2 - Total Recycled Water Demand:				51.23	145.19		90.01	225.02	600.80	901.20

References

City of Roseville Design Standards, January 2010

RMC “South Placer Regional Wastewater and Recycled Water Systems Evaluation, RMC, 2004 and 2009

Morton and Pitalo, Domestic Water and Recycled Water Analysis, April 2015

Recycled Water Distribution System Feasibility Study, April 2000.

Appendix A – Domestic Water and Recycled Water Analysis, April 2015

DOMESTIC WATER AND RECYCLED WATER ANALYSIS

Project: HP Campus Oaks Master Plan
1485 Blue Oaks Blvd
(Roseville, California)
Date: April 13, 2015

1. OBJECTIVE:

A water system flow analysis was conducted to verify the proposed domestic water and recycled water distribution systems for the HP Campus Oaks Master Plan. This is to ensure that the proposed development will have sufficient operating water pressure and that the distribution system operates within the parameters established within the City of Roseville Design Standards.

2. PROJECT DESCRIPTION:

The proposed amendment to the Master Plan, **the Hewlett-Packard|Campus Oaks (HPCO) Master Plan Amendment**, provides for a mixed use community on a 375.7 acre portion of the original Master Plan Area. The HPCO Amendment Area is organized into two physically and functionally integrated sub-areas: the **Hewlett-Packard Campus** accommodating existing and planned light industrial, recreation and related uses; and **Campus Oaks** planned for a new mix of tech/business park, office, commercial, residential, park and recreation, open space and public uses. The system analysis is for the Campus Oaks area based on the proposed uses.

3. WATER DISTRIBUTION SYSTEM MODELING SOFTWARE:

The computer modeling methodologies applied herein incorporate a combination of energy and mass balance iterations including the application of Bernoulli's equation with the Hazen-Williams method for determination of frictional head loss. Directional flow distribution is determined by applying the Hardy-Cross method. Computer software is implemented in modeling the water distribution system and the resulting hydraulic conditions are tabulated. The software utilized in this study was developed by Bentley Inc. under trademark WaterCAD, Version 8.0. The project's water systems were modeled using the layout shown in the master plan exhibits (Appendix-A).

WaterCAD software provides a method for design engineers to construct water distribution models by assembling various virtual hydraulic modeling elements including pipes, reservoirs, tanks, pumps, and valves. The engineer in accordance with the system design, operational criteria, and boundary conditions individually assigns values such as hydraulic grade line, minor losses, ground elevations, friction coefficients, etc. to each of the hydraulic elements in the computer model. These assembled elements create a virtual hydraulic model that may be used to simulate existing or design conditions of a particular water distribution system. Flow demands may be entered in

the model at nodes distributed about the system to simulate effective service conditions that stress the system such as Average-Day (ADD), Max-Day (MDD), and Max-Day (MDD).

The WaterCAD software provides a module for testing fire flow and zone pressures at each node in the model. The fire flow data is sampled at each node. WaterCAD tests each zone by applying the available fire flow at node locations. Nodes are tested to verify that the available fire flow is greater than the total needed fire flow and the calculated residual pressures are above the designated minimum zone pressure. All nodes satisfying the fire flow constraints are labeled as 'true' in the Fire Flow Report, while nodes that fail the fire flow constraints are labeled as 'false'.

4. PARAMETERS / ASSUMPTIONS:

- A fire flow demand of 2,000 gpm was assumed for the HPCO.
- The domestic water average day demand to maximum day demand peaking factor is 2.0 (City of Roseville Section 8-7).
- The recycled water average day demand to maximum day demand peaking factor is 2.55.
- The recycled water maximum day demand to peak hour demand peaking factor is 2.7.
- The recycled water peak hour demand to system flexibility demand peaking factor is 1.5.
- A Hazen-Williams roughness factor (C) of 130 was used in all new and existing water and recycled water pipes (City of Roseville Section 8-12.A.2).
- Domestic average day water system demands were obtained from the "Water System Master Plan for the Hewlett-Packard/Campus Oaks Master Plan" prepared by Municipal Consulting Group, January 2015.
- Recycled water system demands were obtained from Municipal Consulting Group, April 2015.

5. EXISTING SYSTEM FLOW INFORMATION:

The residual max day plus fire flow pressure was calculated by the City of Roseville-Environmental Utilities Department. The results of the Department's computer model analysis are attached in Appendix-B.

- Junction Node F03-105
  - Elevation 140 feet
  - Max Day Pressure 78 psi
  - Residual @ 4,000 GPM 70 psi

6. MODELING APPROACH:

Domestic Water: The source on Foothills Blvd was simulated based on the City's computer model analysis results for Node F03-105. From the model's results, the available head for 4,000 GPM was 70 psi. A starting hydraulic grade of 301.7 feet (140 feet + 70 psi x 2.31) was assigned at Node J-6 as a reservoir.

The max day plus fire flow demand was distributed to all nodes in the fire flow report, as shown on the WaterCAD Water Distribution System Map (Appendix-C).

Recycled Water: The recycled water system was assumed to have 60 psi (as measured from Node J-12. A starting hydraulic grade of 245.6 feet (107 feet + 60 psi x 2.31) was assigned for a reservoir placed at Node J-12. See Appendix-C for recycled water max day demands.

7. SUMMARY OF RESULTS:

The modeling results are shown in Appendix-D in tabular format.

The model results indicate that the proposed domestic water infrastructure meets the minimum design criteria of 20 psi residual system pressure for the required max day plus fire flow demand.

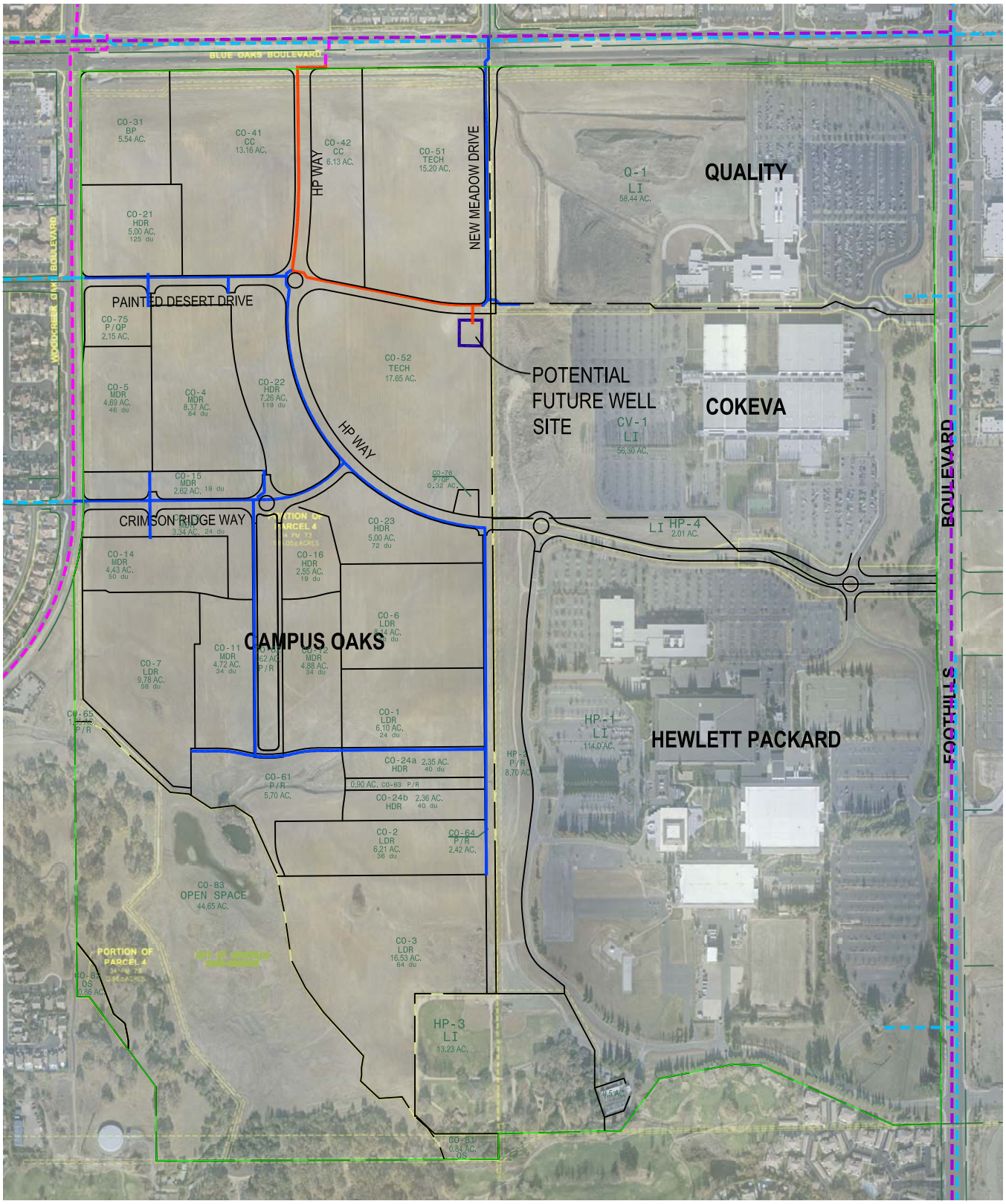
The model results indicate that the proposed recycled onsite water infrastructure meets or exceeds 45.4 psi during the peak hour demand with a 1.5 peaking factor for system flexibility.

8. LIST OF APPENDICES:

Appendix-A:	Water and Recycled Water Master Plan Exhibits
Appendix-B:	City of Roseville-Department of Environmental Utilities Computer Model Analysis Results
Appendix-C:	WaterCAD Water Distribution System Map
Appendix-D:	WaterCAD Modeling Results - Summary Tables

APPENDIX-A

Water and Recycled Water Master Plan Exhibits



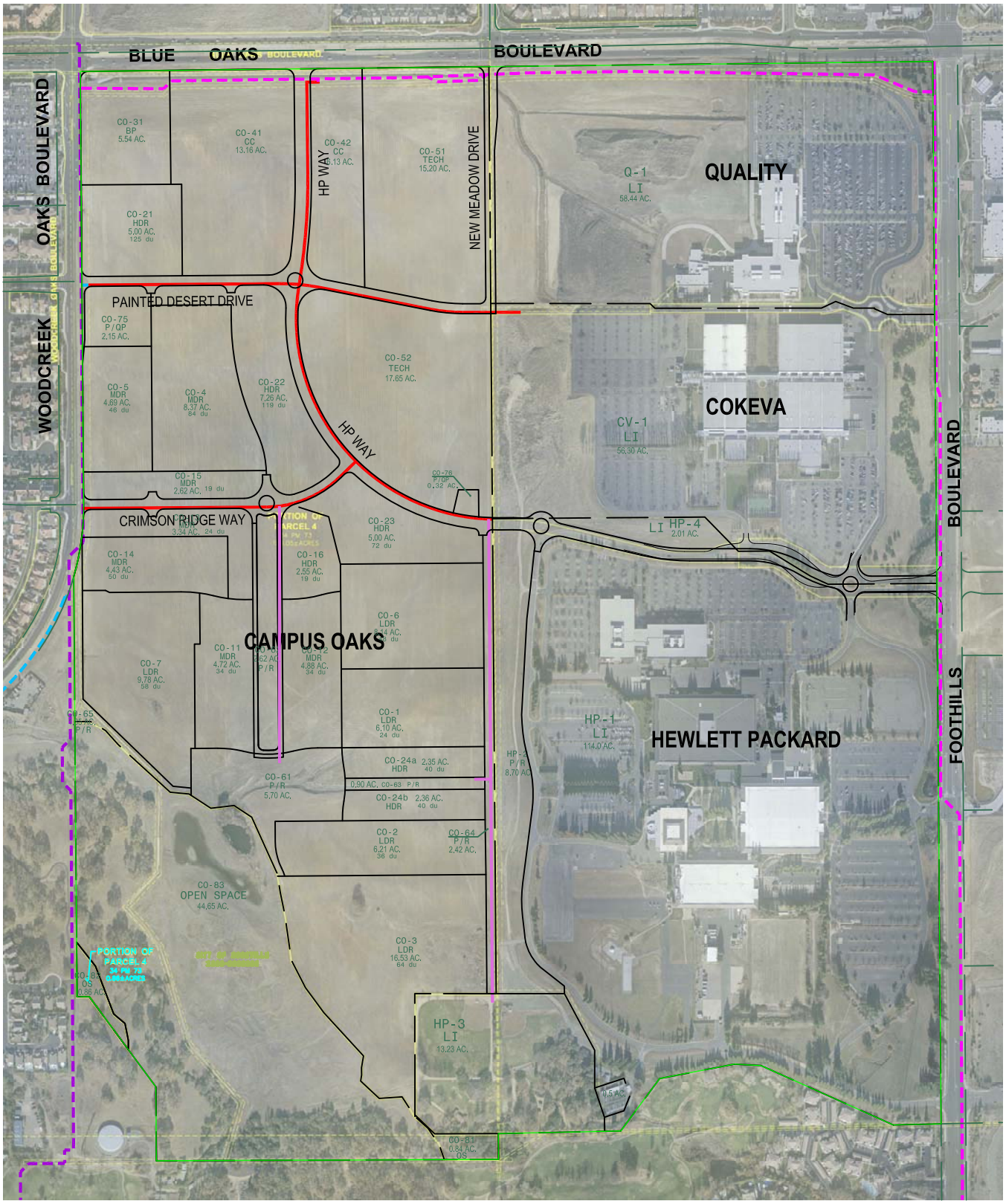
LEGEND

MASTER PLAN BOUNDARY

EXISTING WATER PIPE DIAMETER	PLANNED WATER PIPE DIAMETER
12"	12"
16"	16"
24"	

DOMESTIC WATER MASTER PLAN EXHIBIT

Dwg: X:\2013\13-0076-00\DWG\PLAN\EXHIBITS\MASTER-PLAN\14-WATER-20150316.DWG | Saved: 01-20-15 05:06pm GBARDINI | Plotted: 04-03-15 07:55am MHAUGE



LEGEND

MASTER PLAN BOUNDARY

EXISTING RECYCLED WATER PIPE DIAMETER	PLANNED RECYCLED WATER PIPE DIAMETER
8"	6"
16"	8"
30"	

RECYCLED WATER MASTER PLAN EXHIBIT

Dwg: X:\2013\13-0076-00\DWG\PLAN\EXHIBITS\MASTER-PLAN\15-RECYCLED WATER-20150316.DWG | Saved: 01-20-15 05:08pm GBARDINI | Plotted: 04-03-15 07:54am MHAUGE

APPENDIX-B

City of Roseville-Department of Environmental Utilities Computer Model Analysis Results

January 15, 2013

Name FedEx Distribution Center
Project: 8501 Foothill Blvd
Subject: Fire Flow Request – 4,000 gpm fire flow

Dear Sir / Madam:

This letter is in response to your request of January 2, 2013, regarding available pressures under fire flow conditions. The City has analyzed your requested fire flow of **4,000** gallons per minute using computer network analysis modeling. Our results are noted as follows:

COMPUTER MODEL ANALYSIS

Using a computer analysis model based upon estimated factors present at city build-out, the Environmental Utilities Department - Engineering Division has determined the following pressures will be available on the **24 &16-inch water main running parallel** on Foothill Blvd and Industrial Blvd. Please note the fire flow residual pressure is based upon a maximum day demand scenario with a **4,000-GPM** fire flow demand from the junction node listed below.

Junction Node	***Approx. Elevation (Ft)***	*Average Day (PSI)*	***Maximum Day (PSI)***	*Peak Hour (PSI)*	***Fire Flow Residual (PSI)***
F03-105	**140**		**78**		**70**
F03-045	**135**		**83**		**75**

PLEASE NOTE

As the design professional, you are urged to utilize conservative design criteria when determining private fire service system requirements. The above information is based on the existing public distribution system and known development at this time. All flow test results noted in this report represent available conditions at the time that the test was conducted. Available flow conditions may be lower during peak water demand periods, and at ultimate city build-out of all specific plan areas currently under development. Pursuant to State of California requirements, a minimum static pressure of 35-PSI is required to be maintained within the public water distribution system at all times within the city.

The Fire Department recommends that you utilize the model assumptions found above for maximum day pressure **XX-PSI**, fire flow residual **XX-PSI** and fire flow conditions **4,000-GPM** for all hydraulic calculations for the private fire service water system installed at the project site.

Please contact me within the Fire Prevention Division at (916) 774-58XX, if I can assist you further regarding this matter.

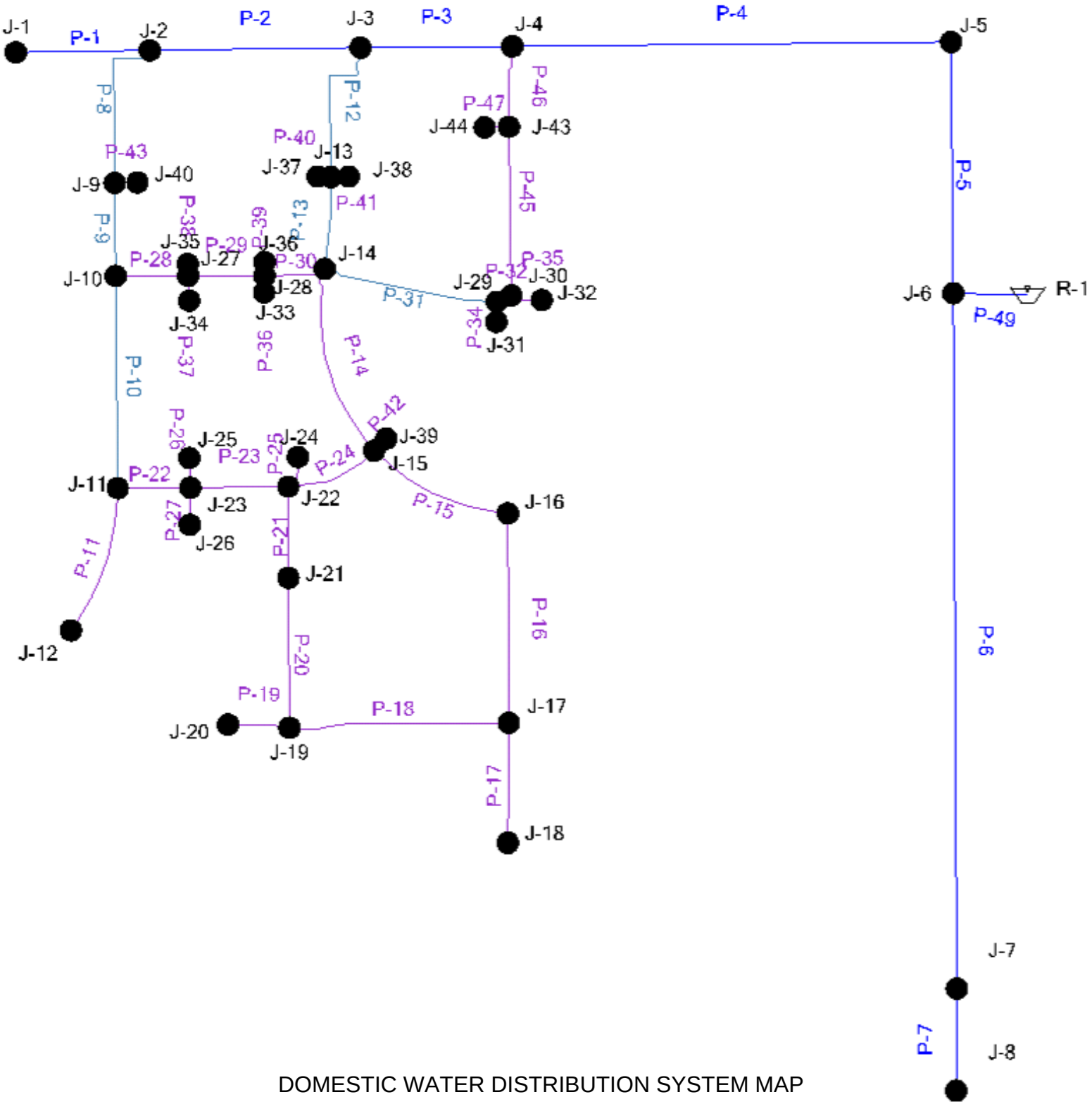
Respectfully,

NAME
TITLE

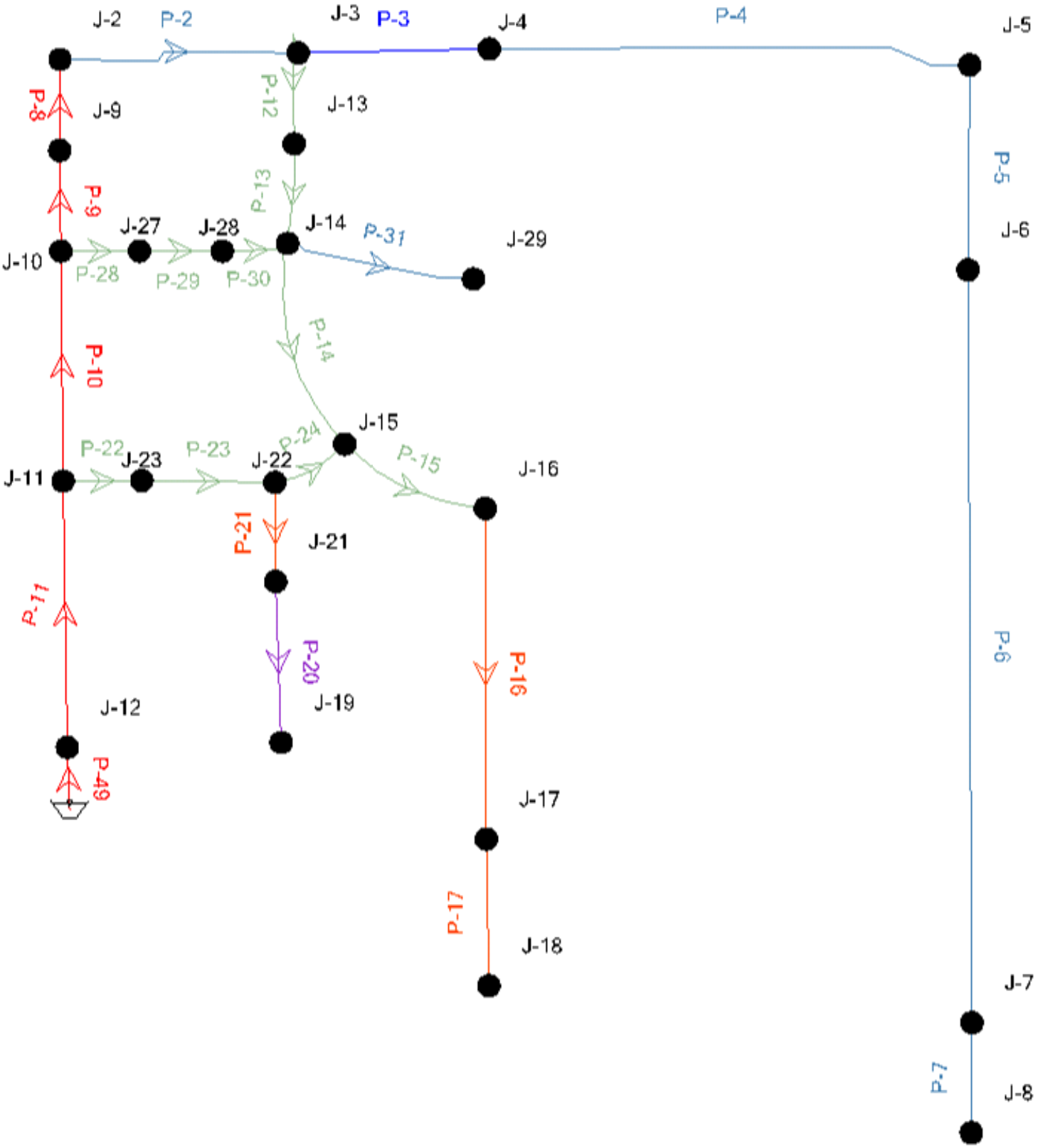
cc:

APPENDIX-C

WaterCAD Water Distribution System Map



DOMESTIC WATER DISTRIBUTION SYSTEM MAP



RECYCLED WATER DISTRIBUTION SYSTEM MAP

APPENDIX-D

WaterCAD Modeling Results – Summary Tables

Label	Scaled Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P-1	686	21: J-1	22: J-2	24	Concrete (steel forms)	130	0	0	0
P-2	1,080	22: J-2	24: J-3	24	Concrete (steel forms)	130	-145.44	0.1	0
P-3	777	24: J-3	26: J-4	24	Concrete (steel forms)	130	-296.29	0.21	0
P-4	2,247	26: J-4	28: J-5	24	Concrete (steel forms)	130	-376.7	0.27	0
P-5	1,288	28: J-5	30: J-6	24	Concrete (steel forms)	130	-376.7	0.27	0
P-6	3,558	30: J-6	32: J-7	24	Concrete (steel forms)	130	233.2	0.17	0
P-7	521	32: J-7	34: J-8	24	Concrete (steel forms)	130	0	0	0
P-8	864	22: J-2	36: J-9	16	PVC	130	145.44	0.23	0
P-9	476	36: J-9	38: J-10	16	PVC	130	127.74	0.2	0
P-10	1,087	38: J-10	40: J-11	16	PVC	130	136.08	0.22	0
P-11	780	40: J-11	42: J-12	12	PVC	130	0	0	0
P-12	809	24: J-3	44: J-13	16	PVC	130	150.85	0.24	0
P-13	473	44: J-13	46: J-14	16	PVC	130	124.75	0.2	0
P-14	1,020	46: J-14	48: J-15	12	PVC	130	133.72	0.38	0
P-15	773	48: J-15	50: J-16	12	PVC	130	86.44	0.25	0
P-16	1,076	50: J-16	52: J-17	12	PVC	130	55.24	0.16	0
P-17	612	52: J-17	54: J-18	12	PVC	130	45.7	0.13	0
P-18	1,127	52: J-17	56: J-19	12	PVC	130	-26.26	0.07	0
P-19	316	56: J-19	58: J-20	12	PVC	130	23.8	0.07	0
P-20	771	56: J-19	60: J-21	12	PVC	130	-74.76	0.21	0
P-21	467	60: J-21	62: J-22	12	PVC	130	-92.26	0.26	0
P-22	372	40: J-11	64: J-23	12	PVC	130	136.08	0.39	0
P-23	502	64: J-23	62: J-22	12	PVC	130	103.48	0.29	0
P-24	492	62: J-22	48: J-15	12	PVC	130	-4.48	0.01	0
P-25	174	62: J-22	68: J-24	12	PVC	130	9.7	0.03	0
P-26	152	64: J-23	70: J-25	12	PVC	130	16.4	0.05	0
P-27	190	64: J-23	72: J-26	12	PVC	130	14.8	0.04	0
P-28	371	38: J-10	74: J-27	12	PVC	130	-8.34	0.02	0
P-29	391	74: J-27	76: J-28	12	PVC	130	-23.44	0.07	0
P-30	318	76: J-28	46: J-14	12	PVC	130	-37.64	0.11	0
P-31	906	46: J-14	79: J-29	16	PVC	130	-53.01	0.08	0

Label	Scaled Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P-32	93	79: J-29	81: J-30	12	PVC	130	-66.71	0.19	0
P-34	103	79: J-29	84: J-31	12	PVC	130	0	0	0
P-35	170	81: J-30	86: J-32	12	PVC	130	0	0	0
P-36	84	76: J-28	88: J-33	12	PVC	130	8.3	0.02	0
P-37	128	74: J-27	90: J-34	12	PVC	130	7.4	0.02	0
P-38	60	74: J-27	92: J-35	12	PVC	130	7.7	0.02	0
P-39	71	76: J-28	94: J-36	12	PVC	130	5.9	0.02	0
P-40	69	44: J-13	96: J-37	12	PVC	130	17.8	0.05	0
P-41	91	44: J-13	98: J-38	12	PVC	130	8.3	0.02	0
P-42	88	48: J-15	100: J-39	12	PVC	130	31.8	0.09	0
P-43	116	36: J-9	102: J-40	12	PVC	130	17.7	0.05	0
P-45	864	81: J-30	107: J-43	12	PVC	130	-66.71	0.19	0
P-46	419	107: J-43	26: J-4	12	PVC	130	-80.41	0.23	0
P-47	125	107: J-43	110: J-44	12	PVC	130	13.7	0.04	0
P-49	382	116: R-1	30: J-6	24	Concrete (steel forms)	130	816.9	0.58	0

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	114	0	301.6	81.2
J-2	114	0	301.6	81.2
J-3	116	0	301.6	80.3
J-4	121	0	301.6	78.1
J-5	122	0	301.7	77.7
J-6	134	207	301.7	72.5
J-7	138	233.2	301.7	70.8
J-8	136	0	301.7	71.7
J-9	114	0	301.6	81.2
J-10	118	0	301.6	79.4
J-11	115	0	301.6	80.7
J-12	107	0	301.6	84.2
J-13	120	0	301.6	78.6
J-14	127	6.4	301.6	75.5
J-15	131	11	301.5	73.8
J-16	136	31.2	301.5	71.6
J-17	122	35.8	301.5	77.7
J-18	124	45.7	301.5	76.8
J-19	115	24.7	301.5	80.7
J-20	116	23.8	301.5	80.3
J-21	122	17.5	301.5	77.7
J-22	128	6	301.5	75.1
J-23	119	1.4	301.6	79
J-24	128	9.7	301.5	75.1
J-25	119	16.4	301.6	79
J-26	119	14.8	301.6	79
J-27	120	0	301.6	78.6
J-28	124	0	301.6	76.8
J-29	125	13.7	301.6	76.4
J-30	125	0	301.6	76.4
J-31	125	0	301.6	76.4
J-32	125	0	301.6	76.4
J-33	124	8.3	301.6	76.8
J-34	120	7.4	301.6	78.6
J-35	120	7.7	301.6	78.6
J-36	124	5.9	301.6	76.8
J-37	120	17.8	301.6	78.6
J-38	120	8.3	301.6	78.6
J-39	131	31.8	301.5	73.8
J-40	114	17.7	301.6	81.2
J-43	122	0	301.6	77.7
J-44	122	13.7	301.6	77.7

Label	Scaled Length	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams	Flow	Velocity	Headloss
P-1	686	21: J-1	22: J-2	24	Concrete (steel forms)	130	0	0	0
P-2	1,080	22: J-2	24: J-3	24	Concrete (steel forms)	130	-290.9	0.21	0
P-3	777	24: J-3	26: J-4	24	Concrete (steel forms)	130	-592.65	0.42	0
P-4	2,247	26: J-4	28: J-5	24	Concrete (steel forms)	130	-753.5	0.53	0
P-5	1,288	28: J-5	30: J-6	24	Concrete (steel forms)	130	-753.5	0.53	0
P-6	3,558	30: J-6	32: J-7	24	Concrete (steel forms)	130	466.3	0.33	0
P-7	521	32: J-7	34: J-8	24	Concrete (steel forms)	130	0	0	0
P-8	864	22: J-2	36: J-9	16	PVC	130	290.9	0.46	0
P-9	476	36: J-9	38: J-10	16	PVC	130	255.6	0.41	0
P-10	1,087	38: J-10	40: J-11	16	PVC	130	272.32	0.43	0
P-11	780	40: J-11	42: J-12	12	PVC	130	0	0	0
P-12	809	24: J-3	44: J-13	16	PVC	130	301.75	0.48	0
P-13	473	44: J-13	46: J-14	16	PVC	130	249.55	0.4	0
P-14	1,020	46: J-14	48: J-15	12	PVC	130	267.58	0.76	0
P-15	773	48: J-15	50: J-16	12	PVC	130	172.84	0.49	0
P-16	1,076	50: J-16	52: J-17	12	PVC	130	110.44	0.31	0
P-17	612	52: J-17	54: J-18	12	PVC	130	91.4	0.26	0
P-18	1,127	52: J-17	56: J-19	12	PVC	130	-52.46	0.15	0
P-19	316	56: J-19	58: J-20	12	PVC	130	47.6	0.14	0
P-20	771	56: J-19	60: J-21	12	PVC	130	-149.46	0.42	0
P-21	467	60: J-21	62: J-22	12	PVC	130	-184.46	0.52	0
P-22	372	40: J-11	64: J-23	12	PVC	130	272.32	0.77	0
P-23	502	64: J-23	62: J-22	12	PVC	130	207.02	0.59	0
P-24	492	62: J-22	48: J-15	12	PVC	130	-9.04	0.03	0
P-25	174	62: J-22	68: J-24	12	PVC	130	19.5	0.06	0
P-26	152	64: J-23	70: J-25	12	PVC	130	32.9	0.09	0
P-27	190	64: J-23	72: J-26	12	PVC	130	29.6	0.08	0
P-28	371	38: J-10	74: J-27	12	PVC	130	-16.72	0.05	0
P-29	391	74: J-27	76: J-28	12	PVC	130	-46.82	0.13	0
P-30	318	76: J-28	46: J-14	12	PVC	130	-75.32	0.21	0
P-31	906	46: J-14	79: J-29	16	PVC	130	-106.05	0.17	0
P-32	93	79: J-29	81: J-30	12	PVC	130	-133.45	0.38	0
P-34	103	79: J-29	84: J-31	12	PVC	130	0	0	0

Label	Scaled Length	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams	Flow	Velocity	Headloss
P-35	170	81: J-30	86: J-32	12	PVC	130	0	0	0
P-36	84	76: J-28	88: J-33	12	PVC	130	16.6	0.05	0
P-37	128	74: J-27	90: J-34	12	PVC	130	14.7	0.04	0
P-38	60	74: J-27	92: J-35	12	PVC	130	15.4	0.04	0
P-39	71	76: J-28	94: J-36	12	PVC	130	11.9	0.03	0
P-40	69	44: J-13	96: J-37	12	PVC	130	35.6	0.1	0
P-41	91	44: J-13	98: J-38	12	PVC	130	16.6	0.05	0
P-42	88	48: J-15	100: J-39	12	PVC	130	63.7	0.18	0
P-43	116	36: J-9	102: J-40	12	PVC	130	35.3	0.1	0
P-45	864	81: J-30	107: J-43	12	PVC	130	-133.45	0.38	0
P-46	419	107: J-43	26: J-4	12	PVC	130	-160.85	0.46	0
P-47	125	107: J-43	110: J-44	12	PVC	130	27.4	0.08	0
P-49	382	116: R-1	30: J-6	24	Concrete (steel forms)	130	1,633.80	1.16	0

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	114	0	301.4	81.1
J-2	114	0	301.4	81.1
J-3	116	0	301.4	80.2
J-4	121	0	301.4	78.1
J-5	122	0	301.6	77.7
J-6	134	414	301.6	72.5
J-7	138	466.3	301.5	70.8
J-8	136	0	301.5	71.6
J-9	114	0	301.3	81.1
J-10	118	0	301.3	79.3
J-11	115	0	301.3	80.6
J-12	107	0	301.3	84
J-13	120	0	301.4	78.5
J-14	127	12.7	301.3	75.4
J-15	131	22	301.1	73.6
J-16	136	62.4	301	71.4
J-17	122	71.5	301	77.4
J-18	124	91.4	301	76.6
J-19	115	49.4	301	80.5
J-20	116	47.6	301	80
J-21	122	35	301.1	77.5
J-22	128	12.1	301.1	74.9
J-23	119	2.8	301.2	78.8
J-24	128	19.5	301.1	74.9
J-25	119	32.9	301.2	78.8
J-26	119	29.6	301.2	78.8
J-27	120	0	301.3	78.5
J-28	124	0	301.3	76.7
J-29	125	27.4	301.3	76.3
J-30	125	0	301.3	76.3
J-31	125	0	301.3	76.3
J-32	125	0	301.3	76.3
J-33	124	16.6	301.3	76.7
J-34	120	14.7	301.3	78.5
J-35	120	15.4	301.3	78.5
J-36	124	11.9	301.3	76.7
J-37	120	35.6	301.4	78.5
J-38	120	16.6	301.4	78.5
J-39	131	63.7	301.1	73.6
J-40	114	35.3	301.3	81.1
J-43	122	0	301.4	77.6
J-44	122	27.4	301.4	77.6

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Pressure (Calculated System Lower Limit) (psi)	Junction w/Minimum Pressure (System)	Is Fire Flow Run Balanced?
J-1	TRUE	2,000.00	2,000.00	3,500.00	20	78.2	68.9	50: J-16	TRUE
J-2	TRUE	2,000.00	2,000.00	3,500.00	20	78.4	68.9	50: J-16	TRUE
J-3	TRUE	2,000.00	2,000.00	3,500.00	20	77.9	69.1	50: J-16	TRUE
J-4	TRUE	2,000.00	2,000.00	3,500.00	20	76.1	69.4	50: J-16	TRUE
J-5	TRUE	2,000.00	2,000.00	3,500.00	20	76.9	70.6	50: J-16	TRUE
J-6	TRUE	2,000.00	2,414.00	3,914.00	20	72.4	70.6	32: J-7	TRUE
J-7	TRUE	2,000.00	2,466.30	3,966.30	20	69	69.8	34: J-8	TRUE
J-8	TRUE	2,000.00	2,000.00	3,500.00	20	69.6	69	32: J-7	TRUE
J-9	TRUE	2,000.00	2,000.00	3,500.00	20	77.4	68.1	50: J-16	TRUE
J-10	TRUE	2,000.00	2,000.00	3,500.00	20	75.3	67.8	50: J-16	TRUE
J-11	TRUE	2,000.00	2,000.00	3,500.00	20	75	66.7	50: J-16	TRUE
J-12	TRUE	2,000.00	2,000.00	3,500.00	20	69.7	66.7	50: J-16	TRUE
J-13	TRUE	2,000.00	2,000.00	3,500.00	20	75.2	68.4	50: J-16	TRUE
J-14	TRUE	2,000.00	2,012.70	3,512.70	20	72	68.1	50: J-16	TRUE
J-15	TRUE	2,000.00	2,022.00	3,522.00	20	65.8	63.7	50: J-16	TRUE
J-16	TRUE	2,000.00	2,062.40	3,562.40	20	59.1	65.5	54: J-18	TRUE
J-17	TRUE	2,000.00	2,071.50	3,571.50	20	62.8	60.9	50: J-16	TRUE
J-18	TRUE	2,000.00	2,091.40	3,591.40	20	54.7	60.9	50: J-16	TRUE
J-19	TRUE	2,000.00	2,049.40	3,549.40	20	66.8	62.2	50: J-16	TRUE
J-20	TRUE	2,000.00	2,047.60	3,547.60	20	62.7	62.2	50: J-16	TRUE
J-21	TRUE	2,000.00	2,035.00	3,535.00	20	66.5	63.2	50: J-16	TRUE
J-22	TRUE	2,000.00	2,012.10	3,512.10	20	67	64.1	50: J-16	TRUE
J-23	TRUE	2,000.00	2,002.80	3,502.80	20	71.8	65.5	50: J-16	TRUE
J-24	TRUE	2,000.00	2,019.50	3,519.50	20	65	64.1	50: J-16	TRUE
J-25	TRUE	2,000.00	2,032.90	3,532.90	20	70.1	65.5	50: J-16	TRUE
J-26	TRUE	2,000.00	2,029.60	3,529.60	20	69.7	65.5	50: J-16	TRUE
J-27	TRUE	2,000.00	2,000.00	3,500.00	20	73.6	68	50: J-16	TRUE
J-28	TRUE	2,000.00	2,000.00	3,500.00	20	72.1	68.2	50: J-16	TRUE
J-29	TRUE	2,000.00	2,027.40	3,527.40	20	72	68.4	50: J-16	TRUE
J-30	TRUE	2,000.00	2,000.00	3,500.00	20	71.8	68.5	50: J-16	TRUE

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Pressure (Calculated System Lower Limit) (psi)	Junction w/Minimum Pressure (System)	Is Fire Flow Run Balanced?
J-31	TRUE	2,000.00	2,000.00	3,500.00	20	70.9	68.4	50: J-16	TRUE
J-32	TRUE	2,000.00	2,000.00	3,500.00	20	69.9	68.5	50: J-16	TRUE
J-33	TRUE	2,000.00	2,016.60	3,516.60	20	71.1	68.2	50: J-16	TRUE
J-34	TRUE	2,000.00	2,014.70	3,514.70	20	72.1	68	50: J-16	TRUE
J-35	TRUE	2,000.00	2,015.40	3,515.40	20	72.9	68	50: J-16	TRUE
J-36	TRUE	2,000.00	2,011.90	3,511.90	20	71.3	68.2	50: J-16	TRUE
J-37	TRUE	2,000.00	2,035.60	3,535.60	20	74.4	68.4	50: J-16	TRUE
J-38	TRUE	2,000.00	2,016.60	3,516.60	20	74.2	68.4	50: J-16	TRUE
J-39	TRUE	2,000.00	2,063.70	3,563.70	20	64.8	63.7	50: J-16	TRUE
J-40	TRUE	2,000.00	2,035.30	3,535.30	20	76	68.1	50: J-16	TRUE
J-43	TRUE	2,000.00	2,000.00	3,500.00	20	73.4	69	50: J-16	TRUE
J-44	TRUE	2,000.00	2,027.40	3,527.40	20	72	69	50: J-16	TRUE

Flexiblity

Id	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
22	J-2	114	41.41	245.5	56.9
24	J-3	116	73.16	245.4	56
26	J-4	121	0	245.4	53.8
28	J-5	122	0	245.4	53.4
30	J-6	134	0	245.4	48.2
32	J-7	138	0	245.4	46.5
34	J-8	136	0	245.4	47.4
36	J-9	114	0	245.5	56.9
38	J-10	118	49.69	245.5	55.2
40	J-11	115	0	245.6	56.5
42	J-12	107	0	245.6	60
44	J-13	120	0	244.6	53.9
46	J-14	127	128.38	244	50.6
48	J-15	131	70.4	242.8	48.4
50	J-16	136	140.8	241	45.4
52	J-17	122	186.35	235.9	49.3
54	J-18	124	0	235.9	48.4
56	J-19	115	168.41	239.7	53.9
60	J-21	122	0	241.8	51.8
62	J-22	128	0	243	49.8
64	J-23	119	0	244.6	54.4
74	J-27	120	0	245	54.1
76	J-28	124	0	244.4	52.1
79	J-29	125	149.08	243.5	51.3

Flexiblity

Id	Label	Scaled Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
25	P-2	1,151	22: J-2	24: J-3	16	Concrete (steel forms)	130	319.77	0.51	0
27	P-3	907	24: J-3	26: J-4	24	Concrete (steel forms)	130	0	0	0
29	P-4	2,288	26: J-4	28: J-5	16	Concrete (steel forms)	130	0	0	0
31	P-5	969	28: J-5	30: J-6	16	Concrete (steel forms)	130	0	0	0
33	P-6	3,558	30: J-6	32: J-7	16	Concrete (steel forms)	130	0	0	0
35	P-7	521	32: J-7	34: J-8	16	Concrete (steel forms)	130	0	0	0
37	P-8	430	22: J-2	36: J-9	30	PVC	130	-361.18	0.16	0
39	P-9	476	36: J-9	38: J-10	30	PVC	130	-361.18	0.16	0
41	P-10	1,087	38: J-10	40: J-11	30	PVC	130	-665.73	0.3	0
43	P-11	1,259	40: J-11	42: J-12	30	PVC	130	-1,007.68	0.46	0
45	P-12	609	24: J-3	44: J-13	8	PVC	130	246.61	1.57	0.001
47	P-13	473	44: J-13	46: J-14	8	PVC	130	246.61	1.57	0.001
49	P-14	1,045	46: J-14	48: J-15	8	PVC	130	224	1.43	0.001
51	P-15	748	48: J-15	50: J-16	8	PVC	130	327.15	2.09	0.002
53	P-16	1,564	50: J-16	52: J-17	6	PVC	130	186.35	2.11	0.003
55	P-17	693	52: J-17	54: J-18	6	PVC	130	0	0	0
61	P-20	761	56: J-19	60: J-21	6	PVC	130	-168.41	1.91	0.003
63	P-21	469	60: J-21	62: J-22	6	PVC	130	-168.41	1.91	0.003
65	P-22	372	40: J-11	64: J-23	8	PVC	130	341.96	2.18	0.003
66	P-23	629	64: J-23	62: J-22	8	PVC	130	341.96	2.18	0.003
67	P-24	384	62: J-22	48: J-15	8	PVC	130	173.55	1.11	0.001
75	P-28	371	38: J-10	74: J-27	8	PVC	130	254.86	1.63	0.001
77	P-29	391	74: J-27	76: J-28	8	PVC	130	254.86	1.63	0.001
78	P-30	318	76: J-28	46: J-14	8	PVC	130	254.86	1.63	0.001
80	P-31	906	46: J-14	79: J-29	8	PVC	130	149.08	0.95	0.001
121	P-49	296	116: R-1	42: J-12	30	Concrete (steel forms)	130	1,007.68	0.46	0

Max. Day

Id	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
22	J-2	114	10.23	245.6	56.9
24	J-3	116	18.06	245.6	56.1
26	J-4	121	0	245.6	53.9
28	J-5	122	0	245.6	53.5
30	J-6	134	0	245.6	48.3
32	J-7	138	0	245.6	46.5
34	J-8	136	0	245.6	47.4
36	J-9	114	0	245.6	56.9
38	J-10	118	12.27	245.6	55.2
40	J-11	115	0	245.6	56.5
42	J-12	107	0	245.6	60
44	J-13	120	0	245.5	54.3
46	J-14	127	31.7	245.5	51.3
48	J-15	131	17.38	245.4	49.5
50	J-16	136	34.77	245.3	47.3
52	J-17	122	46.01	244.9	53.2
54	J-18	124	0	244.9	52.3
56	J-19	115	41.58	245.2	56.3
60	J-21	122	0	245.3	53.4
62	J-22	128	0	245.4	50.8
64	J-23	119	0	245.5	54.7
74	J-27	120	0	245.6	54.3
76	J-28	124	0	245.5	52.6
79	J-29	125	36.81	245.4	52.1

Max. Day

Id	Label	Scaled Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
25	P-2	1,151	22: J-2	24: J-3	16	Concrete (steel forms)	130	78.95	0.13	0
27	P-3	907	24: J-3	26: J-4	24	Concrete (steel forms)	130	0	0	0
29	P-4	2,288	26: J-4	28: J-5	16	Concrete (steel forms)	130	0	0	0
31	P-5	969	28: J-5	30: J-6	16	Concrete (steel forms)	130	0	0	0
33	P-6	3,558	30: J-6	32: J-7	16	Concrete (steel forms)	130	0	0	0
35	P-7	521	32: J-7	34: J-8	16	Concrete (steel forms)	130	0	0	0
37	P-8	430	22: J-2	36: J-9	30	PVC	130	-89.18	0.04	0
39	P-9	476	36: J-9	38: J-10	30	PVC	130	-89.18	0.04	0
41	P-10	1,087	38: J-10	40: J-11	30	PVC	130	-164.38	0.07	0
43	P-11	1,259	40: J-11	42: J-12	30	PVC	130	-248.81	0.11	0
45	P-12	609	24: J-3	44: J-13	8	PVC	130	60.89	0.39	0
47	P-13	473	44: J-13	46: J-14	8	PVC	130	60.89	0.39	0
49	P-14	1,045	46: J-14	48: J-15	8	PVC	130	55.31	0.35	0
51	P-15	748	48: J-15	50: J-16	8	PVC	130	80.78	0.52	0
53	P-16	1,564	50: J-16	52: J-17	6	PVC	130	46.01	0.52	0
55	P-17	693	52: J-17	54: J-18	6	PVC	130	0	0	0
61	P-20	761	56: J-19	60: J-21	6	PVC	130	-41.58	0.47	0
63	P-21	469	60: J-21	62: J-22	6	PVC	130	-41.58	0.47	0
65	P-22	372	40: J-11	64: J-23	8	PVC	130	84.43	0.54	0
66	P-23	629	64: J-23	62: J-22	8	PVC	130	84.43	0.54	0
67	P-24	384	62: J-22	48: J-15	8	PVC	130	42.85	0.27	0
75	P-28	371	38: J-10	74: J-27	8	PVC	130	62.93	0.4	0
77	P-29	391	74: J-27	76: J-28	8	PVC	130	62.93	0.4	0
78	P-30	318	76: J-28	46: J-14	8	PVC	130	62.93	0.4	0
80	P-31	906	46: J-14	79: J-29	8	PVC	130	36.81	0.23	0
121	P-49	296	116: R-1	42: J-12	30	Concrete (steel forms)	130	248.81	0.11	0

Peak Hour

Id	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
22	J-2	114	27.61	245.6	56.9
24	J-3	116	48.77	245.5	56
26	J-4	121	0	245.5	53.9
28	J-5	122	0	245.5	53.4
30	J-6	134	0	245.5	48.3
32	J-7	138	0	245.5	46.5
34	J-8	136	0	245.5	47.4
36	J-9	114	0	245.6	56.9
38	J-10	118	33.13	245.6	55.2
40	J-11	115	0	245.6	56.5
42	J-12	107	0	245.6	60
44	J-13	120	0	245.1	54.1
46	J-14	127	85.58	244.8	51
48	J-15	131	46.93	244.3	49
50	J-16	136	93.87	243.5	46.5
52	J-17	122	124.24	241	51.5
54	J-18	124	0	241	50.6
56	J-19	115	112.27	242.8	55.3
60	J-21	122	0	243.8	52.7
62	J-22	128	0	244.4	50.4
64	J-23	119	0	245.1	54.6
74	J-27	120	0	245.3	54.2
76	J-28	124	0	245	52.4
79	J-29	125	99.39	244.6	51.7

Peak Hour

Id	Label	Scaled Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
25	P-2	1,151	22: J-2	24: J-3	16	Concrete (steel forms)	130	213.17	0.34	0
27	P-3	907	24: J-3	26: J-4	24	Concrete (steel forms)	130	0	0	0
29	P-4	2,288	26: J-4	28: J-5	16	Concrete (steel forms)	130	0	0	0
31	P-5	969	28: J-5	30: J-6	16	Concrete (steel forms)	130	0	0	0
33	P-6	3,558	30: J-6	32: J-7	16	Concrete (steel forms)	130	0	0	0
35	P-7	521	32: J-7	34: J-8	16	Concrete (steel forms)	130	0	0	0
37	P-8	430	22: J-2	36: J-9	30	PVC	130	-240.78	0.11	0
39	P-9	476	36: J-9	38: J-10	30	PVC	130	-240.78	0.11	0
41	P-10	1,087	38: J-10	40: J-11	30	PVC	130	-443.82	0.2	0
43	P-11	1,259	40: J-11	42: J-12	30	PVC	130	-671.79	0.3	0
45	P-12	609	24: J-3	44: J-13	8	PVC	130	164.4	1.05	0.001
47	P-13	473	44: J-13	46: J-14	8	PVC	130	164.4	1.05	0.001
49	P-14	1,045	46: J-14	48: J-15	8	PVC	130	149.34	0.95	0.001
51	P-15	748	48: J-15	50: J-16	8	PVC	130	218.11	1.39	0.001
53	P-16	1,564	50: J-16	52: J-17	6	PVC	130	124.24	1.41	0.002
55	P-17	693	52: J-17	54: J-18	6	PVC	130	0	0	0
61	P-20	761	56: J-19	60: J-21	6	PVC	130	-112.27	1.27	0.001
63	P-21	469	60: J-21	62: J-22	6	PVC	130	-112.27	1.27	0.001
65	P-22	372	40: J-11	64: J-23	8	PVC	130	227.97	1.46	0.001
66	P-23	629	64: J-23	62: J-22	8	PVC	130	227.97	1.46	0.001
67	P-24	384	62: J-22	48: J-15	8	PVC	130	115.7	0.74	0
75	P-28	371	38: J-10	74: J-27	8	PVC	130	169.9	1.08	0.001
77	P-29	391	74: J-27	76: J-28	8	PVC	130	169.9	1.08	0.001
78	P-30	318	76: J-28	46: J-14	8	PVC	130	169.9	1.08	0.001
80	P-31	906	46: J-14	79: J-29	8	PVC	130	99.39	0.63	0
121	P-49	296	116: R-1	42: J-12	30	Concrete (steel forms)	130	671.79	0.3	0

Average Day

Id	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
22	J-2	114	4.01	245.6	56.9
24	J-3	116	7.08	245.6	56.1
26	J-4	121	0	245.6	53.9
28	J-5	122	0	245.6	53.5
30	J-6	134	0	245.6	48.3
32	J-7	138	0	245.6	46.6
34	J-8	136	0	245.6	47.4
36	J-9	114	0	245.6	56.9
38	J-10	118	4.81	245.6	55.2
40	J-11	115	0	245.6	56.5
42	J-12	107	0	245.6	60
44	J-13	120	0	245.6	54.3
46	J-14	127	12.43	245.6	51.3
48	J-15	131	6.82	245.6	49.6
50	J-16	136	13.63	245.5	47.4
52	J-17	122	18.04	245.5	53.4
54	J-18	124	0	245.5	52.6
56	J-19	115	16.31	245.5	56.5
60	J-21	122	0	245.5	53.5
62	J-22	128	0	245.6	50.9
64	J-23	119	0	245.6	54.8
74	J-27	120	0	245.6	54.3
76	J-28	124	0	245.6	52.6
79	J-29	125	14.44	245.6	52.2

Average Day

Id	Label	Scaled Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
25	P-2	1,151	22: J-2	24: J-3	16	Concrete (steel forms)	130	30.96	0.05	0
27	P-3	907	24: J-3	26: J-4	24	Concrete (steel forms)	130	0	0	0
29	P-4	2,288	26: J-4	28: J-5	16	Concrete (steel forms)	130	0	0	0
31	P-5	969	28: J-5	30: J-6	16	Concrete (steel forms)	130	0	0	0
33	P-6	3,558	30: J-6	32: J-7	16	Concrete (steel forms)	130	0	0	0
35	P-7	521	32: J-7	34: J-8	16	Concrete (steel forms)	130	0	0	0
37	P-8	430	22: J-2	36: J-9	30	PVC	130	-34.97	0.02	0
39	P-9	476	36: J-9	38: J-10	30	PVC	130	-34.97	0.02	0
41	P-10	1,087	38: J-10	40: J-11	30	PVC	130	-64.46	0.03	0
43	P-11	1,259	40: J-11	42: J-12	30	PVC	130	-97.57	0.04	0
45	P-12	609	24: J-3	44: J-13	8	PVC	130	23.88	0.15	0
47	P-13	473	44: J-13	46: J-14	8	PVC	130	23.88	0.15	0
49	P-14	1,045	46: J-14	48: J-15	8	PVC	130	21.69	0.14	0
51	P-15	748	48: J-15	50: J-16	8	PVC	130	31.67	0.2	0
53	P-16	1,564	50: J-16	52: J-17	6	PVC	130	18.04	0.2	0
55	P-17	693	52: J-17	54: J-18	6	PVC	130	0	0	0
61	P-20	761	56: J-19	60: J-21	6	PVC	130	-16.31	0.19	0
63	P-21	469	60: J-21	62: J-22	6	PVC	130	-16.31	0.19	0
65	P-22	372	40: J-11	64: J-23	8	PVC	130	33.11	0.21	0
66	P-23	629	64: J-23	62: J-22	8	PVC	130	33.11	0.21	0
67	P-24	384	62: J-22	48: J-15	8	PVC	130	16.8	0.11	0
75	P-28	371	38: J-10	74: J-27	8	PVC	130	24.68	0.16	0
77	P-29	391	74: J-27	76: J-28	8	PVC	130	24.68	0.16	0
78	P-30	318	76: J-28	46: J-14	8	PVC	130	24.68	0.16	0
80	P-31	906	46: J-14	79: J-29	8	PVC	130	14.44	0.09	0
121	P-49	296	116: R-1	42: J-12	30	Concrete (steel forms)	130	97.57	0.04	0

TECHNICAL STUDY
SOLID WASTE

Date: June 15, 2015

By: Derrick Whitehead, PE
Municipal Consulting Group

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INTRODUCTION

STUDY PURPOSE AND OBJECTIVES

The purpose of this Technical Study (Study) is to define the amount of solid waste the project will generate; identify any impacts on the Western Regional Sanitary Landfill; and any impacts on the Materials Recovery Facility. Typical solid waste generation rates will be applied to the proposed land use for the Hewlett-Packard/Campus Oaks (HPCO) Master Plan Amendment to insure the City of Roseville's (City) contractual obligations are met and the goals of the Western Placer Waste Management Authority are upheld.

The primary objective of this Plan is to estimate the amount of solid waste generation for the overall project area and then focus on how the waste generate from the project impacts of regional solid waste processing facilities.

PROJECT DESCRIPTION

Hewlett-Packard and BBC Roseville Oaks, LLC have proposed an amendment to the Hewlett-Packard Roseville Campus Master Plan that would reconfigure the land uses and infrastructure on a portion of the Master Plan Area.

The Hewlett-Packard Roseville Campus Master Plan establishes development regulations for 492.2 acres at the southwest corner of Blue Oaks and Foothills Boulevards within the City of Roseville's North Industrial Planning Area (see Figure 1). Originally adopted in June 1996, the Master Plan envisioned a manufacturing and office campus to accommodate Hewlett-Packard's existing and planned operations. Hewlett-Packard has subsequently adjusted its facilities needs for the Roseville campus, divesting its ownership in all but a portion of the Master Plan Area.

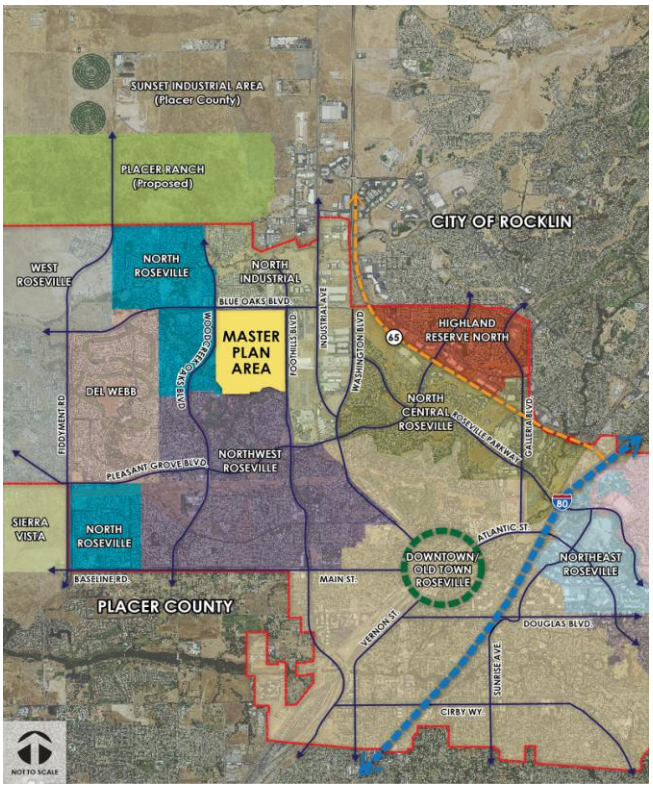

Figure 1- Project Location

Figure 2- HPCO Amendment Area

The proposed amendment to the Master Plan, the Hewlett-Packard / Campus Oaks (HPCO) Master Plan Amendment transitions from a light industrial uses to a mixed-use community on a 375.7-acre portion of the original Master Plan Area (See Figure 2). The HPCO Amendment Area is organized into two physically and functionally integrated sub-areas: the Hewlett-Packard Campus accommodating existing and planned light industrial, recreation and related uses; and Campus Oaks planned for a new mix of tech/business park, office, commercial, residential, park and recreation, open space and public uses. The HPCO Master Plan Amendment supersedes all prior Master Plan requirements for the HPCO Amendment Area.

PROJECT SETTING

The HPCO Amendment Area has been designated for development for over 35 years. Surrounded by established employment, commercial and residential uses, the eastern portion of the Amendment Area is partially developed by Hewlett-Packard, one of Roseville's largest employers. The western portion of the Amendment Area, Campus Oaks, is undeveloped consisting primarily of annual grasslands with gently rolling topography that has been highly disturbed over time through bi-annual disk-plowing. The southern portion of Campus Oaks contains a City owned open space/wetland preserve along the South Branch of Pleasant Grove Creek.

PROPOSED PROJECT

The HPCO Master Plan Amendment establishes updated land use and zoning regulations, mobility and infrastructure plans, public services provisions, design guidelines, and development approval processes for the 375.6-acre Amendment Area. The remainder of the larger Master Plan Area will continue to be regulated by the existing Hewlett-Packard Roseville Campus Master Plan.

The HPCO Master Plan Amendment proposes to the retain the existing Light Industrial land use designation on a majority of the Hewlett Packard Campus, refining the square footage allocated to the Campus based upon Hewlett-Packard's projected development program. In addition, a City park is proposed on the western edge of the Campus.

The existing Light Industrial land use designation on Campus Oaks is proposed to be changed to a mix of tech/business park (LI), office, commercial, residential, park and recreation, open space and public uses. The existing City owned wetland preserve will be retained, and will be augmented by additional open space parcels.

The HPCO Master Plan Amendment includes proposed revisions to the mobility and utility systems to accommodate the revised land uses. The mobility system will include a modified grid street pattern that is connected to, and helps to complete, the City's larger roadway network; an interconnected system of paths, sidewalks and bike lanes; and multiple transit stops. HP Way will be constructed as a public roadway through the project site. Other roadway connections will include the extensions of New Meadow Drive from the north, and Painted Desert and Crimson Ridge Drives from the west.

The construction of backbone utility infrastructure will be necessary to accommodate full build-out of the Amendment Area. Water, recycled water, wastewater, drainage, electric, natural gas, and telecommunications infrastructure exist within and/or adjacent to the Amendment Area. Since adoption of the 1996 Master Plan, substantial development and associated infrastructure improvements have been constructed in the vicinity of the Amendment Area. The HPCO Amendment accounts for these changed conditions to define an updated and efficient backbone utility infrastructure program.

Proposed land uses within the HPCO Master Plan Area are summarized on Table 1, and illustrated on Figure 3.

TABLE 1: HPCO Master Plan Amendment Area Land Use Summary

Land Use	Gross Acres	Building Square Feet (sf)					Dwelling Units (du)		
		Existing	Future	Total Capacity	FAR Range	Avg. FAR	Units	du/ac Range	Avg. du/ac
EMPLOYMENT AND COMMERCIAL USES									
Light Industrial (LI)	129.24 ac	593,820sf	606,180 sf	1,200,000 sf	20-50%	31%			
Tech/Business Park (T/BP-LI)	32.85 ac		300,000 sf	300,000 sf	20-40%	21%			
Business Professional (BP)	5.54 ac		60,000 sf	60,000 sf	20-40%	25%			
Community Commercial (CC)	19.29 ac		170,000 sf	170,000 sf	20-40%	20%			
Sub-Total	**186.92 ac**	**593,820sf**	**1,136,180 sf**	**1,730,000 sf**		**21%**			
RESIDENTIAL USES									
Low Density (LDR)	46.76 ac						242 du	0.5-6.9	5.2
Medium Density (MDR)	35.60 ac						310 du	7.0-12.9	8.7
High Density (HDR)	21.97 ac						396 du	13.0+	18.0
Sub-Total	**104.33 ac**						**948 du**		**9.1**
PARK, OPEN SPACE AND PUBLIC USES									
Park & Recreation (P/R)	19.44 ac								
Paseo (P/R)	2.25 ac								
Open Space (OS)	46.35 ac								
Public (P/QP)	2.97 ac								
Sub-Total	**71.01 ac**								
Backbone Roads	13.47 ac								
TOTAL	**375.73 ac**	**593,820sf**	**1,136,180 sf**	**1,730,000 sf**		**27%**	**948 du**		**9.1**

NOTE: Existing development consists of Buildings R3 (126,220 sf), R4 (131,190 sf), R5 (158,760 sf) and R6 (177,650 sf).

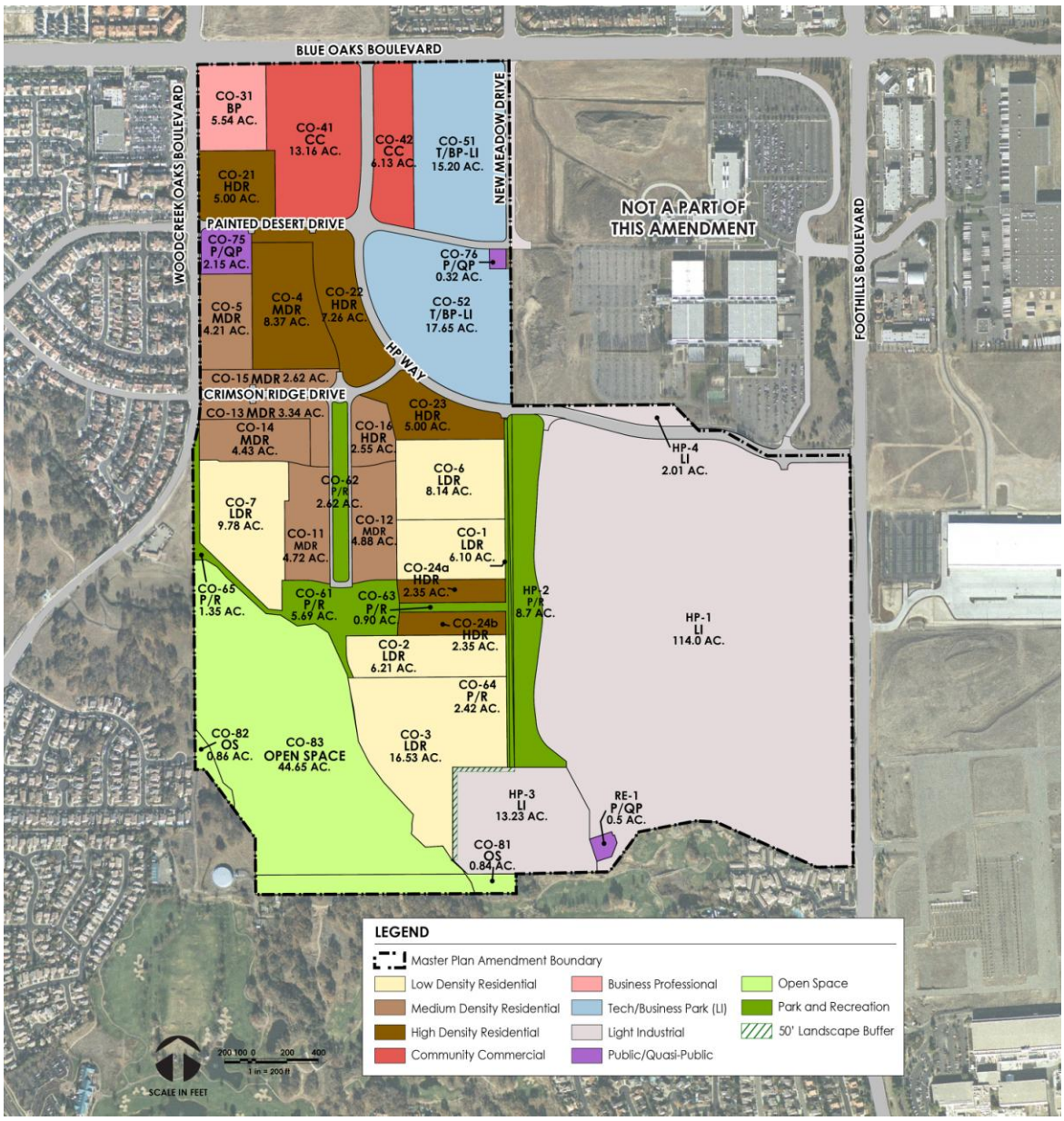

Figure 3 – HPCO Master Plan Amendment

Regional Solid Waste Facilities

Solid waste generated in the City of Roseville is collected and hauled by the City to facilities owned by the Western Placer Waste Management Authority (WPWMA) for processing and disposal. The WPWMA is a joint powers authority (JPA) comprised of the cities of Roseville, Rocklin, and Lincoln; and, Placer County. WPWMA owns and operates the Materials Recovery Facility (MRF) and the Western Regional Sanitary Landfill (WRSL).

The MRF and the WRSL are located on 320 acres at the southeast corner of Athens Avenue and Fiddyment Road in Placer County, and are approximately 2 miles north-northwest of the Master Plan site. Nortech Waste, LLC, a private firm, operates the MRF and Nortech Landfill, Inc., a private firm, operates the landfill under separate contracts with the WPWMA.

Joint Powers Authority

The City of Roseville helped form the JPA with three other agencies to accomplish long-term recycling goals for solid waste management. The JPA administers the County's Solid Waste Management Plan through a contract with Placer County who staffs the management team of the WPWMA.

A formal element of the JPA requires Flow Control Agreements with all the members of the JPA to dispose of their solid waste through the WPWMA facilities. As a result, all waste generated within the City is delivered to the MRF for sorting and disposal at the WRSL.

Flow Control Agreements

To comply with the City's Municipal Code Section 9.17.050, all construction and demolition debris generated within the City of Roseville must be delivered to WPWMA's facilities for recycling and/or disposal. A majority of the solid waste collection within the City is and managed by Roseville's Solid Waste Utility located at the Corporation Yard on Hilltop Circle. Roseville also has a seat on the WPWMA Board as one of the main members of the Joint Powers Authority. Permitted non-exclusive franchise haulers may handle temporary refuse collection and disposal for construction and demolition, but they are also required to recycle and/or dispose of all collected solid waste at WPWMA facilities.

Solid waste collected inside the City's service area is taken to the MRF for processing. The MRF opened in 1995 and receives, separates, processes, and markets recyclable materials removed from the solid waste – waste stream. The MRF has a mixed waste processing capacity of over 2,000 tons per day[1], a permitted processing capacity of 1,750 tons per day, and a permitted vehicle capacity of 1,014 vehicles per day. In addition to processing mixed solid waste, the MRF includes a green waste compost facility. The compost portion of the facility has an annual processing capacity of 75,000 cubic yards. Based on an average density of 0.6 tons per cubic yard, this equates to an annual processing capacity of approximately 60,000 tons.[3] Recyclables captured at the MRF include:

[1] http://www.wpwma.com/facilities.html

- **Wood/green waste** processed for compost & woodchips
- **Metal** - ferrous/metallic items
- **Plastic** - many grades
- **Glass** - all colors
- **Paper -** newspaper, junk mail, phonebooks, magazines, scrap paper, paperboard and cardboard.

Summary of 2012 Operations

In 2012, the MRF processed an average of 564 vehicles per day[2] and received an average of 1,063 tons of waste per weekday[3]. Of this amount, 857 tons consisted of mixed solid waste, 206 tons consisted of source separated green waste; the remainder consisted of wood waste and other source separate recyclables. During the same time period, the WPWMA received and processed a total of 58,250 tons of source source-separated green waste at its composting facility.

The WRSL is a Class II/III municipal solid waste (non-hazardous) landfill. The WRSL is permitted to accept 1,900 tons per day and 624 vehicles per day. In 2008, the WRSL received an average of 932 tons and 130 vehicles per weekday. The WRSL has a total capacity of 36,350,000 cubic yards. As of July 1, 2013, a total of 10,672,400 cubic yards have been disposed at the landfill, leaving a remaining capacity of 25,677,600 cubic yards. Under current projected development conditions, the landfill has a projected lifespan extending through 2058.[3]

City Solid Waste Generation

To estimate the amount of waste expected on an annual basis to be processed at the MRF and disposed of at the WRSL, the City uses waste generation, disposal, and diversion rates expressed as pounds per person per day, which includes C&D, greenwaste and waste from non-residential sources. The City has calculated solid waste generation, disposal, and MRF recycling rates based on actual 2012 data obtained from City of Roseville, data maintained by the WPWMA, and data maintained by the California Department of Resources Recycling and Recovery (CalRecycle). The generation rate includes construction and demolition debris (C&D) and green waste as well as other municipal solid waste. The generation rates based on 2012 data are considered appropriate for inclusion this analysis as they are estimated to represent a conservative level of disposal on an annual basis as described further in this section. For purposes of this analysis, it is assumed that all waste would be processed and disposed at WPWMA facilities as required by the City's Flow Control Agreement.

Table 1 summarizes the 2012 data and source of the data used in this analysis. The data is

[2] While a majority of the waste received at both the MRF and WRSL occur on weekdays, and the peak vehicle loading at the WRSL occurs on weekdays, vehicle loading at the MRF during the calendar year is consistent across both weekdays and weekends. Therefore, the average vehicle loading for the MRF includes both weekdays and weekends. Therefore, the average vehicle loading for the MRF includes both weekdays and weekends.

[3] Eric Oddo, Environmental Engineering Program Manager, 2014

categorized into the various waste streams or programs, such as landfill waste, direct recyclables, or MRF recyclables. As shown in **Table 1**, the City generated 145,790 tons of waste during 2012 (393 tons per day, rounded). This includes waste disposed at landfills, alternative daily cover (ADC), waste diverted through recycling purposes (direct and MRF recycling), and construction and demolition debris. Recycling is accomplished through either direct recycling opportunities or through the processing and recovery of recyclables at WPWMA facilities (including source-separated recycling of wood waste, green waste, and C&D; landfill recovery; and recyclables recovered from the MRF lines). The City offers various direct recycling opportunities including cardboard, newspaper, CRV, battery drop off locations, and e-waste pick up programs. These recyclable materials are not processed through the MRF.

As summarized in **Table 1**, the City disposed of 145,790 tons of solid waste between the MRF, recycling programs, and through landfill burial in 2012. The landfill used 12,275 tons of alternative daily cover (ADC) for operational purposes. Total waste diverted away from landfill disposal was 115,439 tons, including 8,330 tons of direct recycling, 53,429 tons of MRF recyclable diversions, and 53,680 tons of greenwaste/C&D/composting. In January 2012, the City's residential population was reported to be 122,060 persons. Based on the information in **Table 1**, the City calculated various waste generation, disposal, and diversion rates. These rates are summarized in **Table 2**.

TABLE 2

2012 SOLID WASTE GENERATION DETAIL (TONS)

Waste Description	Record Source	Landfill	Direct Recycling	MRF Recycling	GW Composting C&D
Cardboard	Roseville		2,701		
Newspaper	Roseville		560		
CRV	Roseville		42		
Residential Buy-Back	WPWMA		45		
MRF	WPWMA			18,137	
Landfill (a)	WPWMA	86,186			
Alternative Daily Cover (b)	WPWMA			12,275	
Greenwaste/Compost/C&D	WPWMA				20,804
Other Programs	WPWMA		5,040		
Waste Generation Total Tons = 145,790 (Rounded)		86,186	8,388	30,412	20,804

(a) According to WPWMA and Roseville staff, 145,790 tons was disposed at WRSL facilities in 2012.
(b) According to WPWMA, 12,275 tons was used as ADC at WRSL facilities.
(c) 20,804 tons greenwaste, composting, and C&D

TABLE 3
SOLID WASTE GENERATION, DISPOSAL AND DIVERSION RATES

CATEGORY	RATE
Per Capita Target (SB 1016)	8.9 lbs/person/day
Disposal Rate (Landfill only)	4.1 lbs/person/day
MRF Recycling Diversion Rates	2.4 lbs/person/day

Note: Based on 2012 data for solid waste and population.

Review of the above data indicates that the City accomplished 80.6 percent diversion from the landfill in 2012. The MRF accomplished 37.3 percent diversion rate of 2.4 lbs/person/day.

At buildout of the existing 2025 General Plan, the City estimates a total population of 174,120[4] people. Using the generation, disposal and diversion rates reported in **Table 3**, buildout would generate 204,325 tons of solid waste per year. Of this amount, it is estimated 39,721 tons per year would be disposed at the landfill, and 164,604 tons per year would be redirected from the landfill through processing at the MRF, direct recycling or through the greenwaste/C&D/composting programs.

Regulatory Requirements

Solid waste activities are regulated by federal, state and local regulation as summarized below.

Federal

Resource Conservation and Recovery Act, Subtitle D

Title 40 of the Code of Federal Regulations (CFR), Part 258 (Resource Conservation and Recovery Act [RCRA, Subtitle D]) contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design, groundwater monitoring, and closure of landfills. Federal requirements for disposal of bio-solids are set forth in Title 40 Part 503 of the CFR.

State

Integrated Waste Management Act

The California Integrated Waste Management Act, also known as Assembly Bill 939 (AB 939) (Public Resources Code Section 41780), enacted in 1989, contained regulations affecting solid waste disposal in California. AB 939 is designed to increase landfill life and conserve other resources through increased source reduction and recycling. AB 939 requires cities and counties to prepare Solid Waste Management Plans and adopt Source Reduction and Recycling Elements (SRRE) to implement AB 939's goals. These goals include diverting approximately 50 percent of solid waste from landfills and identifying programs to stimulate local recycling in manufacturing and the purchase of recycled products.

[4] Buildout population of existing City through Creekview 169,901 plus additional residents associated with the Fiddyment-SP3 Rezone 4,219 = 174,120.

The SRRE, which is part of the City of Roseville General Plan, contains goals and policies for solid waste disposal. The City has met AB 939's 50 percent reduction goal for 2000. The City's waste reduction for 2012 was 81 percent. To meet these goals, the SRRE specifies three methods: (1) source reduction, which is a net reduction in waste generation at the source; (2) recycling, which is a reuse of materials to produce new similar products or different products; and (3) composting, which is a process of biological decomposition of solid organic debris, such as leaves, grass clippings, and other organic material commonly found in the municipal waste stream to create useable material.

The Legislature amended the California Integrated Waste Management Act in 2007 through Senate Bill 1016 (SB 1016). Previously, the Act had had required Cal Recycle, at least once every two years, to review a jurisdiction's source reduction and recycling element and household hazardous waste element. Under SB 1016, which repealed that requirement, Cal Recycle instead was required to make a finding whether each jurisdiction was in compliance with AB 939's diversion requirements for calendar year 2006 and to determine compliance for the 2007 calendar year and later years based on the jurisdiction's change in its per capita disposal rate. Cal Recycle is also required to review a jurisdiction's compliance with those diversion requirements in accordance with a specified schedule, which would be conditioned upon the CWMB finding that the jurisdiction is in compliance with those requirements or has implemented its source reduction and recycling element and household hazardous waste element.

SB 1016 also requires Cal Recycle to issue an order of compliance if it finds that the jurisdiction has failed to make a good faith effort to implement its source reduction and recycling element or its household hazardous waste element pursuant to a specified procedure. Cal Recycle is required to comply with certain requirements in making this determination, including considering the extent to which the jurisdiction has maintained its per capita disposal rate.

SB 1016 repeals this review schedule on January 1, 2018, and, after that date, requires Cal Recycle to review each jurisdiction's source reduction and recycling element and household hazardous waste element at least once every 2 years.

Solid Waste Reuse and Recycling Access Act of 1991

Assembly Bill 1327 (AB 1327) (Solid Waste Reuse and Recycling Access Act) enacted in 1991 requires jurisdictions to adopt ordinances that require development projects to provide adequate storage areas for collection and removal of recyclable materials.

Department of Resources Recycling and Recovery (Cal Recycle)

Cal Recycle is the new home of California's recycling and waste reduction efforts. Officially known as the Department of Resources Recycling and Recovery, Cal Recycle is a new department within the California Natural Resources Agency and administers programs formerly managed by the State's Integrated Waste Management Board and Division of Recycling. Cal Recycle is the State agency charged with the primary responsibility for permitting of solid waste facilities. Cal Recycle operates through its designated Local Enforcement Agencies (LEAs), which typically are County Health Departments. Air pollution from solid waste facilities is regulated by local air pollution control districts or air quality management districts and water pollution is regulated by the State / Regional Water Quality Control Boards.

Universal Waste Rule- February 9, 2006

Universal wastes are hazardous wastes that are widely produced by households and many different types of businesses. Universal wastes include televisions, computers and other electronic devices as well as batteries, fluorescent lamps, mercury thermostats, and other mercury containing equipment, among others. The hazardous waste regulations (Cal. Code Regs, title 22, Section 66261.9) identify seven categories of hazardous wastes that can be managed as universal wastes. Any unwanted item that falls within one of these waste streams can be handled, transported and recycled following the simple requirements set forth in the universal waste regulations (UWR) (Cal. Code Regs, title. 22, div. 4.5, ch. 23).

AB 32- California Global Warming Solutions Act-Mandatory and AB 341 Commercial Recycling

The Mandatory Commercial Recycling measure, which is part of AB 32, is designed to achieve a reduction in greenhouse gas emissions of five million metric tons of carbon dioxide equivalents. It will increase waste diversion from landfills beyond the previous state-mandated rate of 50 percent to a goal of 58.

The commercial sector generates well over half of the solid waste in California, at 68 percent, according Statewide Waste Characterization data from 2008. Yet that sector is not directly subject to the requirements of another bill that attempted to divert waste from landfills – AB 939, the Integrated Waste Management Act of 1989.

In order to achieve the 58 percent commercial recycling goal, an additional two million to three million tons of materials will need to be recycled from the commercial sector by 2020, according to the Department of Resources Recycling and Recovery, better known as Cal Recycle.

Local

Western Placer Waste Management Authority

The Western Placer Waste Management Authority (WPWMA) is a regional agency comprised of Placer County and the Cities of Roseville, Rocklin and Lincoln. The WPWMA provides recycling and waste disposal opportunities to those communities, as well as to the City of Auburn and the Town of Loomis. The WPWMA oversees operations of the Materials Recovery Facility (MRF), the Western Regional Sanitary Landfill (WRSL), and the Permanent Household Hazardous Waste Collection Facility (PHHWCF). The MRF receives, separates, processes and markets recyclable materials removed from delivered solid waste.

The City of Roseville entered into a Flow Control Agreement with the WPWMA in 2005. This agreement states that any waste generated within the City must first be processed at the WPWMA's Material Recover Facility (MRF) for sorting and then sent to the Western Regional Sanitary Landfill (WRSL) for disposal. Temporary construction and demolition debris must go through the Materials Recovery Facility. Any materials that are collected through recycling programs that are established by the City, such as the collection of green waste, cardboard, newspaper, and other recyclables does not have to be delivered

to the MRF. The City of Roseville retains the rights to market any collected recyclables.

Placer County Solid Waste Local Enforcement Agency

Placer County Environmental Health Services has been designated by Cal Recycle to be the Local Enforcement Agency (LEA), which enforces state solid waste statutes and regulations throughout Placer County. The LEA's primary functions are permitting, inspection and enforcement at solid waste operations and facilities such as landfills/disposal sites (active and closed), including sites for disposal of construction/demolition debris and inert materials; transfer stations, including Materials Recovery Facilities; and composting facilities.

City of Roseville General Plan and Zoning Ordinance

As described previously, the City's Source Reduction and Recycling Element is part of the City of Roseville General Plan, and contains includes goals and policies for solid waste disposal. Section 9.17 of the Municipal Code includes
provision for refuse hauling and recycling.

Analysis

Solid Waste Analysis

This solid waste analysis considers waste processing demands on the MRF and disposal demands on the WRSL. Demands were estimated based on the total tonnage of waste projected to be generated by the City plus the project, and by evaluating the impacts from this demand on processing capabilities at the MRF and the lifespan of the WRSL. Because all waste collected and processed at WPWMA facilities is first tipped onto the MRF floor for processing, the MRF is conservatively evaluated based upon total waste generation. This analysis is considered conservative in that it does not reduce the amount of waste based upon direct recycling (i.e., privately-conducted and City recycling programs such as cardboard, newspaper, CRV, battery drop off locations, and e-waste pick up programs) that does not impact operations of the MRF. To estimate the amount of waste expected on an annual basis, the City uses the solid waste generation rates shown in **Table 3**, above.

Projected Hewlett-Packard/Campus Oaks Master Plan Tonnage Estimate

Build out of the HPCO Master Plan would result in solid waste generated by residences, retail and commercial establishments, offices, public facilities, light industrial facilities and recreational facilities. The tonnage estimate for the Master Plan site is broken into two sections: 1) Campus Oaks; and, 2) HP Campus. Campus Oaks waste generation is based on number of residents projected in the Master Plan area. The HP Campus waste generation is based on a weight per square foot of constructed facilities. **Table 4** summarizes the amount of solid waste, by ton per year, for the Master Plan site. **Table 4** is provided to estimate the tonnage for the entire site, although the City uses a population based approach for estimating tonnage disposed of at the WPWMA facility.

Table 4
Hewlett-Packard/Campus Oaks Master Plan
Buildout Waste Generation Estimate

Campus Oaks		HP Campus		
Residents	**Tons per year[1]**		**Square Feet[2]**	**Tons per year**
2,475	4,020	Cokeva	600,000	1,554.90
		Quality	900,000	2,332.35
		HP	1,157,820	3,000.49
	4,020			6,887.71
Total Tons for the Campus Oaks HP Master Plan Area:				10,907.73

[1] 8.9 lbs per day per resident – Table 2
[2] 0.0142 lbs per square foot per day for light industrial land use – Cal Recycle Web Site

Projected City Solid Waste Tonnage

Roseville tonnages delivered to the WPWMA in 2012 were used to develop estimating factors outline in **Table 3**.

Current City Tonnage

The City currently processes approximately 145,790 tons per year (400 tons per day) at the MRF. The total volume of solid waste disposed of at the landfill includes an estimated amount for landfill disposal, ADC at WRSL facilities, plus recycling (86,186 tons disposal landfill + 12,275 tons ADC + 47,329 tons recycling, composting, greenwaste and C&D). The existing facilities located on the Master Plan site generate approximately 3,192.26 tons per year.

Build Out City Tonnage

At build out of the 2025 General Plan, estimated solid waste generation is conservatively expected to be as high as 282,814 tons per year (775 tons per day) if no direct recycling efforts are assumed. Build out of the 2025 General Plan includes tonnage from the HPCO Master Plan. Build out population is estimated to be 174,120 people. Using the generation, disposal, and diversion rates reported in **Table 3**; build out population would generate 282,814 tons of solid waste per year (10,908 tons would be from HPCO); 165,220 tons per year would be disposed of at the landfill; and 1174,594 tons per year would be redirected from the landfill through processing at the MRF, direct recycling, and through the greenwaste/C&D/composting programs.

MRF Processing Capacity

As explained above, the MRF currently processes an average of 1,063 tons per day and is designed to receive over 2,000 tons per day. Peak tonnage received at the MRF could continue to increase as growth occurs in the service area since the MRF is currently permitted to receive 1,750 tons per day and is operating at approximately 48.3% of design capacity[5]. At build out of the City and the HPCO Master Plan, no additional tonnage over what is expected for the 2025 General Plan would be processed at the MRF. Because the HPCO Master Plan is included in the 2025 General Plan, build out of the HPCO Master Plan would not have an impact on the MRF's permitted capacity at build out. Thus, the MRF has adequate capacity to serve the HPCO Master Plan.

Western Placer Landfill Capacity

The WRSL has a remaining capacity of approximately 25,677,600 cubic yards[5]. According to WPWMA staff, 1,200 pounds (0.60 tons/yard) of solid waste take up approximately one cubic yard of landfill space. Thus, considering the remaining capacity estimates cited above yields a remaining landfill capacity of 15,406,560 tons (28,530 tons/month – 45 years equals 540 months).

Currently, the WRSL is projected to be able to accept waste until 2058[6]. However,

[5] Eric Oddo, Environmental Engineering Program Manager, 2014

[6] Eric Oddo, Environmental Engineering Program Manager, 2014

the final closure date could be affected by several factors, including regional growth rates, economic conditions, and the efficiency of waste recovery.

Over a 41-year[7] time frame the entire Master Plan project area will generate approximately 401,472 tons of solid waste. While these tonnages give an estimated of the amount of waste generated by HPCO, comparing the amount of waste generated by light industrial uses over the same site gives a better understanding of the potential impact of the project. Solid waste generation for a light industrial site equivalent in size would be 12,517 tons per year compared to the composite site of 10,908 tons per year, 1,609 tons per year less. The proposed modification in the land use on the remaining site generates less solid waste per year than the existing light industrial land use.

Landfill Expansion Opportunities

Approximately 465-acres west of the WRSL is available for expanding the landfill, although no plans for expansion have been initiated by the WPWMA Board. The WPWMA has also purchased the parcel east of the landfill. Both parcels provide opportunity for expanding the landfill to increase capacity; however, the City cannot guarantee landfill expansion beyond the current site.

Although WPWMA owns potential expansion property, the appropriate environmental analysis and permitting have not yet been acquired. As additional landfill capacity is needed, WPWMA staff will manage the development of the appropriate environmental evaluations and acquire the appropriate permits to utilize expansion property.

Historically, tipping fees are paid by those disposing of waste at the WRSL or MRF (e.g., local jurisdictions such as Roseville, Rocklin, Lincoln, and Placer County). Expansion of the MRF was paid for through tipping fees. Tipping fees would also be used to fund the studies and permits necessary to put the expansion property into service.

Need to Expand the Landfill

The solid waste generated by the proposed 2015 HPCO Master Plan would not generate the need to expand the WRSL because there is adequate capacity at the WRSL to handle build out of the 2025 General Plan, which includes build out of the Master Plan site. Future expansion is more generally attributable to all future growth anticipated in Western Placer County. Expansion of the WRSL would create environmental effects. Plans for expansion of landfill capacity beyond 2058 have not been developed. As such, specific impacts cannot be identified at this time. Because the identified potential expansion area is in close proximity to the existing landfill, it can be anticipated that the impacts of an expansion would be similar to those attributed to the existing landfill. There would be construction related impacts, such as air pollutant emissions, noise, and erosion. In addition, agricultural land and biological resources, including wetlands, could be lost. Once constructed, the landfill expansion could create additional odors, traffic, operational air emissions (including increased emissions of landfill gas and

[7] Tonnages based on the assumption that HPCO Master Plan would be built-out by 2017.

combustion flare emissions), litter, night lighting and other changes in visual character, and degradation of water quality. These impacts would be similar to those of the existing landfill. Expansion of the WRSL would require compliance with mitigation measures already required as part of the WRSL and MRF permitting process.

HEWLETT-PACKARD/CAMPUS OAKS MASTER PLAN

Construction and Debris Removal

Development of the HPCO Master Plan would involve removal of debris from the site and construction of new buildings and infrastructure. These activities would generate construction and demolition debris (C&D) requiring disposal. Construction and demolition activities can generate significant amounts of waste.

The solid waste generation rate identified in **Table 3** is inclusive of construction and demolition debris (C&D). The City generated 145,790 tons of solid waste during 2012 as shown in **Table 1**. This is equivalent to 393 tons of solid waste per day. In 2012, a total of 661 homes were constructed in Roseville totaling approximately 1,586,400 square feet. Also during 2012, approximately 197,444 square feet of non-residential uses were constructed. Together in 2012, residential and non-residential construction totaled 1,783,444 square feet. Using a C&D debris factor recommended by the United States Environmental Protection Agency of 4.4 pounds per square foot of construction, this level of development would generate 3,924 tons per year (10.75 tons/day) of C&D. C&D waste, therefore, would represent 2.74% of the total annual waste generation rate within the City. As described previously, the waste generation rate of 8.9 pounds per person per day includes C&D debris as does the 0.0142 lbs/ft^2/day for light industrial uses.

Adequacy of C&D Generation Rate

It is unclear if the amount of C&D debris included in the waste generation rate adequately represents future C&D generation as the City and HPCO Master Plan site develop. Therefore, an analysis of the City's future absorption rates for residential and non-residential construction was prepared to estimate potential future C&D debris generation on a yearly basis. This estimated yearly C&D generation rate is then compared to the estimated volume of C&D generated in 2008 to determine if the levels of C&D waste in the waste generation rate of 8.9 pounds per person per day adequately accounts or potential future C&D waste volumes.

The City's estimates based upon absorption studies that 23,734 dwelling units will be constructed between 2010 and 2039 (30 years) with a maximum of 2,087 homes (3,735,938 square feet) constructed in 2022, 2023 and 2024. The absorption information also estimates 24,714,377 square feet of non-residential construction will be built over this same time period with the maximum of 1,343,400 square feet constructed in 2038. However, during 2038 it is expected that residential construction will only result in 300,000 square feet of residential development as the City reaches residential build out. It is projected that the year 2024 would generate the maximum square footage of construction, including C&D debris (when considering both residential and non-residential absorption rates) through the year 2039. In 2024, residential C&D is estimated at 22.5 tons per day and non-residential is estimated at 4.7 tons per day, for a total C&D generation of 27.2 tons per day. This exceeds the estimates included in the annual

waste generation rates of 23.7 tons per day by 3.5 tons per day. The City's analysis indicates there are 5 years (2021 through 2025) when C&D generation may exceed the 27.2 tons per day assumed within the City's waste generation rates, with 2024 representing the highest of these 5 years.

As discussed above, solid waste estimates generated for build out of the HPCO Master Plan are inclusive of C&D waste and would not increase processing demands at the MRF or impact the life of the WRSL because the HPCO is an infill project included in the 2025 General Plan impact projections on the landfill. In fact, the monthly generation rate for the modified HPCO Master Plan area is 12.9% less.

The project does not impact the life of the WRSL. Consistent with the requirements of AB 939, 50% of the construction debris from the HPCO Master Plan must be diverted from the landfill. Developers must submit all diversion and disposal records to the City's Environmental Utilities Department to demonstrate that the 50% diversion requirement has been met. This would ensure that the impacts from construction are reduced.

Summary

Under current conditions, the WRSL has a projected useful life of 2058 and the waste generated from the HPCO Master Plan will not reduce the life of the landfill because the Master Plan is an infill project included in the current 2025 General Plan. As discussed earlier, the WPWMA has purchased property both east and west of the existing site to facilitate future expansions, though these potential expansions have not yet been environmentally evaluated or permitted.

The MRF is currently operating at 48.3% of design capacity and will increase to 57.0% of the design capacity at full build out. Implementation of the proposed 2015 HPCO Master Plan will reduce the impact of the City's build out estimate on the operation capacity the MRF and reduce the amount disposed of at the WRSL.

Impacts to both the WRSL and the MRF are negligible, and each facility can be expanded in the future to address future needs.

References

- Shelly Tilley – Solid Waste Superintendent, Roseville Solid Waste Department
    - Personal Discussion / Explanation of City Data received.
    - Email – City Data
- Eric Oddo - Environmental Engineering Program Manager, Placer County, WPWMA Staff
    - Personal Discussion / Explanation of City Data received.
    - Email – Landfill Data
- Creekview Draft Environmental Impact Report, 2008, “C & D Analysis”
- CalRecycle Web Site – Waste Disposal Rates for Business Types

WATER CONSERVATION PLAN

Date: June 15, 2015

By: Derrick Whitehead, PE
Municipal Consulting Group

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INTRODUCTION

STUDY PURPOSE AND OBJECTIVES

The purpose of this Water Conservation Plan (Plan) is to define how much surface and recycled water can be conserved as the various parcels implementthe conservation best management practices requirements. The Plan will calculate water demands within the Hewlett-Packard/Campus Oaks (HPCO) Master Plan Amendment Area and apply conservation requirements that reduce the draw on the City of Roseville's (City) water sources.

The primary objective of this Plan is to estimate the anticipated level of conservation for the overall project focusing on the three City requested Best Management Practices (BMP's). These BMP's reduce the amount of potable water and recycled water needed to support the Project.

The Plan will follow these steps:

- Develop a baseline water use inventory for the project;
- Identify and describe methods for reducing water consumption;
- Estimate the reduction in water demand using the recommended measures.

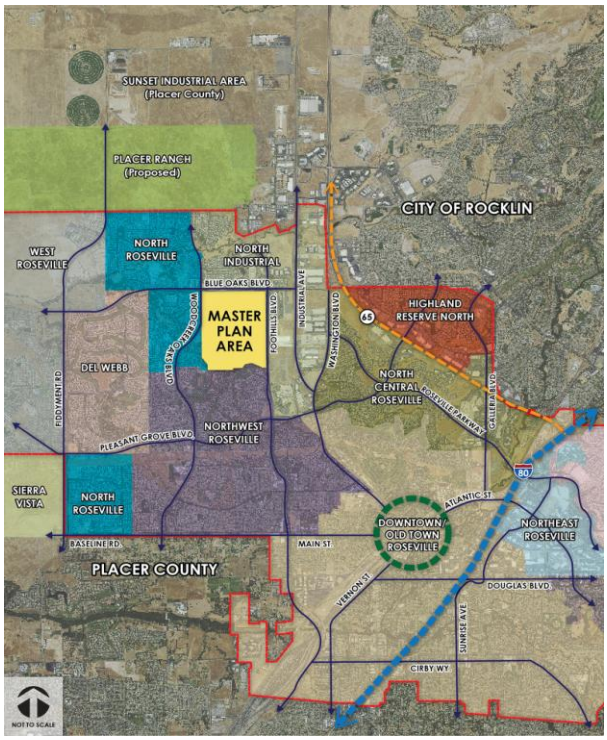


Figure 1- Project Location

PROJECT DESCRIPTION

Hewlett-Packard and BBC Roseville Oaks, LLC have proposed an amendment to the Hewlett-PackardRoseville Campus Master Plan that would reconfigure the land uses and infrastructure on a portion of the Master Plan Area. The Hewlett-Packard Roseville Campus Master Plan establishes development regulations for 492.2 acres at the southwest corner of Blue Oaks and Foothills Boulevards within the City of Roseville's North Industrial Planning Area (see **Figure 1**). Originally adopted in June 1996, the Master Plan envisioned a manufacturing and office campus to accommodate Hewlett-Packard's existing and planned operations. Hewlett-Packard has subsequently adjusted its facilities needs for the Roseville campus, divesting its ownership in all but a portion of the Master Plan Area.

Figure 2- HPCO Amendment Area

The proposed amendment to the Master Plan, the Hewlett-Packard|Campus Oaks (HPCO) Master Plan Amendment provides for a mixed-use community on a 375.7-acre portion of the original Master Plan Area (See **Figure 2**). The HPCO Amendment Area is organized into two physically and functionally integrated sub-areas: the Hewlett-Packard Campus accommodating existing and planned light industrial, recreation and related uses (blue area); and Campus Oaks (tan area) planned for a new mix of tech/business park, office, commercial, residential, park and recreation, open space and public uses. The HPCO Master Plan Amendment supersedes all prior Master Plan requirements for the HPCO Amendment Area.

PROJECT SETTING

The HPCO Amendment Area has been designated for development for over 35 years. Surrounded by established employment, commercial and residential uses, the eastern portion of the Amendment Area is partially developed by Hewlett-Packard. The western portion of the Amendment Area, Campus Oaks, is undeveloped consisting primarily of annual grasslands with gently rolling topography that has been highly disturbed over time through bi-annual disk-plowing. The southern portion of Campus Oaks contains a City owned open space/wetland preserve along the South Branch of Pleasant Grove Creek.

PROPOSED PROJECT

The HPCO Master Plan Amendment establishes updated land use and zoning regulations, mobility and infrastructure plans, public services provisions, design guidelines, and development approval processes for the 375.7-acre Amendment Area. The remainder of the larger Master Plan Area will continue to be regulated by the existing Hewlett-Packard Roseville Campus Master Plan.

The HPCO Master Plan Amendment proposes to retain the existing Light Industrial land use designation on a majority of the Hewlett Packard Campus, refining the square footage allocated

to the Campus based upon Hewlett-Packard's projected development program. In addition, a City park is proposed on the western edge of the Campus.

The existing Light Industrial land use designation on Campus Oaks is proposed to be changed to a mix of tech/business park (LI), office, commercial, residential, park and recreation, open space and public uses. The existing City owned wetland preserve will be retained, and will be augmented by additional open space parcels.

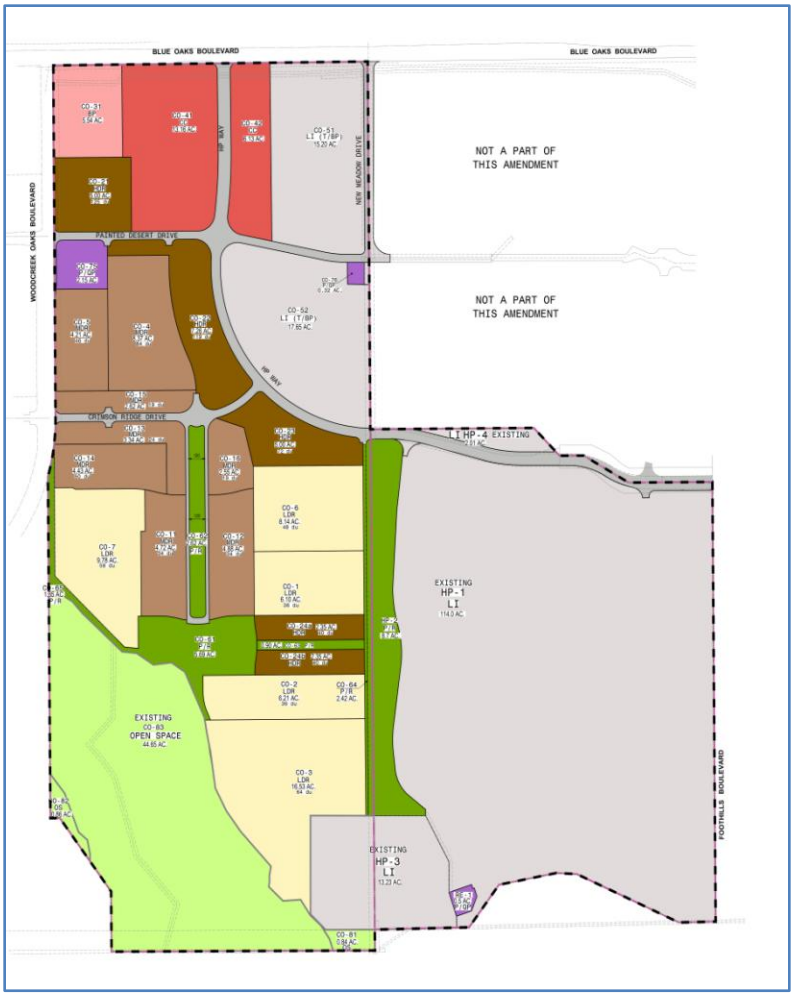


Figure 3 – HPCO Land Use Plan

The HPCO Master Plan Amendment includes proposed revisions to the mobility and utility systems to accommodate the revised land uses. The mobility system will include a modified grid street pattern that is connected to, and helps to complete, the City's larger roadway network; an interconnected system of paths, sidewalks and bike lanes; and multiple transit stops. HP Way will be constructed as a public roadway through the project site. Other roadway connections will include the extensions of New Meadow Drive from the north, and Painted Desert and Crimson Ridge Drives from the west.

The construction of backbone utility infrastructure will be necessary to accommodate full build-out of the Amendment Area. Water, recycled water, wastewater, drainage, electric, natural gas, and telecommunications infrastructure exist within and/or adjacent to the Amendment Area. Since adoption of the 1996 Master Plan, substantial development and associated infrastructure improvements have been constructed in the vicinity of the Amendment Area. The HPCO Amendment accounts for these changed conditions to define an updated and efficient backbone utility infrastructure program. Proposed land uses within the HPCO Master Plan Area are summarized on **Table 1**, and illustrated on **Figure 3**.

TABLE 1: HPCO Master Plan Amendment Area Land Use Summary

Land Use	Gross Acres	Building Square Feet (sf)					Dwelling Units (du)		
		Existing	Future	Total Capacity	FAR Range	Avg. FAR	Units	du/ac Range	Avg. du/ac
EMPLOYMENT AND COMMERCIAL USES									
Light Industrial (LI)	129.24 ac	593,820sf	606,180 sf	1,2000,000	20-50%	21%			
Tech/Business Park (T/BP-LI)	32.85 ac		300,000 sf	300,000 sf	20-40%	21%			
Business Professional (BP)	5.54 ac		60,000 sf	60,000 sf	20-40%	25%			
Community Commercial (CC)	19.29 ac		170,000 sf	170,000 sf	20-40%	20%			
Sub-Total	**186.92 ac**	**593,820sf**	**1,136,180 sf**	**1,730,000 sf**		**21%**			
RESIDENTIAL USES									
Low Density (LDR)	46.76 ac						242 du	0.5-6.9	5.2
Medium Density (MDR)	35.60 ac						310 du	7.0-12.9	8.7
High Density (HDR)	21.97 ac						396 du	13.0+	18.0
Sub-Total	**104.33 ac**						**948 du**		**9.1**
PARK, OPEN SPACE AND PUBLIC USES									
Park & Recreation (P/R)	19.44 ac								
Paseo (P/R)	2.25 ac								
Open Space (OS)	46.35 ac								
Public (P/QP)	2.97 ac								
Sub-Total	**71.01 ac**								
Backbone Roads	13.47 ac								
TOTAL	**375.73 ac**	**593,820sf**	**1,136,180 sf**	**1,730,000 sf**		**21%**	**948 du**		**9.1**

NOTE: Existing development consists of Buildings R3 (126,220 sf), R4 (131,190 sf), R5 (158,760 sf) and R6 (177,650 sf).

Baseline Water Use

Municipal Consulting Group developed a baseline water use estimate for the proposed Campus Oaks area. A summary of the water use factors and resultant estimated water demands are presented in **Table 2**. It is noted that these estimated water demands include both potable and recycled water usage in Campus Oaks. Additionally, system losses are not accounted for in any calculations.

Table 2
Campus Oaks Rezone Area
Proposed Land Uses
Baseline Water Demand Estimate

Residential		Gross Acres	Units	Annual Demand (AFY)
	LDR	46.76	242	146.90
	MDR	35.60	310	127.75
	HDR	21.97	396	87.47
	Subtotal:	104.33	948	362.12
Non-Residential				
	Commercial /Business Professional	57.68		167.87
	Parks	12.99		43.48
	Open Space	46.35		0.00
	Public Quasi Public	2.47		4.93
	Subtotal:	119.49		216.28
Right of Way		0.00		0.00
		223.82	948	578.40
Total (AFY)				578.40
System Losses (2%) AFY				11.57
Total System Demand (AFY)				589.97

Notes: Demand factors and annual demands are based on the Campus Oaks Rezone Area – Land Use Plan, dated January 22,2015 and City of Roseville unit water demand factors.

For single-family residential areas, the annual water demands shown in **Table 2** are divided into internal and external uses based on how water is used throughout the City. **Table 3** presents the percentage of external usage as well as various indoor usage percentages. These factors are used to quantify the impact various conservation measures have on the Plan's water demand.

For high-density residential (HDR) land uses, it was estimated that 20% of the overall water usage calculated in **Table 2** is used for exterior landscape irrigation. Landscape usage for HDR-Attached units will use recycled water to meet all exterior demands for the parcels.

Table 3 Typical Single-Family Residential Water Usage For LDR and MDR Land Use Types	
Use	**Percent ofTotalUse**
Landscaping	51%
Toilets	13%
Faucets, cooking, cleaning	10%
Shower	9%
Clotheswasher	8%
Bath	6%
Toiletleaks	2%
Dishwasher	1%
Note: Values in Table 2 were incorporated from the Creekview Specific Plan, Water Conservation Technical Study, which utilized values from the City's FAQ – 794.	

As shown in **Table 3**, 51% of water used by LDR and MDR uses is for exterior landscape irrigation. This usage is then split between the front and back yards of the residence, 60% for backyard landscaping and 40% for the front yard. This division of landscaping between the front and back yards was estimated with greater demand in the back yard than the front yard because hardscape limits the irrigation in a typical front yard. High Density Residential (HDR) parcels do not have a front- or back-yard areas, but utilize more common areas, as such, the irrigation demand associated with HDR parcels is represented as the total irrigated area using recycled water to meet the Annual Irrigation Demand.

This baseline water use is summarized in **Table 4.**

Water demands were identified for the front and backyards for LDR and MDR parcels to account for different conservation measures in each. Steps like limiting turf in the front yards may not necessarily be feasible in the back yards.

Table 4 Potable Water Demand Residential Use				
Campus Oaks Land UseDesignation	Annual Demand (AFY)	Annual Irrigation Demand (AFY)[1]	Annual Front Yard Demand (AFY)[2]	Annual Back Yard Demand (AFY)[3]
		51%	40%	60%
Low Density Residential	146.90	74.92	29.97	44.95
Medium Density Residential	127.75	65.15	26.06	39.09
High Density Res-Attached	Irrigated with Recycled Water			
Sub-Total CampusOaksResidential	274.65	140.07	56.03	84.04

Notes.
1. **Calculated as 51% of annual demand for LDR and MDR uses.**
2. **Calculated as 40% of irrigation demand for LDR and MDR uses.**
3. **Calculated as 60% of irrigation demand for LDR and MDR uses.**

Methods for Reducing Water Consumption

Methods identified in this conservation plan can be used individually or in combination to reduce the Campus Oaks water consumption. The various methods recommended for use within the plan area includes:

- Turf Reduction
- Smart Irrigation Controllers
- Recirculating Hot Water Systems

Turf Reduction

One of the simplest and most effective ways to conserve water is to limit the area of turf being irrigated, or exchanging higher water use plant materials (like turf) for lower water using plant materials ("soft plantings"). There are a number of plantings that can be used that dramatically reduce water demand when they replace turf. The actual water demand for soft plantings depends on the individual species. Data provided by the City of Roseville water conservation staff assumes replacing turf with soft plantings could yield a water savings of 56% compared to irrigation of turf. Turf reductions are recommended for implementation in residential and non-residential parcels within the Campus Oaks Master Plan area.

Residential Turf Reduction

It is assumed that replacing turf with low water use plantings could be accomplished on all types of residential property, including low, medium, and high-density residential parcels as well as non-residential parcels. In order to assess the potential impact of this change on residential parcels, the following assumptions were made:

- When accounting for drive ways, walk ways and hardscape areas, the landscaped area in the front yard is estimated to be 75% of the front yard area for LDR and MDR units. Of this landscaped area, it is assumed that 70% of the front yard area is turf and 5% is soft plantings. The turf area in the front yard would be reduced from 70% to 42% of the landscaped area and the soft landscaping would increase from 5% to 33%. See the figure in Appendix A for an example of how turf placement could be reduced on a typical single-family lot.

- Area converted from turf to soft plantings represents a conversion of 28% of the landscaping in the front yard. This results in the following front yard areas: 25% hardscape (driveway, paths), 42% turf, and 33% low water use plantings (See the figure in Appendix A).

- For the Roseville area, soft plantings on average use 70% less water than turf. This estimate is based on data collected by the City of Roseville. This means that turf has an average daily demand of 3,064 gallons per day per acre (gpd/acre) and soft plantings have an average daily demand of 919 gpd/acre.

- Soft plantings also utilize low volume irrigation systems like a drip or micro- spray system designed to achieve uniform application of water unlike an overhead spray irrigation system used for turf. To accomplish the 70% reduction in water usage obtained from using soft plantings, this evaluation also assumes that landscaping is irrigated properly (no over-or under-watering).

Table 5 presents the base landscape percentage and new residential landscaped areas.

Table 5
Reduced Landscape Turf Areas
For LDR and MDRL and Use Types

Land Use Designation	Front Yard Irrigated Area[1]	Base Condition		Base Condition With Water Conservation	
		Turf Area	Low Water Use Area	Turf Area	Low Water Use Area[2]
Low Density Residential	75%	70%	5%	42%	33%
Medium Density Residential	75%	70%	5%	42%	33%

1. As a percentage of the front yard, See Appendix A.
2. Includes 5% existing low water use plantings + 28%new water use plantings.

Recycled water will be used to irrigate the high-density attached residential land uses, and thus would conserve potable water.

As an example of how these values were calculated, the calculation for the annual front yard turf demand and the reduced annual front yard demand is presented below.

For the annual front yard turf demand, as calculated for low-density residential land-uses, 75% of the front yard area is landscaped; 70% turf and 5% soft plantings. Since soft plantings use 70% less water than what is required for turf, this 5% area is equal to 1.50% (5% x 30%) turf area.

This resulted in the following annual front yard demands for LDR, MDR is calculated the same way.

Turf: 29.97 AFY * (70%/71.50 %) = 29.34 AFY

Soft Planting: 29.97 AFY * (1.5%/71.5%) = 0.63 AFY

Totaling: 29.97 AFY

For the reduced annual front yard demand, as calculated for LDR land uses, reducing the base turf area in the front yards from 70% to 42% and replacing that area (28%) with soft plantings resulted in the following annual demands.

Adjusted landscape demand for LDR (example of calculation):

29.97 AFY * (42%/70%) = 17.98 AFY – Modified Turf Demand
29.97 AFY * (28%* 30%)/70%)+ 0.63 AFY = 4.23 AFY – Modified Soft Planting

Totaling 22.21 AFY

29.97 AFY – 22.21 AFY = A savings of 7.76 AFY

Table 6 presents the results of the residential water savings for replacing landscape turf in the low density and medium density residential areas of the proposed Campus Oaks Master Plan area.

Table 6 Reduced Turf/Increased Soft Plantings Water Savings - Residential			
Land Use Designation	**Annual Front Yard Demand (AFY)[1]**	**Modified Turf Demand (AFY)**	**Reduction Due to Landscape Conversion (AFY)**
Low Density Residential	29.97	22.21	7.76
Medium Density Residential	26.06	19.31	6.75
Total:	56.03	41.52	14.51

Non-Residential Turf Reduction

Turf reduction on non-residential parcels within the Campus Oaks area, turf reduction is assumed to be employed on all landscaped areas.

The assumptions utilized to estimate water conservation in the non-residential areas of the Campus Oaks sub-area are as follows:

- Within Roseville, soft plantings are assumed to use 70% less water than turf.
- High Density Residential parcels landscape approximately 40% of the overall parcel.
- Commercial / Business Professional parcels landscape approximately 30% of the overall parcel.
- Park parcels landscape approximately 90% of the overall parcel.
- Parks are estimated to landscape approximately 80% of the landscaped portion of the parcel area with turf and 20% with soft plantings. The landscape percentage would be reduced to30% turf and 70% soft plantings.
- Low water use areas are assumed to utilize low volume irrigation systems such as a drip or micro spray system design to achieve irrigation uniformity rather than an overhead spray irrigation system typically used for turf.
- Right-of-Way streetscape landscaping is calculated based on the respective street segments. The amount of landscaping for each reach is based on the type of arterial landscaping being proposed in the master plan.

- Right-of-Way streetscapes are estimated to landscape approximately 80%of the landscaped portion of the parcel area with turf and 20% with soft plantings. The landscape percentage would be reduced to 30% turf and 70% soft plantings.

Table 7 summarizes the results of reducing turf and replacing it with soft plantings in various types of non-residential installations.

Table 7
Reduced Turf/Increased Soft Plantings
Water Savings–Non-Residential
Recycled Water

Land Use Designation	Annual Irrigation Demand (AFY)	Modified Annual Irrigation Demand (AFY)	Water System Savings (AFY)	Type
Campus Oaks Area				
High Density Residential	17.49	10.77	6.73	Recycled
Parks	39.13	28.18	10.95	Recycled
Public Quasi Public	2.46	1.26	1.20	Recycled
Right of Way	0	0	0	Recycled
Total Campus Oaks	59.08	40.21	18.88	Recycled

Smart Irrigation Controller

Demand for water varies greatly with weather patterns and time of year. Standard irrigation schedules do not account for actual weather conditions during the day, week, or month that could vary significantly from normal weather patterns. This deviation can result in significant water waste. A smart irrigation controller can account for these variations by using weather information and soil moisture conditions to determine the amount of water to apply. A smart irrigation controller restricts the time of irrigation and water application rates that are really needed for efficient and effective watering.

Fourteen studies estimating the percentage of water conservation associated with the use of smart irrigation controllers were summarized in a paper published by the US Bureau of Reclamation (USBR, April 2008). These studies estimated the range of water savings associated with their use to be between 7 to 41%.

However, not all houses have controllers for both the front and back yards. Some existing houses use impact heads connected to a hose to irrigate their front or back yards. This irrigation method is less efficient and results in higher water waste. Considering these issues, the percent of water savings for this measure was estimated at 20%.

The additional savings expected with the use of a smart irrigation controller are presented in **Table 8**. All land use types will be required to employ smart irrigation controllers. These calculations assume that the area of turf is reduced as described above.

As an example, for the low-density residential front yards, the annual demand is 22.21 AFY. Assuming that this demand is reduced by 20% when using smart irrigation controllers, the reduced demand is estimated to be:

22.21 AFY * (80%) = 17.76 AFY

Table 8
Smart Irrigation Controller
Water Savings

Land UseDesignation	Turf Modified Demand (AFY)[1]	Reduced Demand (AFY)	Water Savings (AFY)	Water System Saving
Campus Oaks Area of HP-CO Master Plan				
Low Density Residential				
Front Yard	22.21	17.76	4.44	Potable
Back Yard	44.95	35.96	8.99	Potable
Medium Density Residential				
Front Yard	19.31	15.45	3.86	Potable
Back Yard	39.09	31.27	7.82	Potable
Total Potable Campus Oaks	**125.56**	**100.45**	**25.11**	**Total Potable**
High Density Residential	10.77	8.61	2.15	Recycled
Parks	28.18	22.54	5.64	Recycled
Public Quasi Public	1.26	1.00	0.26	Recycled
Right of Way				Recycled
Total Campus Oaks	**165.77**	**132.60**	**33.15**	

Notes: 1. Original demand includes the turf reduction water conservation measures that were previously described.

Recirculating Hot Water Systems

Recirculating hot water systems use a pump to keep the water in the hot water lines circulating back to the water heater to keep the water in the hot waterlines hot. This provides hot water at the tap immediately and prevents the need to let cold water flow down the drain until the water heats up. These systems can be operated in a number of different ways but all conserve water in the same manner. For this study, it was estimated that each draw of hot water would waste approximately 1.25 gallons per occurrence. This is equivalent to drawing water through 50 feet of ¾-inch pipe with each draw. For purposes of this analysis, it is assumed that this occurs six times per day per dwelling unit (7.5 gallons per day per dwelling unit). The expected savings are presented in **Table 9**.

A low-density residential land use having a total number of dwelling units of 242 is used as a calculation example. The reduced water demand would be estimated to be:

242 units * 6 occurrences per day * 1.25 gpd/EDU *365 days = 662,475 gallons per year = 2.03 AFY

Table 9
Re-Circulating Hot Water System
Water Saving

Land Use Designation	Dwelling Units (DU)	Recirculating Hot Water (AFY)	Water System Savings
Campus Oaks			
Low Density Residential	242	2.03	Potable
Medium Density Residential	310	2.60	Potable
High Density Residential	396	3.33	Potable
Total Campus Oaks	948	7.96	

Summary

The water conservation measures selected for implementation for the Campus Oaks area of the Master Plan follow previous Specific Plan. These measures were selected because of their ability to be cost-effectively implemented and achieve the anticipated water savings. **Table 10** summarizes both potable and recycled water demands as well as estimated conservation results.

Table 10
Potable Water and Recycled Water Summary[1]

	Water Conser (AFY)	Water Usage (AFY)	Rec Water Conser (AFY)	Rec Water Usage (AFY)	Running Total (AFY)
Initial Water Demand Estimate		469.07		109.33	578.40
Conserved Potable Water	47.59				(47.59)
Conserved Recycled Water			26.93		(26.93)
Net Demand		421.48		82.40	503.88

1 – Totals do not include system losses of 2%.

The total estimated amount of water conserved through this plan is projected to be 74.52 AFY (47.59 AFY of potable water and 26.93 AFY of recycled water) plus an additional reduction for recycled water use of 82.40 AFY totaling 156.92 AFY less potable water. This equates to a 26.60% reduction in usage by implementing the proposed conservation measures. The net potable demand is 433.05 AFY – a reduction of 156.92 AFY.

Tables 10.A and 10.B provide the detailed results for Potable Water Usage (10.A) and Recycled Water Usage (10.b). Water savings are based on the three specific conservation measures applied to various land use categories throughout the Campus Oaks area as identified in **Table1**.

Table 10.A
Estimate Potable Water Saved
by Implementing Conservation Measures
(AFY)

Residential		Annual Demand (AFY)	Outdoor Demand (AFY)	Modified Turf Savings (AFY)	Smart Timer Savings (AFY)	Insta Hot Savings (AFY)	Total Savings (AFY)
	LDR	146.90	74.92	7.76	13.43	2.03	23.02
	MDR	127.75	65.15	6.75	11.68	2.60	21.03
	HDR	87.47	17.49	Recycled Water		3.33	3.33
	Subtotal:	362.12	157.56	14.51	25.11	7.96	47.58

Table 10.B
Estimate Recycled Water Saved
by Implementing Conservation Measures
(AFY)

		Original Annual Demand (AFY)	Outdoor Demand (AFY)	Conservation Measures			Conserved RW (AFY)
				Modified Turf (AFY)	Smart Timer (AFY)	Insta Hot Savings (AFY)	
Residential	HDR	87.47		6.73	2.15		8.88
Non-Residential							
	Commercial	56.14	16.84	-	-		-
	Business / Professional	111.73	33.52	-	-		-
	Parks / Open Space	43.48	39.13	10.96	5.64		16.60
	Public Quasi Public	4.93	2.46	1.21	0.25		1.46
	Subtotal:	216.28	91.53	18.90	8.04		26.94
Total:		578.40	249.09	33.41	33.15	7.96	

Though the actual water conservation realized will depend in part on the participation of the homeowners or tenants of the affected parcels, it is expected that these measures could be implemented and maintained by employing the following measures:

- Constructing parcels with these water conservation measures in place.
- By simply having an available smart irrigation controller with the capacity to run the front and back yard systems pre-wired and in place, using this controller is a financially sound decision for the land owner versus replacing the controller with a different one.
- The City or the applicable school district, commercial owner, or a homeowners association will maintain landscape areas for parks, paseos, or Right of Ways. It is expected that landscape maintenance professionals will be able to maintain these water savings through proper management of these landscapes, especially by minimizing run-off through effective adjustment of the smart irrigation controller and other pertinent infrastructure.
- For single-family residences (LDR and MDR Land Use types), it is expected that a two-fold measure will be required to realize long-term water savings.
    1. Restrictions in the codes, covenants and restrictions for each parcel that limiting the types and/or locations of landscape in the front yards of each residence.
    2. Ongoing outreach by the City to remind and reinforce the need for water conservation. This can include attachments to the water bill, water audits that can be made available to HPCO land owners by City staff, the promotion of the City's water conservation website, and the availability of City water conservation staff to respond to specific questions.
    3. Educating homeowners on how to use and setup their smart irrigation controllers, especially if the back yard has not been added to the system.
- Conservation measures should be applied to commercial and business professional land use types to ensure consistency across all land use types.

References

1. Morton and Pitalo Civil Engineering, Inc., *Campus Oaks Land Use Plan DRAFT,* January 22, 2015.

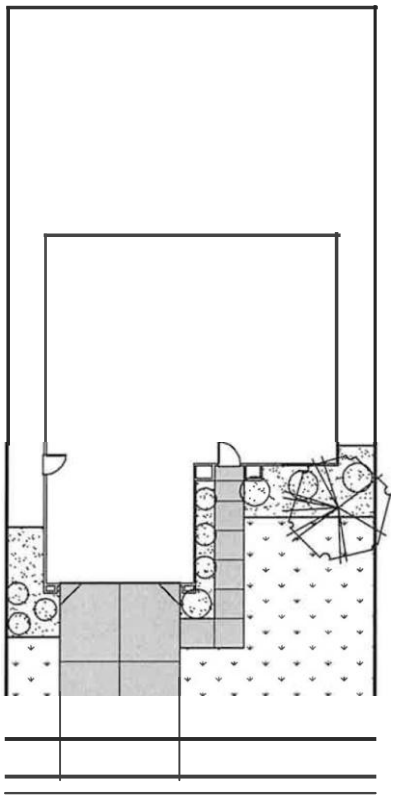
2. Universityof California Cooperative Extension, Sacramento County Agriculture and Natural Resources, Garden Notes, June 2008.

3. US Bureau of Reclamation, Summary of Smart Controller Water Savings Studies, April 2008.

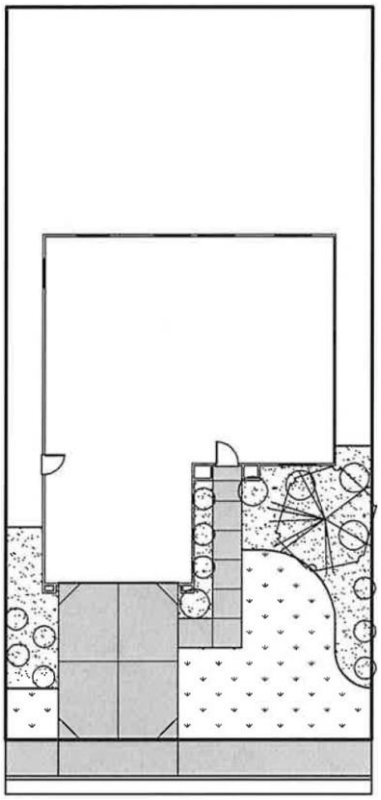
Appendix A- Front Yard Conservation Exhibit

FRONT YARD WATER CONSERVATION EXHIBIT BASELINE

CONDITION



PROPOSED CONDITION



AREA	BASELINE	PROPOSED
HARDSCAPE	25%	25%
LANDSCAPE		
-TURF	70%	42%
-LOWWATER PLANTING	5%	33%
TOTAL	100%	100%

WATER SUPPLY MASTER PLAN

Date: June 15, 2015

By: Derrick Whitehead, PE
Municipal Consulting Group

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INTRODUCTION

STUDY PURPOSE AND OBJECTIVES

The purpose of this Water Supply Master Plan (Plan) is to identify the parcels to be served by potable water, calculate the demands, and properly size the water supply system within the Campus Oaks portion of the Hewlett-Packard / Campus Oaks Rezone & Master Plan Project (HPCO) to meet the City of Roseville's (City) Water Utility design standards.

The primary objective of this Plan is to set forth the water infrastructure requirements of the HPCO. This Plan, in part, satisfies the need to provide sufficient information on the water demands and conveyance system to assist in establishing conditions within the project development agreement, environmental review and in the future, the review and approval of the improvement plans within the HPCO Master Plan area.

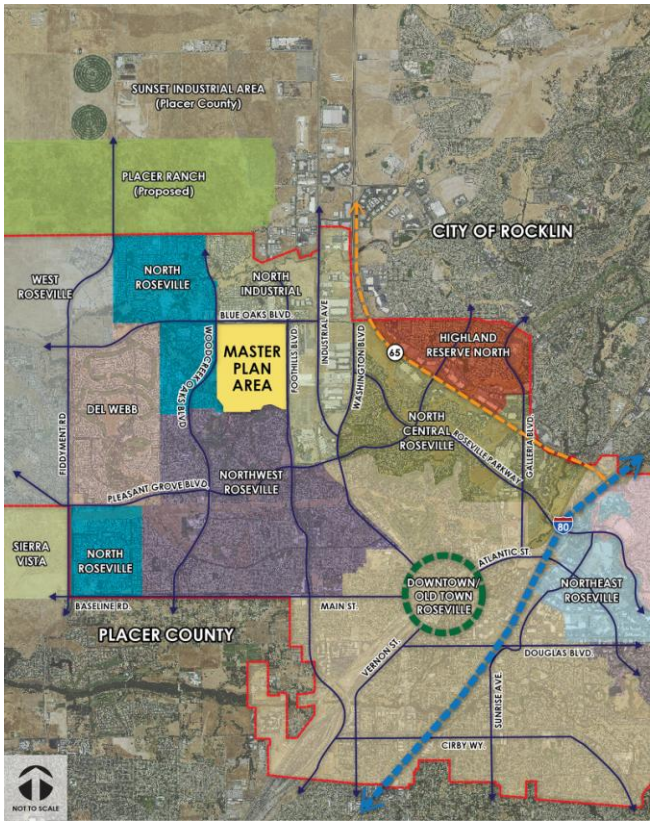


Figure 1- Project Location

PROJECT DESCRIPTION

Hewlett-Packard and BBC Roseville Oaks, LLC have proposed an amendment to the Hewlett-Packard Roseville Campus Master Plan that would reconfigure the land uses and infrastructure on a portion of the Master Plan Area. The Hewlett-Packard Roseville Campus Master Plan establishes development regulations for 492.2 acres at the southwest corner of Blue Oaks and Foothills Boulevards within the City of Roseville's North Industrial Planning Area (see **Figure 1**). Originally adopted in June 1996, the Master Plan envisioned a manufacturing and office campus to accommodate Hewlett-Packard's existing and planned operations. Hewlett-Packard has subsequently adjusted its facilities needs for the Roseville campus, divesting its ownership in all but a portion of

Figure 2- HPCO Amendment Area

the Master Plan Area.

The proposed amendment to the Master Plan, the Hewlett-Packard / Campus Oaks (HPCO) Rezone & Master Plan Amendment provides for a mixed-use community on a 375.7-acre portion of the original Master Plan Area (See **Figure 2**). The HPCO Amendment Area is organized into two physically and functionally integrated sub-areas:

- the Hewlett-Packard Campus accommodating existing and planned light industrial, recreation and related uses (blue area);
- and Campus Oaks (tan area) planned for a new mix of tech/business park, office, commercial, residential, park and recreation, open space and public uses.

The HPCO Master Plan Amendment supersedes all prior Master Plan requirements for the HPCO Amendment Area.

PROJECT SETTING

The HPCO Amendment Area has been designated for development for over 35 years. Surrounded by established employment, commercial and residential uses, the eastern portion of the Amendment Area is partially developed by Hewlett-Packard. The western portion of the Amendment Area, Campus Oaks, is undeveloped consisting primarily of annual grasslands with gently rolling topography that has been highly disturbed over time through bi-annual disk-plowing. The southern portion of Campus Oaks contains a City owned open space/wetland preserve along the South Branch of Pleasant Grove Creek.

PROPOSED PROJECT

The HPCO Master Plan Amendment establishes updated land use and zoning regulations, mobility and infrastructure plans, public services provisions, design guidelines, and development approval processes for the 375.7-acre Amendment Area. The remainder of the larger Master Plan Area will continue to be regulated by the existing Hewlett-Packard Roseville Campus Master Plan.

The HPCO Master Plan Amendment proposes to the retain the existing Light Industrial land use designation on a majority of the Hewlett-Packard Campus, refining the square footage allocated to the Campus based upon Hewlett-Packard's projected development program. In addition, a City park is proposed on the western edge of the Campus.

The existing Light Industrial land use designation on Campus Oaks is proposed to be changed to a mix of tech/business park (LI), office, commercial, residential, park and recreation, open space and public uses. The existing City owned wetland preserve will be retained, and will be augmented by additional open space parcels.

Figure 3 – HPCO Land Use Plan

The HPCO Master Plan Amendment includes proposed revisions to the mobility and utility systems to accommodate the revised land uses. The mobility system will include a modified grid street pattern that is connected to, and helps

to complete, the City's larger roadway network; an interconnected system of paths, sidewalks and bike lanes; and multiple transit stops. HP Way will be constructed as a public roadway through the project site. Other roadway connections will include the extensions of New Meadow Drive from the north, and Painted Desert and Crimson Ridge Drives from the west.

The construction of backbone utility infrastructure will be necessary to accommodate full build-out of the Amendment Area. Water, recycled water, wastewater, drainage, electric, natural gas, and telecommunications infrastructure exist within and/or adjacent to the Amendment Area. Since adoption of the 1996 Master Plan, substantial development and associated infrastructure improvements have been constructed in the vicinity of the Amendment Area. The HPCO Amendment accounts for these changed conditions to define an updated and efficient backbone utility infrastructure program.

Proposed land uses within the HPCO Master Plan Area are summarized on **Table 1**, and illustrated on **Figure 3**.

A well site is proposed near the intersection of New Meadow Drive and Painted Desert Drive. Typical production requirements for municipal and industrial wells are in the range of 1,500 to 1,800 gallons per minute. Estimated annual production is 2,420 AFY, if run continuously and is approximately 4.7 times the amount needed to serve all of the Campus Oaks area. The facility will be constructed to comply with the City's ongoing Aquifer Storage and Recovery program.

TABLE 1: HPCO Master Plan Amendment Area Land Use Summary

Land Use	Gross Acres	Building Square Feet (sf)					Dwelling Units (du)		
		Existing	Future	Total Capacity	FAR Range	Avg. FAR	Units	du/ac Range	Avg. du/ac
EMPLOYMENT AND COMMERCIAL USES									
Light Industrial (LI)	129.24 ac	593,820sf	606,180 sf	1,200,000 sf	20-50%	31%			
Tech/Business Park (T/BP-LI)	32.85 ac		300,000 sf	300,000 sf	20-40%	21%			
Business Professional (BP)	5.54 ac		60,000 sf	60,000 sf	20-40%	25%			
Community Commercial (CC)	19.29 ac		170,000 sf	170,000 sf	20-40%	20%			
Sub-Total	**186.92 ac**	**593,820sf**	**1,136,180 sf**	**1,730,000 sf**		**21%**			
RESIDENTIAL USES									
Low Density (LDR)	46.76 ac						242 du	0.5-6.9	5.2
Medium Density (MDR)	35.60 ac						310 du	7.0-12.9	8.7
High Density (HDR)	21.97 ac						396 du	13.0+	18.0
Sub-Total	**104.33 ac**						**948 du**		**9.1**
PARK, OPEN SPACE AND PUBLIC USES									
Park & Recreation (P/R)	19.44 ac								
Paseo (P/R)	2.25 ac								
Open Space (OS)	46.35 ac								
Public (P/QP)	2.97 ac								
Sub-Total	**71.01 ac**								
Backbone Roads	13.47 ac								
TOTAL	**375.73 ac**	**593,820sf**	**1,136,180 sf**	**1,730,000 sf**		**27%**	**948 du**		**9.1**

NOTE: Existing development consists of Buildings R3 (126,220 sf), R4 (131,190 sf), R5 (158,760 sf) and R6 (177,650 sf).

Baseline Water Use

Municipal Consulting Group developed a baseline water use estimate for the proposed Campus Oaks area. A summary of the water use factors and resultant estimated water demands are presented in **Table 2**. It is noted that these estimated water demands include both potable and recycled water usage in Campus Oaks. Additionally, system losses are not accounted for in any calculations.

Table 2
Campus Oaks Rezone Area
Proposed Land Uses
Baseline Water Demand Estimate

Residential		Gross Acres	Units	Annual Demand (AFY)
	LDR	46.76	242	146.90
	MDR	35.60	310	127.75
	HDR	21.97	396	87.47
	Subtotal:	104.33	948	362.12
Non-Residential				
	Commercial /Business Professional	57.68		167.87
	Parks	12.99		43.48
	Open Space	46.35		0.00
	Public Quasi Public	2.47		4.93
	Subtotal:	119.49		216.28
Right of Way		10.71		0.00
		234.53	948	578.40
Total (AFY)				578.40
System Losses (2%) AFY				11.57
Total System Demand (AFY)				589.97

Notes:
1. Demand factors and annual demands are based on the Campus Oaks Rezone Area – Land Use Plan, dated January 22, 2015 and City of Roseville unit water demand factors.

Calculations of the annual residential water demands are shown in **Table 3A,** and the non-residential demands are shown in **Table 3B**. The bottom of **Table 3B** consolidates the totals for both residential and non-residential demands with system losses. Before applying water conservation and the use of recycled water, the Campus Oaks Area's estimated demand is 589.97 AFY.

The 2015 HPCO Master Plan would develop approximately 189.88 acres west of the existing Hewlett- Packard Campus within the City of Roseville. A summary of the

proposed land use designations is graphically illustrated on **Figure 3** and listed in **Tables 3A and 3B**.

TABLE 3A
HEWLETT-PACKARD /CAMPUS OAKS
REZONE & MASTER PLAN
CAMPUS OAKS AREA – RESIDENTIAL DEMANDS

Parcel	Land Use	Gross Area (Acres)	Density (du/ac)	DU's (Units)	Demand Factor (gpd/EDU)	Demand (AFY)
Low Density Residential						
CO - 1	LDR	6.10	5.9	36	521.00	21.01
CO - 2	LDR	6.21	5.8	36	521.00	21.01
CO - 3	LDR	16.53	3.9	64	600.00	43.02
CO - 6	LDR	8.14	5.9	48	521.00	28.01
CO - 7	LDR	9.78	5.9	58	521.00	33.85
Sub-Total		46.76		242		146.90
Medium Density Residential						
CO - 4	MDR	8.37	10.0	84	323.00	30.39
CO - 5	MDR	4.69	9.8	46	323.00	16.64
CO - 11	MDR	4.72	7.2	34	430.00	16.38
CO - 12	MDR	4.88	7.0	34	430.00	16.38
CO - 13	MDR	3.34	7.2	24	430.00	11.56
CO - 14	MDR	4.43	11.3	50	323.00	18.09
CO - 15	MDR	2.62	7.3	19	430.00	9.15
CO - 16	MDR	2.55	7.5	19	430.00	9.15
Sub-Total		35.60		310		127.75
High Density Residential (Attached)						
CO - 21	HDR	5.00	25.0	125	177.00	24.78
CO - 22	HDR	7.26	16.1	119	177.00	23.60
CO - 23	HDR	5.00	14.8	72	288.00	23.23
CO - 24	HDR	4.71	17.0	80	177.00	15.86
Sub-Total		21.97		396		87.47
System Losses					2%	7.24
Residential Total:						
		104.33		948.00		369.36

TABLE 3B
CAMPUS OAKS AREA – NON-RESIDENTIAL
HEWLETT-PACKARD / CAMPUS OAKS MASTER PLAN

Parcel	Land Use	Gross Area Acre	Average Lot Size/ Product Type	Demand Factor gpd/AC	Demand AFY
Non-Residential					
CO - 31	BP	5.54	Prof Office	2,598.00	16.12
CO - 41	CC	13.16	Commercial	2,598.00	38.30
CO - 42	CC	6.13	Commercial	2,598.00	17.84
CO - 51	BP	15.2	Tech/Business Park	2,598.00	44.24
CO - 52	BP	17.65	Tech/Business Park	2,598.00	51.37
		57.68			167.87
Parks, Open Space & Public Uses					
CO - 61	P / R	5.70	Park	2,988.00	19.08
CO - 62	P / R	2.62	Park	2,988.00	8.77
CO - 63	P / R	0.9	Paseo	2,988.00	3.01
CO - 64	P / R	2.42	Park	2,988.00	8.10
CO - 65	P / R	1.35	Park	2,988.00	4.52
CO - 81	OS	0.84	Park/Preserve	0.00	0.00
CO - 82	OS	0.86	Park/Preserve	0.00	0.00
CO - 83	OS	44.65	Park/Preserve	0.00	0.00
		59.34			43.48
Public					
CO - 75	P/QP	2.15	Fire Station	1,780.00	4.29
CO - 76	P/QP	0.32	Well Site	1,780.00	0.64
		2.47			4.93
Roads					
Roads					
	ROW	10.71		0.00	0.00
Sub-Total					
					216.27
System Losses					
	Campus Oaks			2%	4.33
Non-Residential Adjusted Totals					
	Campus Oaks	130.20			220.60
Total Estimated Demand					
	Residential	104.33			369.36
	Non-Residential	130.20			220.60
					589.97

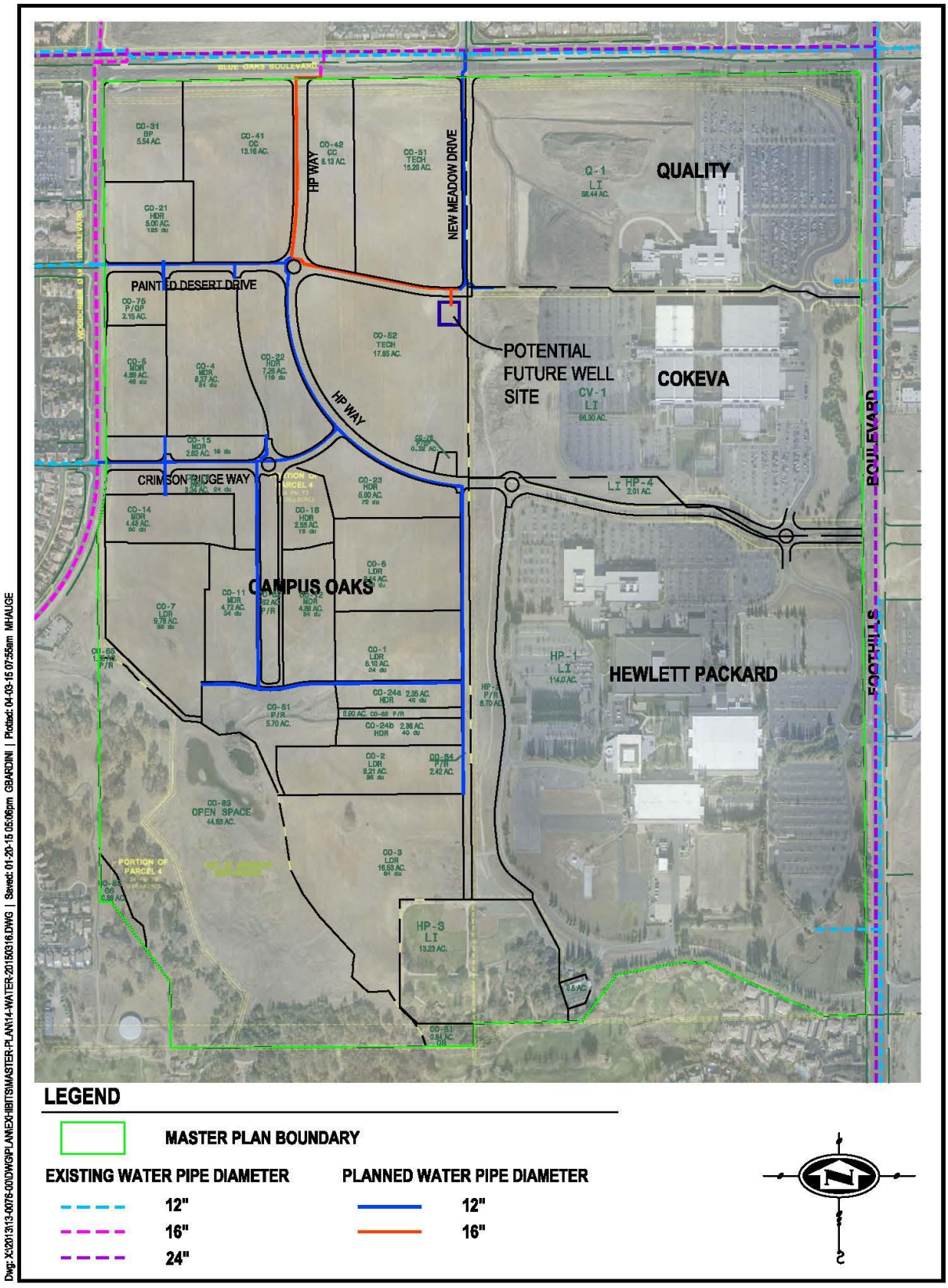
As shown on **Figure 3**, Hewlett-Packard / Campus Oaks Rezone & Master Plan Project land use plan includes low, medium, and high density residential uses; community commercial; commercial mixed-use; public/quasi-public; parks and recreation areas, open space, and paseos; landscape corridors; light industrial; and roadways. At build out, the HPCO would provide approximately 948 dwelling units and generate a population of approximately 2,475 persons, based on the City of Roseville's General Plan assumption of 2.61 persons per household. According to the HPCO Master Plan, the project would accommodate approximately 3.23 million square feet of non-residential development generating approximately 4,500 to 7,500 jobs depending upon the ultimate composition and operations of employment uses.

Design Criteria and Analysis

To evaluate the on-site potable water system required to support the development of the Campus Oaks Sub-Area, the land use polygons were used to identify the amount of water anticipated throughout the rezoned area. Existing HP campus areas connect into the City's existing transmission system on Foothills (see **Figure 3**). Computed water flows are used to determine the preliminary sizes of pipes required to accommodate the development of the project.

AVERAGE and MAX DAY FLOW DETERMINATION

The proposed land use for each polygon obtaining flows from the distribution system is shown on the **Figure 3** Water Distribution System Map. From the proposed land use, the average daily demand (ADD) was computed based on the water demand factors presented in **Table 4** below.



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DOMESTIC WATER MASTER PLAN EXHIBIT

Figure 4 – Water System Layout

Table 4 City Unit Demand Factors	
Residential Land Use Categories	**Unit Demand Factor (GPD/DU)**
LDR1 (<3.5 DUs / Acre)	728
LDR2 (3.5 to 5 DUs / Acre)	600
LMDR1 (>5.0 to 6.0 DUs / Acre)	521
LMDR2 (6.0 to 8.0 DUs / Acre)	430
MDR (>8.0 to 12.0 DUs / Acre)	323
HDR1 (>12.0 to 16.0 DUs / Acre)	288
HDR2 (>16.0 DUs / Acre)	177
Non Residential Land Use Categories	**Unit Demand Factor (GPD/AC)**
Community Commercial / Retail	2,598
Business Professional	2,598
Light Industrial	2,598
Industrial	2,562
Railyard	109
Elementary School	3,454
High School	4,069
Pubic Quasi-Public	1,780
Parks	2,988
Open Space / Right of Way	0

gpd/ DU = Gallons per day per dwelling unit
gpd / AC -Gallons per day per acre

DESIGN FLOW

Potable water flows are characterized by a diurnal curve, where flows tend to be high during early morning hours and at minimum sometime in the morning to mid-afternoon and then another minor peak during the evening hours. In addition, potable water flows will increase during the drier or summer months when rainwater diminishes and customers irrigate their landscaped areas.

In accordance with the City of Roseville water system design standards, two peaking factors are applied to the ADD for sizing infrastructure. The two adjustments to ADD are known as Max Day Demand (MDD), and Peak Hourly Demands (PHD). To obtain the appropriate design flow the corresponding flow is used to size the infrastructure. For example, MDD is used to determine the amount of treatment plant capacity needed to serve the site, while PHD is used to size distribution system piping and system storage.

Peaking Factors: The average day demand to maximum day demand peaking factor shall be 2.0. The maximum day demand to peak hour demand peaking factor shall be 1.7 (3.4 times the average day demand to peak hour).

Table 5
Daily Peaking Factors
And Flow Rates for Campus Oaks Master Plan Area

	Peaking Factor	Flow Rate
Average Daily Demand	1.0	365.89 gpm / 0.53 mgd
Maximum Daily Demand	2.0	731.78 gpm / 1.05 mgd
Peak Hour Demand	1.7	1,244.02 gpm / 1.79 mgd

Fire Flows: For areas of the general type the flows are noted below in **Table 6**. Expansion or change in zoning of the development shall be subject to the requirements of the California Fire Code as adopted by the Roseville Fire Department.

Table 6
Fire Flow Requirements

Land Use	**Fire Flow (gpm)**	**Residual Pressure (psi)**	**Required Duration (hrs)**
Residential	1,500	20	2
Multi-Family	2,500 – 4,000	20	3
Commercial / Office / Industrial	4,000	20	4
School	4,000	20	4

Note: Criteria taken from the California Fire Code (CFC).

Transmission System: Transmission mains are 16 inches in diameter or larger. Standard transmission main sizes are 16-, 24-, 30-, 36-, 42-, 48- and 54- inches in diameter. Sizing and layout of transmission mains shall conform to the criteria established in the City's Design Standards.

Distribution System: Standard distribution main sizes are 6-, 8-, and 12- inches in diameter. Sizes of mains shall be such that the normal pressures shall not be less than

50 PSI nor more than 100 PSI except during peak domestic and fire demand, the pressure shall not be less than 20 PSI. The distribution system shall be designed in grid form to provide equalized pressures throughout the system under varying rates and location of demand.

The minimum pressures and flows specified in these design standards shall govern the design. The following shall be considered during system design:

- Minimum pipe size for residential development is 6 inches in diameter.
- Minimum pipe size for commercial development is 8 inches in diameter.
- C factor 130 for PVC C-900; new cement lined; ductile iron pipe

C factor 130 for existing pipes 16 inch and larger; and 120 for all existing pipes 12 inch and smaller.

Analysis and Results

Water System Analysis

The domestic water system layout utilizes the proposed land use plan for the Campus Oaks Area to identify the location of major backbone elements to distribute flows throughout the site (**See Figure 4**). Smaller, local distribution system elements will be sized when submitting the small-lot tentative maps. The existing layout is consistent with the most recent HP Master Plan that anticipated distributing larger volumes of water throughout the site. Fire flow requirements for non-residential development are higher than what is required for residential development as shown in **Table 6**. Also, all new residential development has local protection because of the new fire sprinkler requirement for all residential construction.

Morton and Pitalo modeled the on-site system using WaterCAD version 8. Their analysis is contained in Appendix A. The model layout is based on **Figure 4**. As seen from the results, the backbone system proposed complies with the City's design criteria previously present in this Plan.

Comparison of the ADD to that of the current land use plan: Morton and Pitalo's analysis used the demand estimate submitted to the City in January, 607.66 AFY

(376.70 gpm) compared to the current demand estimate of 589.97 AFY (365.89 gpm). Since the initial estimated demand is higher, the local analysis is more conservative and was not re-run at the lower demands.

Water Treatment Plant Capacity

The amount of water treatment plant (WTP) capacity needed for the Campus Oaks Sub-Area is based on the amount of water needed to serve the site during a maximum day (summer time). **Table 5** highlights the fact that maximum daily demands are 1.05 million gallons per day (mgd). Capacity to serve the HPCO Master Plan area has already been planned for in the City's build out projections. When future facilities are needed (treatment and storage capacity), they are constructed through the use of water fees collected when new development connects to the City's water system.

Based on the existing HP Development Agreement, the Campus Oaks Area has 0.6 mgd of ADD capacity, which would equate to 1.2 mgd MDD capacity using the peaking factor listed in **Table 5**. Comparing 1.2 mgd capacity to 1.05 mgd, there is adequate WTP capacity to serve the Campus Oaks Area with an excess of 0.15 mgd.

Table 7
Pressure Design Criteria

Operating Condition	Criteria
Average Day Demand Conditions	50 psi minimum pressure 100 psi maximum pressure 5 fps – pipe velocity (ADD) 6 fps – pipe velocity (MDD or PHD)
Fire Flow Plus Max Day Demand	20 psi minimum at source node 50 psi minimum elsewhere

Water Storage Capacity

Reservoir sizing is composed of operational demand fire protection demand and any emergency demand. The operational and emergency components are calculated based upon a percentage of the system's MDD. The fire protection demand is based on the largest volume of fire flow required in a system over a selected period of time, typically four hours. The operational storage is 25% of MDD, while the emergency storage is 50% of MDD. Roseville has allowed groundwater sources to account for up to 25% of the offset emergency storage needs.

The amount of storage capacity needed to serve the Campus Oaks Sub-Area is identified in **Table 8.**

Table 8 Campus Oaks Area Storage Requirement			
Category	**Equation**	**Volume (gal)**	**Volume (MG)**
Operational	(25%) * (732 gpm) * (1,440 min/day)	263,520	0.264
Fire Protection	(4,000 gpm)*(4 hours)*(60 min/hour)	960,000	0.960
Emergency	(25%) * (732 gpm) * (1,440 min/day)	263,520	0.264
Total Volume		1,487,040	1.488

Note: Criteria taken from the California Fire Code (CFC).

As noted earlier, the HPCO Master Plan area is an infill project and as such, treatment and storage capacity needed for the overall site has already been included in the City's capitol improvement plan. If infrastructure has not already been constructed to meet the needs of the site, it will be constructed when system demands dictate the need for the new facilities (principally treatment and storage facilities).

Summary

The Campus Oaks Area of the Hewlett-Packard / Campus Oaks Rezone & Master Plan area is projected to use 589.97 AFY of water to meet the projected demand.

The water system design was based on using the full 589.97 AFY from a potable water source. The Campus Oaks Area has 668[1] AFY of surface water allocated for the site based on the current zoning of light industrial land. If the site is only served by potable water, there would be 78.03 AFY remaining.

The Hewlett-Packard / Campus Oaks Rezone & Master Plan Project is to use recycled water to offset the use of surface water to irrigate all non-residential landscaping, high density residential landscaping and any landscaping in the right of way. Because the proposed project anticipates using less water than projected for the current zoning, it is fair to assume that the long-term treatment and storage capacities have already been included in the City's Capital Improvement Program.

Infill projects have system capacity already allocated or set aside for their future development. For example, the City's water treatment plant has been expanded to its ultimate capacity. The Campus Oaks Area equates to 1.05 mgd, maximum daily demand, which has been set-aside in the City's WTP for their ultimate build out. While the ultimate build out of system storage has yet not been reached, the Campus Oaks Area does not have to individually build additional storage, but would pay their fair share of the cost through the Water Connection Fee. It is also assumed that as an infill project, the Water Distribution system conveying water to the site has been sized appropriately so that there are no system wide impacts and the only sizing issues that must be addressed are in the on site distribution system.

The analysis is contained in Appendix 1. The model layout is based on **Figure 4**. As seen from the results, the backbone system proposed complies with the City's design criteria previously present in this Plan.

[1] Letter from Kelye McKinney, Assistant Director of Environmental Utilities Dated August 27, 2013.

References

Domestic Water and Recycled Water Analysis, April 2015, Morton and Pitalo

City of Roseville Design Standards – Section 8 Domestic Water Supply System Design, January 2013

Appendix A – Domestic Water and Recycled Water Analysis, April 2015, Morton and Pitalo

DOMESTIC WATER AND RECYCLED WATER ANALYSIS

Project: HP Campus Oaks Master Plan
1485 Blue Oaks Blvd
(Roseville, California)
Date: April 13, 2015

1. OBJECTIVE:

A water system flow analysis was conducted to verify the proposed domestic water and recycled water distribution systems for the HP Campus Oaks Master Plan. This is to ensure that the proposed development will have sufficient operating water pressure and that the distribution system operates within the parameters established within the City of Roseville Design Standards.

2. PROJECT DESCRIPTION:

The proposed amendment to the Master Plan, **the Hewlett-Packard|Campus Oaks (HPCO) Master Plan Amendment**, provides for a mixed use community on a 375.7 acre portion of the original Master Plan Area. The HPCO Amendment Area is organized into two physically and functionally integrated sub-areas: the **Hewlett-Packard Campus** accommodating existing and planned light industrial, recreation and related uses; and **Campus Oaks** planned for a new mix of tech/business park, office, commercial, residential, park and recreation, open space and public uses. The system analysis is for the Campus Oaks area based on the proposed uses.

3. WATER DISTRIBUTION SYSTEM MODELING SOFTWARE:

The computer modeling methodologies applied herein incorporate a combination of energy and mass balance iterations including the application of Bernoulli's equation with the Hazen-Williams method for determination of frictional head loss. Directional flow distribution is determined by applying the Hardy-Cross method. Computer software is implemented in modeling the water distribution system and the resulting hydraulic conditions are tabulated. The software utilized in this study was developed by Bentley Inc. under trademark WaterCAD, Version 8.0. The project's water systems were modeled using the layout shown in the master plan exhibits (Appendix-A).

WaterCAD software provides a method for design engineers to construct water distribution models by assembling various virtual hydraulic modeling elements including pipes, reservoirs, tanks, pumps, and valves. The engineer in accordance with the system design, operational criteria, and boundary conditions individually assigns values such as hydraulic grade line, minor losses, ground elevations, friction coefficients, etc. to each of the hydraulic elements in the computer model. These assembled elements create a virtual hydraulic model that may be used to simulate existing or design conditions of a particular water distribution system. Flow demands may be entered in

the model at nodes distributed about the system to simulate effective service conditions that stress the system such as Average-Day (ADD), Max-Day (MDD), and Max-Day (MDD).

The WaterCAD software provides a module for testing fire flow and zone pressures at each node in the model. The fire flow data is sampled at each node. WaterCAD tests each zone by applying the available fire flow at node locations. Nodes are tested to verify that the available fire flow is greater than the total needed fire flow and the calculated residual pressures are above the designated minimum zone pressure. All nodes satisfying the fire flow constraints are labeled as 'true' in the Fire Flow Report, while nodes that fail the fire flow constraints are labeled as 'false'.

4. PARAMETERS / ASSUMPTIONS:

- A fire flow demand of 2,000 gpm was assumed for the HPCO.
- The domestic water average day demand to maximum day demand peaking factor is 2.0 (City of Roseville Section 8-7).
- The recycled water average day demand to maximum day demand peaking factor is 2.55.
- The recycled water maximum day demand to peak hour demand peaking factor is 2.7.
- The recycled water peak hour demand to system flexibility demand peaking factor is 1.5.
- A Hazen-Williams roughness factor (C) of 130 was used in all new and existing water and recycled water pipes (City of Roseville Section 8-12.A.2).
- Domestic average day water system demands were obtained from the "Water System Master Plan for the Hewlett-Packard/Campus Oaks Master Plan" prepared by Municipal Consulting Group, January 2015.
- Recycled water system demands were obtained from Municipal Consulting Group, April 2015.

5. EXISTING SYSTEM FLOW INFORMATION:

The residual max day plus fire flow pressure was calculated by the City of Roseville-Environmental Utilities Department. The results of the Department's computer model analysis are attached in Appendix-B.

- Junction Node F03-105
  - Elevation 140 feet
  - Max Day Pressure 78 psi
  - Residual @ 4,000 GPM 70 psi

6. MODELING APPROACH:

Domestic Water: The source on Foothills Blvd was simulated based on the City's computer model analysis results for Node F03-105. From the model's results, the available head for 4,000 GPM was 70 psi. A starting hydraulic grade of 301.7 feet (140 feet + 70 psi x 2.31) was assigned at Node J-6 as a reservoir.

The max day plus fire flow demand was distributed to all nodes in the fire flow report, as shown on the WaterCAD Water Distribution System Map (Appendix-C).

Recycled Water: The recycled water system was assumed to have 60 psi (as measured from Node J-12. A starting hydraulic grade of 245.6 feet (107 feet + 60 psi x 2.31) was assigned for a reservoir placed at Node J-12. See Appendix-C for recycled water max day demands.

7. SUMMARY OF RESULTS:

The modeling results are shown in Appendix-D in tabular format.

The model results indicate that the proposed domestic water infrastructure meets the minimum design criteria of 20 psi residual system pressure for the required max day plus fire flow demand.

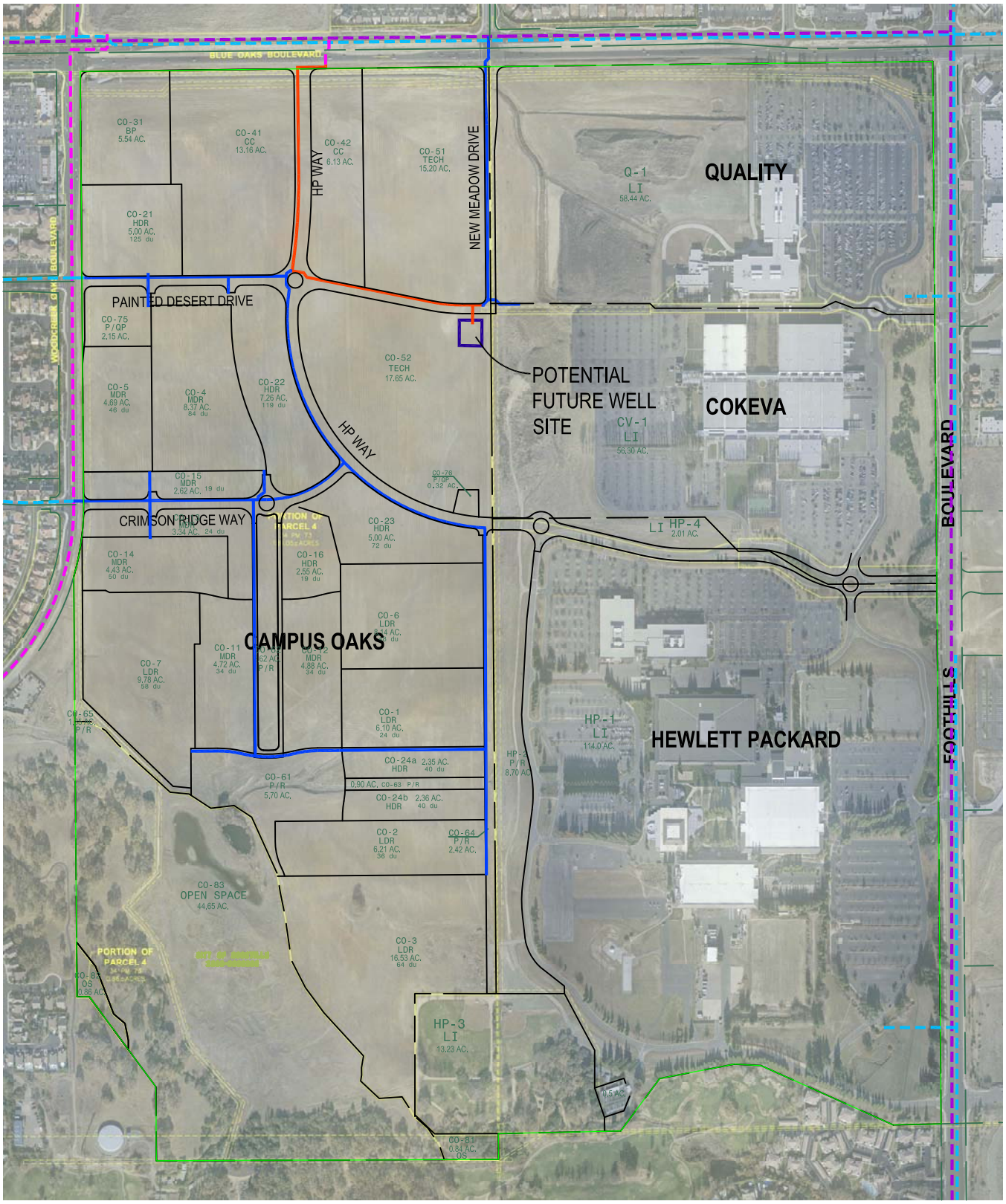
The model results indicate that the proposed recycled onsite water infrastructure meets or exceeds 45.4 psi during the peak hour demand with a 1.5 peaking factor for system flexibility.

8. LIST OF APPENDICES:

Appendix-A:	Water and Recycled Water Master Plan Exhibits
Appendix-B:	City of Roseville-Department of Environmental Utilities Computer Model Analysis Results
Appendix-C:	WaterCAD Water Distribution System Map
Appendix-D:	WaterCAD Modeling Results - Summary Tables

APPENDIX-A

Water and Recycled Water Master Plan Exhibits



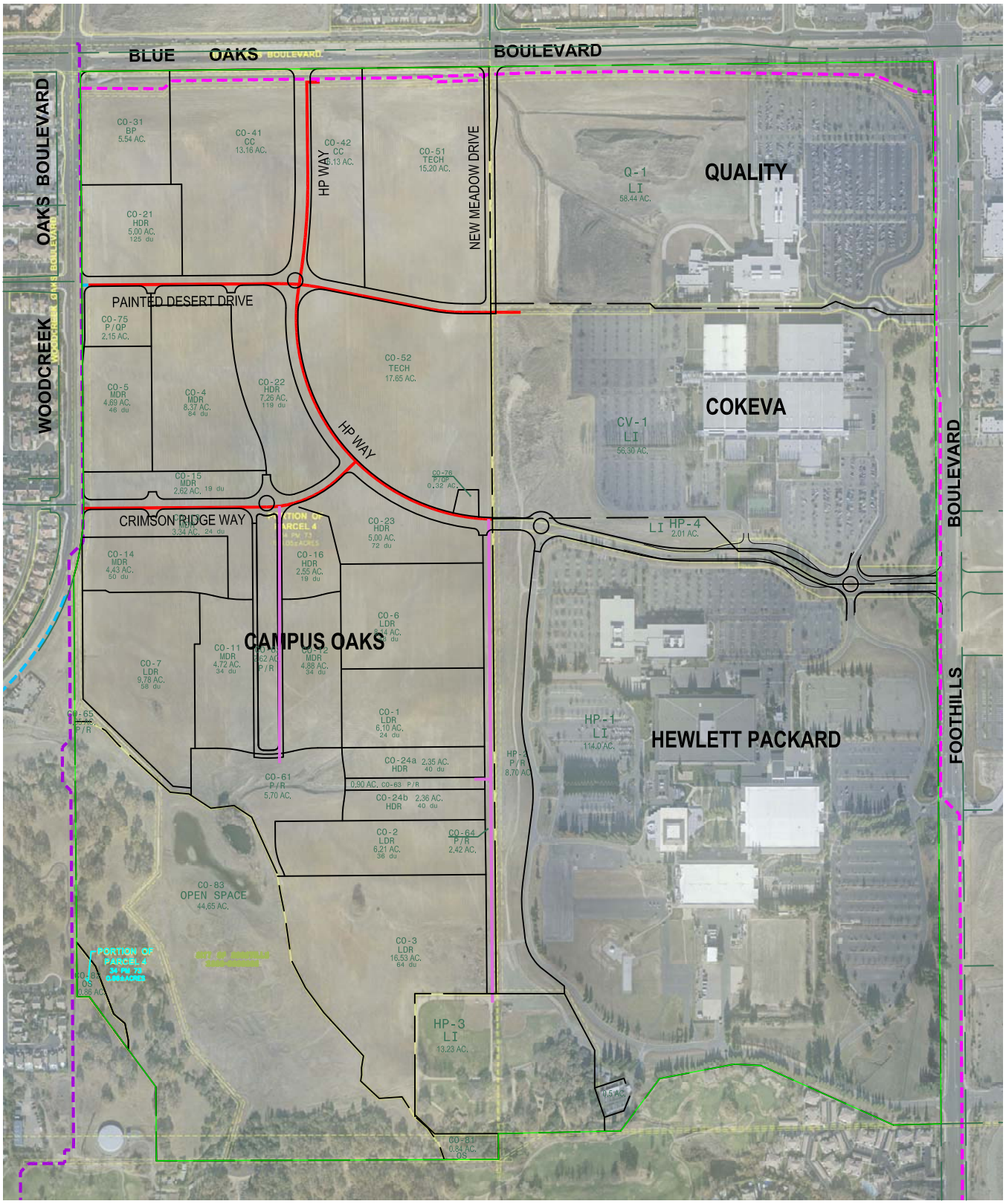
LEGEND

MASTER PLAN BOUNDARY

EXISTING WATER PIPE DIAMETER	PLANNED WATER PIPE DIAMETER
12"	12"
16"	16"
24"	

DOMESTIC WATER MASTER PLAN EXHIBIT

Dwg: X:\2013\13-0076-00\DWG\PLAN\EXHIBITS\MASTER-PLAN\14-WATER-20150316.DWG | Saved: 01-20-15 05:06pm GBARDINI | Plotted: 04-03-15 07:55am MHAUGE



LEGEND

MASTER PLAN BOUNDARY

EXISTING RECYCLED WATER PIPE DIAMETER	PLANNED RECYCLED WATER PIPE DIAMETER
8"	6"
16"	8"
30"	

RECYCLED WATER MASTER PLAN EXHIBIT

Dwg: X:\2013\13-0076-00\DWG\PLAN\EXHIBITS\MASTER-PLAN\15-RECYCLED WATER-20150316.DWG | Saved: 01-20-15 05:08pm GBARDINI | Plotted: 04-03-15 07:54am MHAUGE

APPENDIX-B

City of Roseville-Department of Environmental Utilities Computer Model Analysis Results

January 15, 2013

Name FedEx Distribution Center
Project: 8501 Foothill Blvd
Subject: Fire Flow Request – 4,000 gpm fire flow

Dear Sir / Madam:

This letter is in response to your request of January 2, 2013, regarding available pressures under fire flow conditions. The City has analyzed your requested fire flow of **4,000** gallons per minute using computer network analysis modeling. Our results are noted as follows:

COMPUTER MODEL ANALYSIS

Using a computer analysis model based upon estimated factors present at city build-out, the Environmental Utilities Department - Engineering Division has determined the following pressures will be available on the **24 &16-inch water main running parallel** on Foothill Blvd and Industrial Blvd. Please note the fire flow residual pressure is based upon a maximum day demand scenario with a **4,000-GPM** fire flow demand from the junction node listed below.

Junction Node	***Approx. Elevation (Ft)***	*Average Day (PSI)*	***Maximum Day (PSI)***	*Peak Hour (PSI)*	***Fire Flow Residual (PSI)***
F03-105	**140**		**78**		**70**
F03-045	**135**		**83**		**75**

PLEASE NOTE

As the design professional, you are urged to utilize conservative design criteria when determining private fire service system requirements. The above information is based on the existing public distribution system and known development at this time. All flow test results noted in this report represent available conditions at the time that the test was conducted. Available flow conditions may be lower during peak water demand periods, and at ultimate city build-out of all specific plan areas currently under development. Pursuant to State of California requirements, a minimum static pressure of 35-PSI is required to be maintained within the public water distribution system at all times within the city.

The Fire Department recommends that you utilize the model assumptions found above for maximum day pressure **XX-PSI**, fire flow residual **XX-PSI** and fire flow conditions **4,000-GPM** for all hydraulic calculations for the private fire service water system installed at the project site.

Please contact me within the Fire Prevention Division at (916) 774-58XX, if I can assist you further regarding this matter.

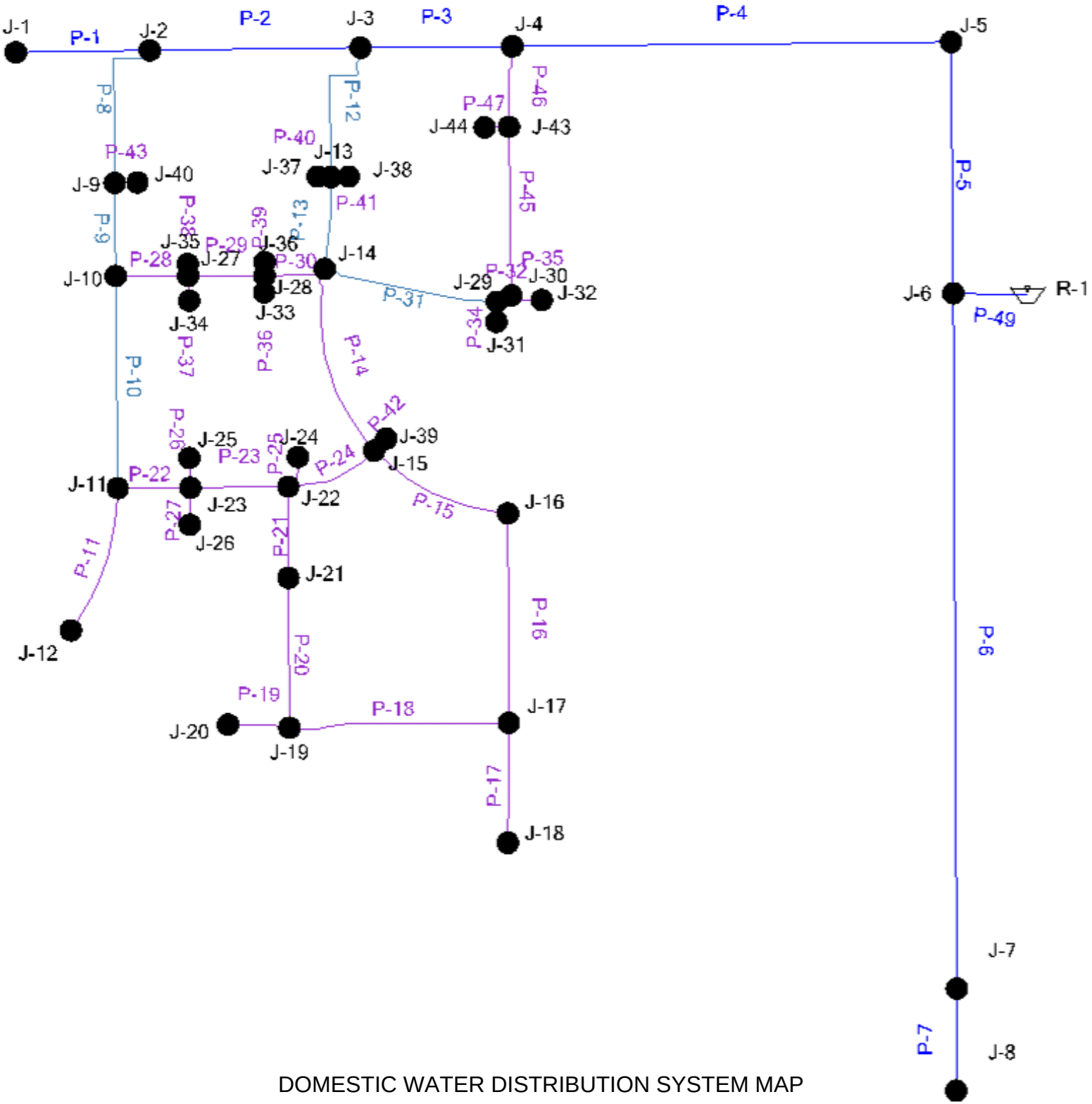
Respectfully,

NAME
TITLE

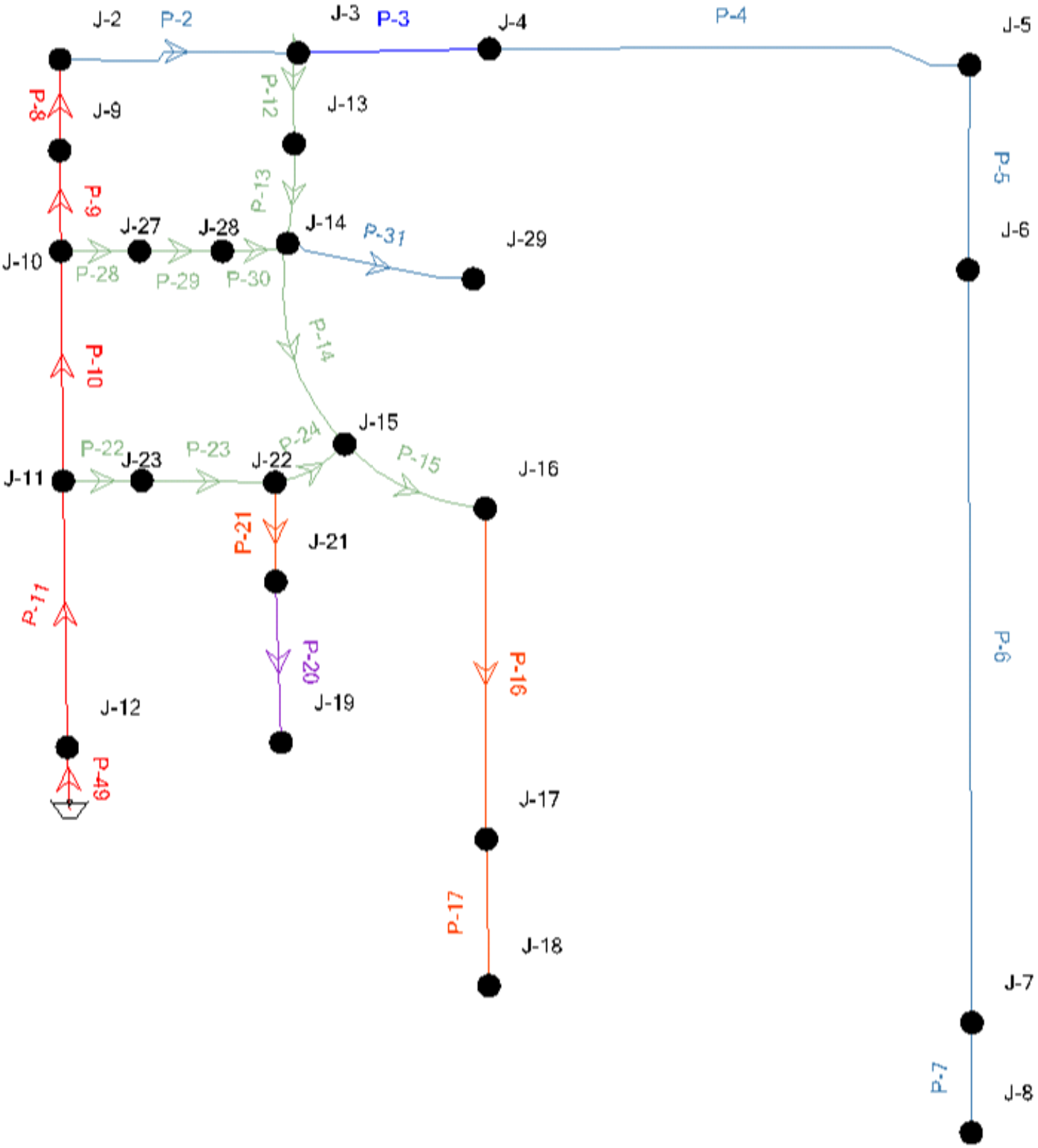
cc:

APPENDIX-C

WaterCAD Water Distribution System Map



DOMESTIC WATER DISTRIBUTION SYSTEM MAP



RECYCLED WATER DISTRIBUTION SYSTEM MAP

APPENDIX-D

WaterCAD Modeling Results – Summary Tables

Label	Scaled Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P-1	686	21: J-1	22: J-2	24	Concrete (steel forms)	130	0	0	0
P-2	1,080	22: J-2	24: J-3	24	Concrete (steel forms)	130	-145.44	0.1	0
P-3	777	24: J-3	26: J-4	24	Concrete (steel forms)	130	-296.29	0.21	0
P-4	2,247	26: J-4	28: J-5	24	Concrete (steel forms)	130	-376.7	0.27	0
P-5	1,288	28: J-5	30: J-6	24	Concrete (steel forms)	130	-376.7	0.27	0
P-6	3,558	30: J-6	32: J-7	24	Concrete (steel forms)	130	233.2	0.17	0
P-7	521	32: J-7	34: J-8	24	Concrete (steel forms)	130	0	0	0
P-8	864	22: J-2	36: J-9	16	PVC	130	145.44	0.23	0
P-9	476	36: J-9	38: J-10	16	PVC	130	127.74	0.2	0
P-10	1,087	38: J-10	40: J-11	16	PVC	130	136.08	0.22	0
P-11	780	40: J-11	42: J-12	12	PVC	130	0	0	0
P-12	809	24: J-3	44: J-13	16	PVC	130	150.85	0.24	0
P-13	473	44: J-13	46: J-14	16	PVC	130	124.75	0.2	0
P-14	1,020	46: J-14	48: J-15	12	PVC	130	133.72	0.38	0
P-15	773	48: J-15	50: J-16	12	PVC	130	86.44	0.25	0
P-16	1,076	50: J-16	52: J-17	12	PVC	130	55.24	0.16	0
P-17	612	52: J-17	54: J-18	12	PVC	130	45.7	0.13	0
P-18	1,127	52: J-17	56: J-19	12	PVC	130	-26.26	0.07	0
P-19	316	56: J-19	58: J-20	12	PVC	130	23.8	0.07	0
P-20	771	56: J-19	60: J-21	12	PVC	130	-74.76	0.21	0
P-21	467	60: J-21	62: J-22	12	PVC	130	-92.26	0.26	0
P-22	372	40: J-11	64: J-23	12	PVC	130	136.08	0.39	0
P-23	502	64: J-23	62: J-22	12	PVC	130	103.48	0.29	0
P-24	492	62: J-22	48: J-15	12	PVC	130	-4.48	0.01	0
P-25	174	62: J-22	68: J-24	12	PVC	130	9.7	0.03	0
P-26	152	64: J-23	70: J-25	12	PVC	130	16.4	0.05	0
P-27	190	64: J-23	72: J-26	12	PVC	130	14.8	0.04	0
P-28	371	38: J-10	74: J-27	12	PVC	130	-8.34	0.02	0
P-29	391	74: J-27	76: J-28	12	PVC	130	-23.44	0.07	0
P-30	318	76: J-28	46: J-14	12	PVC	130	-37.64	0.11	0
P-31	906	46: J-14	79: J-29	16	PVC	130	-53.01	0.08	0

Label	Scaled Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P-32	93	79: J-29	81: J-30	12	PVC	130	-66.71	0.19	0
P-34	103	79: J-29	84: J-31	12	PVC	130	0	0	0
P-35	170	81: J-30	86: J-32	12	PVC	130	0	0	0
P-36	84	76: J-28	88: J-33	12	PVC	130	8.3	0.02	0
P-37	128	74: J-27	90: J-34	12	PVC	130	7.4	0.02	0
P-38	60	74: J-27	92: J-35	12	PVC	130	7.7	0.02	0
P-39	71	76: J-28	94: J-36	12	PVC	130	5.9	0.02	0
P-40	69	44: J-13	96: J-37	12	PVC	130	17.8	0.05	0
P-41	91	44: J-13	98: J-38	12	PVC	130	8.3	0.02	0
P-42	88	48: J-15	100: J-39	12	PVC	130	31.8	0.09	0
P-43	116	36: J-9	102: J-40	12	PVC	130	17.7	0.05	0
P-45	864	81: J-30	107: J-43	12	PVC	130	-66.71	0.19	0
P-46	419	107: J-43	26: J-4	12	PVC	130	-80.41	0.23	0
P-47	125	107: J-43	110: J-44	12	PVC	130	13.7	0.04	0
P-49	382	116: R-1	30: J-6	24	Concrete (steel forms)	130	816.9	0.58	0

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	114	0	301.6	81.2
J-2	114	0	301.6	81.2
J-3	116	0	301.6	80.3
J-4	121	0	301.6	78.1
J-5	122	0	301.7	77.7
J-6	134	207	301.7	72.5
J-7	138	233.2	301.7	70.8
J-8	136	0	301.7	71.7
J-9	114	0	301.6	81.2
J-10	118	0	301.6	79.4
J-11	115	0	301.6	80.7
J-12	107	0	301.6	84.2
J-13	120	0	301.6	78.6
J-14	127	6.4	301.6	75.5
J-15	131	11	301.5	73.8
J-16	136	31.2	301.5	71.6
J-17	122	35.8	301.5	77.7
J-18	124	45.7	301.5	76.8
J-19	115	24.7	301.5	80.7
J-20	116	23.8	301.5	80.3
J-21	122	17.5	301.5	77.7
J-22	128	6	301.5	75.1
J-23	119	1.4	301.6	79
J-24	128	9.7	301.5	75.1
J-25	119	16.4	301.6	79
J-26	119	14.8	301.6	79
J-27	120	0	301.6	78.6
J-28	124	0	301.6	76.8
J-29	125	13.7	301.6	76.4
J-30	125	0	301.6	76.4
J-31	125	0	301.6	76.4
J-32	125	0	301.6	76.4
J-33	124	8.3	301.6	76.8
J-34	120	7.4	301.6	78.6
J-35	120	7.7	301.6	78.6
J-36	124	5.9	301.6	76.8
J-37	120	17.8	301.6	78.6
J-38	120	8.3	301.6	78.6
J-39	131	31.8	301.5	73.8
J-40	114	17.7	301.6	81.2
J-43	122	0	301.6	77.7
J-44	122	13.7	301.6	77.7

Label	Scaled Length	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams	Flow	Velocity	Headloss
P-1	686	21: J-1	22: J-2	24	Concrete (steel forms)	130	0	0	0
P-2	1,080	22: J-2	24: J-3	24	Concrete (steel forms)	130	-290.9	0.21	0
P-3	777	24: J-3	26: J-4	24	Concrete (steel forms)	130	-592.65	0.42	0
P-4	2,247	26: J-4	28: J-5	24	Concrete (steel forms)	130	-753.5	0.53	0
P-5	1,288	28: J-5	30: J-6	24	Concrete (steel forms)	130	-753.5	0.53	0
P-6	3,558	30: J-6	32: J-7	24	Concrete (steel forms)	130	466.3	0.33	0
P-7	521	32: J-7	34: J-8	24	Concrete (steel forms)	130	0	0	0
P-8	864	22: J-2	36: J-9	16	PVC	130	290.9	0.46	0
P-9	476	36: J-9	38: J-10	16	PVC	130	255.6	0.41	0
P-10	1,087	38: J-10	40: J-11	16	PVC	130	272.32	0.43	0
P-11	780	40: J-11	42: J-12	12	PVC	130	0	0	0
P-12	809	24: J-3	44: J-13	16	PVC	130	301.75	0.48	0
P-13	473	44: J-13	46: J-14	16	PVC	130	249.55	0.4	0
P-14	1,020	46: J-14	48: J-15	12	PVC	130	267.58	0.76	0
P-15	773	48: J-15	50: J-16	12	PVC	130	172.84	0.49	0
P-16	1,076	50: J-16	52: J-17	12	PVC	130	110.44	0.31	0
P-17	612	52: J-17	54: J-18	12	PVC	130	91.4	0.26	0
P-18	1,127	52: J-17	56: J-19	12	PVC	130	-52.46	0.15	0
P-19	316	56: J-19	58: J-20	12	PVC	130	47.6	0.14	0
P-20	771	56: J-19	60: J-21	12	PVC	130	-149.46	0.42	0
P-21	467	60: J-21	62: J-22	12	PVC	130	-184.46	0.52	0
P-22	372	40: J-11	64: J-23	12	PVC	130	272.32	0.77	0
P-23	502	64: J-23	62: J-22	12	PVC	130	207.02	0.59	0
P-24	492	62: J-22	48: J-15	12	PVC	130	-9.04	0.03	0
P-25	174	62: J-22	68: J-24	12	PVC	130	19.5	0.06	0
P-26	152	64: J-23	70: J-25	12	PVC	130	32.9	0.09	0
P-27	190	64: J-23	72: J-26	12	PVC	130	29.6	0.08	0
P-28	371	38: J-10	74: J-27	12	PVC	130	-16.72	0.05	0
P-29	391	74: J-27	76: J-28	12	PVC	130	-46.82	0.13	0
P-30	318	76: J-28	46: J-14	12	PVC	130	-75.32	0.21	0
P-31	906	46: J-14	79: J-29	16	PVC	130	-106.05	0.17	0
P-32	93	79: J-29	81: J-30	12	PVC	130	-133.45	0.38	0
P-34	103	79: J-29	84: J-31	12	PVC	130	0	0	0

Label	Scaled Length	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams	Flow	Velocity	Headloss
P-35	170	81: J-30	86: J-32	12	PVC	130	0	0	0
P-36	84	76: J-28	88: J-33	12	PVC	130	16.6	0.05	0
P-37	128	74: J-27	90: J-34	12	PVC	130	14.7	0.04	0
P-38	60	74: J-27	92: J-35	12	PVC	130	15.4	0.04	0
P-39	71	76: J-28	94: J-36	12	PVC	130	11.9	0.03	0
P-40	69	44: J-13	96: J-37	12	PVC	130	35.6	0.1	0
P-41	91	44: J-13	98: J-38	12	PVC	130	16.6	0.05	0
P-42	88	48: J-15	100: J-39	12	PVC	130	63.7	0.18	0
P-43	116	36: J-9	102: J-40	12	PVC	130	35.3	0.1	0
P-45	864	81: J-30	107: J-43	12	PVC	130	-133.45	0.38	0
P-46	419	107: J-43	26: J-4	12	PVC	130	-160.85	0.46	0
P-47	125	107: J-43	110: J-44	12	PVC	130	27.4	0.08	0
P-49	382	116: R-1	30: J-6	24	Concrete (steel forms)	130	1,633.80	1.16	0

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	114	0	301.4	81.1
J-2	114	0	301.4	81.1
J-3	116	0	301.4	80.2
J-4	121	0	301.4	78.1
J-5	122	0	301.6	77.7
J-6	134	414	301.6	72.5
J-7	138	466.3	301.5	70.8
J-8	136	0	301.5	71.6
J-9	114	0	301.3	81.1
J-10	118	0	301.3	79.3
J-11	115	0	301.3	80.6
J-12	107	0	301.3	84
J-13	120	0	301.4	78.5
J-14	127	12.7	301.3	75.4
J-15	131	22	301.1	73.6
J-16	136	62.4	301	71.4
J-17	122	71.5	301	77.4
J-18	124	91.4	301	76.6
J-19	115	49.4	301	80.5
J-20	116	47.6	301	80
J-21	122	35	301.1	77.5
J-22	128	12.1	301.1	74.9
J-23	119	2.8	301.2	78.8
J-24	128	19.5	301.1	74.9
J-25	119	32.9	301.2	78.8
J-26	119	29.6	301.2	78.8
J-27	120	0	301.3	78.5
J-28	124	0	301.3	76.7
J-29	125	27.4	301.3	76.3
J-30	125	0	301.3	76.3
J-31	125	0	301.3	76.3
J-32	125	0	301.3	76.3
J-33	124	16.6	301.3	76.7
J-34	120	14.7	301.3	78.5
J-35	120	15.4	301.3	78.5
J-36	124	11.9	301.3	76.7
J-37	120	35.6	301.4	78.5
J-38	120	16.6	301.4	78.5
J-39	131	63.7	301.1	73.6
J-40	114	35.3	301.3	81.1
J-43	122	0	301.4	77.6
J-44	122	27.4	301.4	77.6

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Pressure (Calculated System Lower Limit) (psi)	Junction w/Minimum Pressure (System)	Is Fire Flow Run Balanced?
J-1	TRUE	2,000.00	2,000.00	3,500.00	20	78.2	68.9	50: J-16	TRUE
J-2	TRUE	2,000.00	2,000.00	3,500.00	20	78.4	68.9	50: J-16	TRUE
J-3	TRUE	2,000.00	2,000.00	3,500.00	20	77.9	69.1	50: J-16	TRUE
J-4	TRUE	2,000.00	2,000.00	3,500.00	20	76.1	69.4	50: J-16	TRUE
J-5	TRUE	2,000.00	2,000.00	3,500.00	20	76.9	70.6	50: J-16	TRUE
J-6	TRUE	2,000.00	2,414.00	3,914.00	20	72.4	70.6	32: J-7	TRUE
J-7	TRUE	2,000.00	2,466.30	3,966.30	20	69	69.8	34: J-8	TRUE
J-8	TRUE	2,000.00	2,000.00	3,500.00	20	69.6	69	32: J-7	TRUE
J-9	TRUE	2,000.00	2,000.00	3,500.00	20	77.4	68.1	50: J-16	TRUE
J-10	TRUE	2,000.00	2,000.00	3,500.00	20	75.3	67.8	50: J-16	TRUE
J-11	TRUE	2,000.00	2,000.00	3,500.00	20	75	66.7	50: J-16	TRUE
J-12	TRUE	2,000.00	2,000.00	3,500.00	20	69.7	66.7	50: J-16	TRUE
J-13	TRUE	2,000.00	2,000.00	3,500.00	20	75.2	68.4	50: J-16	TRUE
J-14	TRUE	2,000.00	2,012.70	3,512.70	20	72	68.1	50: J-16	TRUE
J-15	TRUE	2,000.00	2,022.00	3,522.00	20	65.8	63.7	50: J-16	TRUE
J-16	TRUE	2,000.00	2,062.40	3,562.40	20	59.1	65.5	54: J-18	TRUE
J-17	TRUE	2,000.00	2,071.50	3,571.50	20	62.8	60.9	50: J-16	TRUE
J-18	TRUE	2,000.00	2,091.40	3,591.40	20	54.7	60.9	50: J-16	TRUE
J-19	TRUE	2,000.00	2,049.40	3,549.40	20	66.8	62.2	50: J-16	TRUE
J-20	TRUE	2,000.00	2,047.60	3,547.60	20	62.7	62.2	50: J-16	TRUE
J-21	TRUE	2,000.00	2,035.00	3,535.00	20	66.5	63.2	50: J-16	TRUE
J-22	TRUE	2,000.00	2,012.10	3,512.10	20	67	64.1	50: J-16	TRUE
J-23	TRUE	2,000.00	2,002.80	3,502.80	20	71.8	65.5	50: J-16	TRUE
J-24	TRUE	2,000.00	2,019.50	3,519.50	20	65	64.1	50: J-16	TRUE
J-25	TRUE	2,000.00	2,032.90	3,532.90	20	70.1	65.5	50: J-16	TRUE
J-26	TRUE	2,000.00	2,029.60	3,529.60	20	69.7	65.5	50: J-16	TRUE
J-27	TRUE	2,000.00	2,000.00	3,500.00	20	73.6	68	50: J-16	TRUE
J-28	TRUE	2,000.00	2,000.00	3,500.00	20	72.1	68.2	50: J-16	TRUE
J-29	TRUE	2,000.00	2,027.40	3,527.40	20	72	68.4	50: J-16	TRUE
J-30	TRUE	2,000.00	2,000.00	3,500.00	20	71.8	68.5	50: J-16	TRUE

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual Lower Limit) (psi)	Pressure (Calculated System Lower Limit) (psi)	Junction w/Minimum Pressure (System)	Is Fire Flow Run Balanced?
J-31	TRUE	2,000.00	2,000.00	3,500.00	20	70.9	68.4	50: J-16	TRUE
J-32	TRUE	2,000.00	2,000.00	3,500.00	20	69.9	68.5	50: J-16	TRUE
J-33	TRUE	2,000.00	2,016.60	3,516.60	20	71.1	68.2	50: J-16	TRUE
J-34	TRUE	2,000.00	2,014.70	3,514.70	20	72.1	68	50: J-16	TRUE
J-35	TRUE	2,000.00	2,015.40	3,515.40	20	72.9	68	50: J-16	TRUE
J-36	TRUE	2,000.00	2,011.90	3,511.90	20	71.3	68.2	50: J-16	TRUE
J-37	TRUE	2,000.00	2,035.60	3,535.60	20	74.4	68.4	50: J-16	TRUE
J-38	TRUE	2,000.00	2,016.60	3,516.60	20	74.2	68.4	50: J-16	TRUE
J-39	TRUE	2,000.00	2,063.70	3,563.70	20	64.8	63.7	50: J-16	TRUE
J-40	TRUE	2,000.00	2,035.30	3,535.30	20	76	68.1	50: J-16	TRUE
J-43	TRUE	2,000.00	2,000.00	3,500.00	20	73.4	69	50: J-16	TRUE
J-44	TRUE	2,000.00	2,027.40	3,527.40	20	72	69	50: J-16	TRUE

Flexiblity

Id	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
22	J-2	114	41.41	245.5	56.9
24	J-3	116	73.16	245.4	56
26	J-4	121	0	245.4	53.8
28	J-5	122	0	245.4	53.4
30	J-6	134	0	245.4	48.2
32	J-7	138	0	245.4	46.5
34	J-8	136	0	245.4	47.4
36	J-9	114	0	245.5	56.9
38	J-10	118	49.69	245.5	55.2
40	J-11	115	0	245.6	56.5
42	J-12	107	0	245.6	60
44	J-13	120	0	244.6	53.9
46	J-14	127	128.38	244	50.6
48	J-15	131	70.4	242.8	48.4
50	J-16	136	140.8	241	45.4
52	J-17	122	186.35	235.9	49.3
54	J-18	124	0	235.9	48.4
56	J-19	115	168.41	239.7	53.9
60	J-21	122	0	241.8	51.8
62	J-22	128	0	243	49.8
64	J-23	119	0	244.6	54.4
74	J-27	120	0	245	54.1
76	J-28	124	0	244.4	52.1
79	J-29	125	149.08	243.5	51.3

Flexiblity

Id	Label	Scaled Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
25	P-2	1,151	22: J-2	24: J-3	16	Concrete (steel forms)	130	319.77	0.51	0
27	P-3	907	24: J-3	26: J-4	24	Concrete (steel forms)	130	0	0	0
29	P-4	2,288	26: J-4	28: J-5	16	Concrete (steel forms)	130	0	0	0
31	P-5	969	28: J-5	30: J-6	16	Concrete (steel forms)	130	0	0	0
33	P-6	3,558	30: J-6	32: J-7	16	Concrete (steel forms)	130	0	0	0
35	P-7	521	32: J-7	34: J-8	16	Concrete (steel forms)	130	0	0	0
37	P-8	430	22: J-2	36: J-9	30	PVC	130	-361.18	0.16	0
39	P-9	476	36: J-9	38: J-10	30	PVC	130	-361.18	0.16	0
41	P-10	1,087	38: J-10	40: J-11	30	PVC	130	-665.73	0.3	0
43	P-11	1,259	40: J-11	42: J-12	30	PVC	130	-1,007.68	0.46	0
45	P-12	609	24: J-3	44: J-13	8	PVC	130	246.61	1.57	0.001
47	P-13	473	44: J-13	46: J-14	8	PVC	130	246.61	1.57	0.001
49	P-14	1,045	46: J-14	48: J-15	8	PVC	130	224	1.43	0.001
51	P-15	748	48: J-15	50: J-16	8	PVC	130	327.15	2.09	0.002
53	P-16	1,564	50: J-16	52: J-17	6	PVC	130	186.35	2.11	0.003
55	P-17	693	52: J-17	54: J-18	6	PVC	130	0	0	0
61	P-20	761	56: J-19	60: J-21	6	PVC	130	-168.41	1.91	0.003
63	P-21	469	60: J-21	62: J-22	6	PVC	130	-168.41	1.91	0.003
65	P-22	372	40: J-11	64: J-23	8	PVC	130	341.96	2.18	0.003
66	P-23	629	64: J-23	62: J-22	8	PVC	130	341.96	2.18	0.003
67	P-24	384	62: J-22	48: J-15	8	PVC	130	173.55	1.11	0.001
75	P-28	371	38: J-10	74: J-27	8	PVC	130	254.86	1.63	0.001
77	P-29	391	74: J-27	76: J-28	8	PVC	130	254.86	1.63	0.001
78	P-30	318	76: J-28	46: J-14	8	PVC	130	254.86	1.63	0.001
80	P-31	906	46: J-14	79: J-29	8	PVC	130	149.08	0.95	0.001
121	P-49	296	116: R-1	42: J-12	30	Concrete (steel forms)	130	1,007.68	0.46	0

Max. Day

Id	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
22	J-2	114	10.23	245.6	56.9
24	J-3	116	18.06	245.6	56.1
26	J-4	121	0	245.6	53.9
28	J-5	122	0	245.6	53.5
30	J-6	134	0	245.6	48.3
32	J-7	138	0	245.6	46.5
34	J-8	136	0	245.6	47.4
36	J-9	114	0	245.6	56.9
38	J-10	118	12.27	245.6	55.2
40	J-11	115	0	245.6	56.5
42	J-12	107	0	245.6	60
44	J-13	120	0	245.5	54.3
46	J-14	127	31.7	245.5	51.3
48	J-15	131	17.38	245.4	49.5
50	J-16	136	34.77	245.3	47.3
52	J-17	122	46.01	244.9	53.2
54	J-18	124	0	244.9	52.3
56	J-19	115	41.58	245.2	56.3
60	J-21	122	0	245.3	53.4
62	J-22	128	0	245.4	50.8
64	J-23	119	0	245.5	54.7
74	J-27	120	0	245.6	54.3
76	J-28	124	0	245.5	52.6
79	J-29	125	36.81	245.4	52.1

Max. Day

Id	Label	Scaled Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
25	P-2	1,151	22: J-2	24: J-3	16	Concrete (steel forms)	130	78.95	0.13	0
27	P-3	907	24: J-3	26: J-4	24	Concrete (steel forms)	130	0	0	0
29	P-4	2,288	26: J-4	28: J-5	16	Concrete (steel forms)	130	0	0	0
31	P-5	969	28: J-5	30: J-6	16	Concrete (steel forms)	130	0	0	0
33	P-6	3,558	30: J-6	32: J-7	16	Concrete (steel forms)	130	0	0	0
35	P-7	521	32: J-7	34: J-8	16	Concrete (steel forms)	130	0	0	0
37	P-8	430	22: J-2	36: J-9	30	PVC	130	-89.18	0.04	0
39	P-9	476	36: J-9	38: J-10	30	PVC	130	-89.18	0.04	0
41	P-10	1,087	38: J-10	40: J-11	30	PVC	130	-164.38	0.07	0
43	P-11	1,259	40: J-11	42: J-12	30	PVC	130	-248.81	0.11	0
45	P-12	609	24: J-3	44: J-13	8	PVC	130	60.89	0.39	0
47	P-13	473	44: J-13	46: J-14	8	PVC	130	60.89	0.39	0
49	P-14	1,045	46: J-14	48: J-15	8	PVC	130	55.31	0.35	0
51	P-15	748	48: J-15	50: J-16	8	PVC	130	80.78	0.52	0
53	P-16	1,564	50: J-16	52: J-17	6	PVC	130	46.01	0.52	0
55	P-17	693	52: J-17	54: J-18	6	PVC	130	0	0	0
61	P-20	761	56: J-19	60: J-21	6	PVC	130	-41.58	0.47	0
63	P-21	469	60: J-21	62: J-22	6	PVC	130	-41.58	0.47	0
65	P-22	372	40: J-11	64: J-23	8	PVC	130	84.43	0.54	0
66	P-23	629	64: J-23	62: J-22	8	PVC	130	84.43	0.54	0
67	P-24	384	62: J-22	48: J-15	8	PVC	130	42.85	0.27	0
75	P-28	371	38: J-10	74: J-27	8	PVC	130	62.93	0.4	0
77	P-29	391	74: J-27	76: J-28	8	PVC	130	62.93	0.4	0
78	P-30	318	76: J-28	46: J-14	8	PVC	130	62.93	0.4	0
80	P-31	906	46: J-14	79: J-29	8	PVC	130	36.81	0.23	0
121	P-49	296	116: R-1	42: J-12	30	Concrete (steel forms)	130	248.81	0.11	0

Peak Hour

Id	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
22	J-2	114	27.61	245.6	56.9
24	J-3	116	48.77	245.5	56
26	J-4	121	0	245.5	53.9
28	J-5	122	0	245.5	53.4
30	J-6	134	0	245.5	48.3
32	J-7	138	0	245.5	46.5
34	J-8	136	0	245.5	47.4
36	J-9	114	0	245.6	56.9
38	J-10	118	33.13	245.6	55.2
40	J-11	115	0	245.6	56.5
42	J-12	107	0	245.6	60
44	J-13	120	0	245.1	54.1
46	J-14	127	85.58	244.8	51
48	J-15	131	46.93	244.3	49
50	J-16	136	93.87	243.5	46.5
52	J-17	122	124.24	241	51.5
54	J-18	124	0	241	50.6
56	J-19	115	112.27	242.8	55.3
60	J-21	122	0	243.8	52.7
62	J-22	128	0	244.4	50.4
64	J-23	119	0	245.1	54.6
74	J-27	120	0	245.3	54.2
76	J-28	124	0	245	52.4
79	J-29	125	99.39	244.6	51.7

Peak Hour

Id	Label	Scaled Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
25	P-2	1,151	22: J-2	24: J-3	16	Concrete (steel forms)	130	213.17	0.34	0
27	P-3	907	24: J-3	26: J-4	24	Concrete (steel forms)	130	0	0	0
29	P-4	2,288	26: J-4	28: J-5	16	Concrete (steel forms)	130	0	0	0
31	P-5	969	28: J-5	30: J-6	16	Concrete (steel forms)	130	0	0	0
33	P-6	3,558	30: J-6	32: J-7	16	Concrete (steel forms)	130	0	0	0
35	P-7	521	32: J-7	34: J-8	16	Concrete (steel forms)	130	0	0	0
37	P-8	430	22: J-2	36: J-9	30	PVC	130	-240.78	0.11	0
39	P-9	476	36: J-9	38: J-10	30	PVC	130	-240.78	0.11	0
41	P-10	1,087	38: J-10	40: J-11	30	PVC	130	-443.82	0.2	0
43	P-11	1,259	40: J-11	42: J-12	30	PVC	130	-671.79	0.3	0
45	P-12	609	24: J-3	44: J-13	8	PVC	130	164.4	1.05	0.001
47	P-13	473	44: J-13	46: J-14	8	PVC	130	164.4	1.05	0.001
49	P-14	1,045	46: J-14	48: J-15	8	PVC	130	149.34	0.95	0.001
51	P-15	748	48: J-15	50: J-16	8	PVC	130	218.11	1.39	0.001
53	P-16	1,564	50: J-16	52: J-17	6	PVC	130	124.24	1.41	0.002
55	P-17	693	52: J-17	54: J-18	6	PVC	130	0	0	0
61	P-20	761	56: J-19	60: J-21	6	PVC	130	-112.27	1.27	0.001
63	P-21	469	60: J-21	62: J-22	6	PVC	130	-112.27	1.27	0.001
65	P-22	372	40: J-11	64: J-23	8	PVC	130	227.97	1.46	0.001
66	P-23	629	64: J-23	62: J-22	8	PVC	130	227.97	1.46	0.001
67	P-24	384	62: J-22	48: J-15	8	PVC	130	115.7	0.74	0
75	P-28	371	38: J-10	74: J-27	8	PVC	130	169.9	1.08	0.001
77	P-29	391	74: J-27	76: J-28	8	PVC	130	169.9	1.08	0.001
78	P-30	318	76: J-28	46: J-14	8	PVC	130	169.9	1.08	0.001
80	P-31	906	46: J-14	79: J-29	8	PVC	130	99.39	0.63	0
121	P-49	296	116: R-1	42: J-12	30	Concrete (steel forms)	130	671.79	0.3	0

Average Day

Id	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
22	J-2	114	4.01	245.6	56.9
24	J-3	116	7.08	245.6	56.1
26	J-4	121	0	245.6	53.9
28	J-5	122	0	245.6	53.5
30	J-6	134	0	245.6	48.3
32	J-7	138	0	245.6	46.6
34	J-8	136	0	245.6	47.4
36	J-9	114	0	245.6	56.9
38	J-10	118	4.81	245.6	55.2
40	J-11	115	0	245.6	56.5
42	J-12	107	0	245.6	60
44	J-13	120	0	245.6	54.3
46	J-14	127	12.43	245.6	51.3
48	J-15	131	6.82	245.6	49.6
50	J-16	136	13.63	245.5	47.4
52	J-17	122	18.04	245.5	53.4
54	J-18	124	0	245.5	52.6
56	J-19	115	16.31	245.5	56.5
60	J-21	122	0	245.5	53.5
62	J-22	128	0	245.6	50.9
64	J-23	119	0	245.6	54.8
74	J-27	120	0	245.6	54.3
76	J-28	124	0	245.6	52.6
79	J-29	125	14.44	245.6	52.2

Average Day

Id	Label	Scaled Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
25	P-2	1,151	22: J-2	24: J-3	16	Concrete (steel forms)	130	30.96	0.05	0
27	P-3	907	24: J-3	26: J-4	24	Concrete (steel forms)	130	0	0	0
29	P-4	2,288	26: J-4	28: J-5	16	Concrete (steel forms)	130	0	0	0
31	P-5	969	28: J-5	30: J-6	16	Concrete (steel forms)	130	0	0	0
33	P-6	3,558	30: J-6	32: J-7	16	Concrete (steel forms)	130	0	0	0
35	P-7	521	32: J-7	34: J-8	16	Concrete (steel forms)	130	0	0	0
37	P-8	430	22: J-2	36: J-9	30	PVC	130	-34.97	0.02	0
39	P-9	476	36: J-9	38: J-10	30	PVC	130	-34.97	0.02	0
41	P-10	1,087	38: J-10	40: J-11	30	PVC	130	-64.46	0.03	0
43	P-11	1,259	40: J-11	42: J-12	30	PVC	130	-97.57	0.04	0
45	P-12	609	24: J-3	44: J-13	8	PVC	130	23.88	0.15	0
47	P-13	473	44: J-13	46: J-14	8	PVC	130	23.88	0.15	0
49	P-14	1,045	46: J-14	48: J-15	8	PVC	130	21.69	0.14	0
51	P-15	748	48: J-15	50: J-16	8	PVC	130	31.67	0.2	0
53	P-16	1,564	50: J-16	52: J-17	6	PVC	130	18.04	0.2	0
55	P-17	693	52: J-17	54: J-18	6	PVC	130	0	0	0
61	P-20	761	56: J-19	60: J-21	6	PVC	130	-16.31	0.19	0
63	P-21	469	60: J-21	62: J-22	6	PVC	130	-16.31	0.19	0
65	P-22	372	40: J-11	64: J-23	8	PVC	130	33.11	0.21	0
66	P-23	629	64: J-23	62: J-22	8	PVC	130	33.11	0.21	0
67	P-24	384	62: J-22	48: J-15	8	PVC	130	16.8	0.11	0
75	P-28	371	38: J-10	74: J-27	8	PVC	130	24.68	0.16	0
77	P-29	391	74: J-27	76: J-28	8	PVC	130	24.68	0.16	0
78	P-30	318	76: J-28	46: J-14	8	PVC	130	24.68	0.16	0
80	P-31	906	46: J-14	79: J-29	8	PVC	130	14.44	0.09	0
121	P-49	296	116: R-1	42: J-12	30	Concrete (steel forms)	130	97.57	0.04	0

HEWLETT-PACKARD/CAMPUS OAKS MASTER PLAN

DRAINAGE REPORT

CITY OF ROSEVILLE
PLACER COUNTY

June 11, 2015

SIGNING DATE:_____

mortonpitalo

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1. PROJECT BACKGROUND

The Hewlett-Packard/Roseville Campus Oaks Master Plan (HPCO Master Plan) is located in the City of Roseville, Placer County, California. The HPCO Master Plan site is located south of Blue Oaks Blvd., west of Foothills Blvd., and east of Woodcreek Oaks Blvd. The South Branch of Pleasant Grove Creek and an unnamed tributary to the South Branch of Pleasant Grove Creek, referred to as the HP Tributary, bounds the southern end of the site (see the vicinity map in Appendix A). The easterly portion of the site is currently developed with office / light industrial uses as part of the Hewlett-Packard (HP) Campus sub-area (see the land use plan and open space preserve exhibit in Appendix A for land uses). The western half of the project site is known as the Campus Oaks sub-area and is proposed for residential and commercial development. Onsite drainage improvements for the HPCO Master Plan will ultimately encompass the approximate 490 acre site, consisting of a combination of piped and surface conveyance systems. These conveyance systems discharge drainage through outfalls that drain to the HP Tributary, the South Branch of Pleasant Grove Creek, and the existing drainage pipes within Woodcreek Oaks and Blue Oaks Boulevards eventually drain to Pleasant Grove Creek.

Portions of the project along the South Branch of Pleasant Grove Creek and the HP Tributary are located within the City's regulatory floodplain and FEMA's floodplain. The 100-year floodplain (base flood) is an area, which based on flood records, is subject to inundation from a flood that has a 1 percent chance of occurring in any given year. Floodplain designations have been defined by the City Zoning Ordinance, Federal Emergency Management Agency (FEMA), and City of Roseville's General Plan and Flood Damage Prevention Ordinance. The City and FEMA have restrictions for development in designated floodplains. The base flood elevations, as shown in FEMA Flood Insurance Rate Maps (FIRM) assume development occurring within the floodway fringe. The floodway fringe is the area along the boundary of the floodplain which, if totally obstructed, would not result in more than a one-foot increase in water surface elevation. All areas subject to the City's regulatory floodplain are located within open space parcel(s). See Appendix A for the FEMA FIRM and the City's Nolte Study floodplain and profile.

2. PURPOSE

The purpose of this study is to evaluate the proposed development's drainage infrastructure capability to serve the project at both interim and full build-out, based on the City of Roseville Design Standards, Section 10 Drainage, and the Placer County Stormwater Management Manual and to provide a preliminary evaluation of the site drainage. More detailed evaluation will be provided as detailed construction plans are completed relative to the approval process of specific improvement plan sets. Based on these standards, the 10-year, 25-year,

and 100-year design storms shall be analyzed. At the same time, the proposed on-site drainage infrastructure must stay relatively consistent with the existing drainage patterns, otherwise detention may be required.

3. SITE HYDROLOGY

3.1 PRE-DEVELOPMENT CONDITIONS

Runoff characteristics of the project area are defined by topography, ground slope, vegetative cover, soil types, and the amount of impermeable surface area. The site topography is relatively flat and generally sloping from east to west. Elevations throughout the development area vary from 110 to 140 feet. Existing ground cover in the project site includes impervious surfaces from existing developments, with the remainder composed primarily of natural grass, brush, and oak woodlands. Soils in the project area have low infiltration rates. Impermeable paved areas within and immediately adjacent to the project site include Foothills Boulevard, Woodcreek Oaks Boulevard, Blue Oaks Boulevard, and the existing developed HP Campus sub-area on the eastern half of the project site. Surface water flows primarily towards Pleasant Grove Creek and its tributaries.

Based on the existing topography, the project site is divided up into four major watershed discharge areas. See the existing site drainage shed map in Appendix B for discharge locations and drainage patterns. The following table identifies the major watershed discharge locations.

Table 1 Existing Watershed Discharge Summary

Discharge ID Number	Discharge Location	Approximate Drainage Area (acres)
1	Intersection of Woodcreek Oaks Blvd. & Blue Oaks Blvd.	190.1
2	Intersection of Woodcreek Oaks Blvd. & Crimson Ridge Way	44.1
3	Drainage swale south of Woodcreek Oaks Blvd.	11.6
4	Directly into South Branch of Pleasant Grove Creek (2)	205.7 (1)

(1) Approximate Drainage Area does not include Open Space (CO-81, CO-82, and CO-83)

(2) This discharge occurs over the length of the southern boundary and does not represent any single point of discharge.

- *Drainage Watershed to Discharge Location 1: Intersection of Woodcreek Oaks Blvd. & Blue Oaks Blvd.*

  This watershed consists of both developed and undeveloped areas. The upper reach of the watershed comprises portions of the existing HP Campus sub-area.

These existing developments drain via a network of storm drains to two outfalls along their western edges. At each outfall is an unlined trapezoidal channel that carries drainage to a partially concrete lined (bottom only) trapezoidal channel. This channel collects runoff and carries it parallel to Blue Oaks Blvd. to the west to a culvert crossing at Woodcreek Oaks Blvd. The culvert crossing consists of four 54 inch culverts. Existing storm drain improvements in Blue Oaks Blvd. drain directly into this channel. Existing storm drain improvements in Woodcreek Oaks Blvd. drain directly into the southernmost 54" culvert. Continuing beyond the 54" culverts, the drainage is carried via a trapezoidal channel tributary to Pleasant Grove Creek.

- *Drainage Watershed to Discharge Location 2: Intersection of Woodcreek Oaks Blvd. & Crimson Ridge Way*

  This watershed is undeveloped except for the portion of Woodcreek Oaks Blvd. that drains to the discharge location. The watershed drains to the west and is collected in a trapezoidal channel that carries runoff to the south along Woodcreek Oaks Blvd. to a pipe with a concrete headwall. From here drainage is directed to the west, via a 60" storm drain pipe along Crimson Ridge Way to an outfall to the South Branch of Pleasant Grove Creek.

- *Drainage Watershed to Discharge Location 3: Drainage swale south of Woodcreek Oaks Blvd.*

  This watershed is undeveloped, and drains to the western boundary of the project site, at which point it crosses under an existing undeveloped access road via an 18" culvert. From here, drainage continues to the west via swales to the South Branch of Pleasant Grove Creek.

- *Drainage Watershed to Discharge Location 4: Directly into South Branch of Pleasant Grove Creek*

  This watershed consists of both developed and undeveloped areas. The upper reach of the watershed includes the remaining portion of the existing HP Campus sub-area. This existing development drains via a network of existing storm drains to a 48" storm drain that outfalls into the HP Tributary. As previously noted, this drainage discharge occurs along the length of the southern boundary, and does not represent any single point of discharge.

3.2 POST-DEVELOPMENT CONDITIONS

The future development of the proposed 2015 HPCO Master Plan will consist of a combination of residential, commercial, parks, open space, and public use areas. The residential land use will vary from Low Density Residential (LDR) and Medium Density Residential (MDR), to High Density Residential (HDR). The commercial land use will vary from professional office, commercial, and

tech/business parks, to light industrial. See the proposed land use plan in Appendix A.

The following table summarizes the proposed land uses within the HPCO Master Plan.

Table 2 Summary of HPMP Land Uses

Land Use	Approximate Area (acres)	% of Project
LDR	46.8	9.5%
MDR	35.6	7.2%
HDR	21.9	4.5%
Sub Total Residential	**104.3**	**21.2%**
Professional Office	5.5	1.1%
Commercial	19.3	3.9%
Tech/Business Park	32.9	6.7%
Light Industrial	244.0	49.6%
Sub Total Commercial	**301.7**	**61.4%**
Parks and Open Space	68.0	13.8%
Public (Fire Station, Well Site)	2.5	0.5%
Roads	15.2	3.1%
Sub Total Parks, Open Space, Public Uses and Roads	**85.7**	**17.4%**
Total HPCO Master Plan	**491.7**	**100%**

The northern portion of the Campus Oaks sub-area will be predominately commercial with some MDR and HDR, while the southern portion of the sub-area plan will be a variety of residential and open space.

The proposed main-line drainage system and design storm flow rates at select nodes are shown on the accompanying post-development drainage shed map in Appendix B. The map displays the pre-developed topography and compares the proposed HPCO Master Plan shed limits with the existing sheds.

The City of Roseville has stated that as long as the HPCO Master Plan can demonstrate that runoff from the property does not exceed the flow rates shown on the North Roseville Specific Plan Area (NRSPA) Phase 1 Drainage Shed Map (December 1997) or into the previously analyzed and constructed storm drain system(s), then storm water detention will not be required.

These total areas were compared with the NRSPA Drainage Shed Map. As a comparison the following table identifies the difference between the NRSPA and HPCO Master Plan shed maps.

Table 3a Comparison between NRSPA and HPCO Master Plan drainage shed areas

Outfall Location	NRSPA Node/ Area (acres)	HPCO Master Plan Existing (acres)	HPCO Master Plan Proposed (acres)	Difference NRSPA & HPCO Master Plan Proposed (acres)
1	BO-A6/ 219.1	190.1	196.2	-22.9
2	WCS-B7/ 44.6	44.1	34.3	-10.3
3	OS-A1/ 11.6	11.6	0.8	-10.8
4	N/A (1)	205.7	216.2	N/A (1)

Table 3b Comparison between NRSPA and HPCO Master Plan flow rates

Outfall Location	NRSPA 10-Year Flow (cfs)	HPCO Master Plan 10-Year Flow (cfs)	Difference NRSPA & HPCO Master Plan 10-Year (cfs)	NRSPA 100-Year Flow (cfs)	HPCO Master Plan 100-Year Flow (cfs)	Difference NRSPA & HPCO Master Plan 100-Year (cfs)
1	185.3	154.5	-30.8	304.7	251.5	-53.2
2	62.0	45.9	-16.1	99.3	34.3	-65.0
3	19.3	1.4	-17.9	31.0	2.0	-29.0

(1) The NRSPA does not identify shed areas and flows for the southern onsite shed that drains directly into the South Branch of Pleasant Grove Creek

The City has also stated that drainage that is tributary to the South Branch of Pleasant Grove Creek should be studied to determine if the proposed project increases flows in it, thereby affecting the floodplain limits along the Creek. If the proposed project increases flows to the South Branch of Pleasant Grove Creek and increases the floodplain limits, on-site detention might be an alternative to potentially modifying the regulatory floodplain within the area downstream of the project. Outfall locations 3 and 4 both drain directly into the South Branch of Pleasant Grove Creek and the HP Tributary. The combined outfall area is approximately 217 acres, which includes approximately 129.5 acres from the existing HP Campus in the eastern half of the project site. The following table

identifies the pre- and post-construction peak flow rates from the new developed areas in the HPCO Master Plan. Note flows from the existing HP Campus sub-area are not included in the table.

Table 4 Comparison of Pre- and Post-Development Peak Flow Rates at Outfall Locations 3 and 4

Tributary Water Sheds	Area (acres)	10-Year Peak (cfs)	25-Year Peak (cfs)	100-Year Peak (cfs)
Pre-Development				
C07, C08, C10, C11, C12, C13, C14	87.7	95.2	126.0	156.9
Post-Development				
Shed II, Sheds I1-I7, Sheds J0-J20, Sheds K1-K7, Sheds L1-L6	86.3	94.1	123.3	152.4

Based on the proposed storm drain routing, the post-development peak flow rates are slightly less than the pre-development peak flow rates measured at outfall locations 3 and 4. Therefore detention will not be required for flows entering the South Branch of Pleasant Grove Creek

3.3 VOLUMETRIC CRITERIA

Approximately half of Roseville's land area ultimately drains into Pleasant Grove Creek, which eventually flows west through Sutter County. Sutter County has opposed increases in storm water runoff and water surface elevations caused by upstream development. The Reason Farms Drainage Plan was established to mitigate the increases in storm water runoff and water surface elevations. Two retention basins, which will be constructed offsite within the old Reason Farms property, are ultimately planned to mitigate this issue. To pay for the basins, the HPCO Master Plan project proponents shall pay a drainage impact fee into the Reason Farms Drainage Plan on a per lot drainage impact fee for the mitigation.

The following table quantifies the volumetric storage mitigation required for the project by land use type. The information is located within the 2006 Pleasant Grove/Curry Creek Watershed Mitigation Fee report.

Table 5 Volumetric Summary (Campus Oaks)

Land Use Type	Land Use Description	% Impervious	Type "D" Soil Impact Rate (AF/AC)	Land Use Area (AC)	Land Use Impact (AC-FT)
LDR	Low Density Residential	40	0.072	46.76	3.37
MDR	Medium Density Residential	50	0.126	35.6	4.49
HDR	High Density Residential	60	0.206	21.97	4.53
COM	Commercial	70	0.233	57.68	13.44
Park	Park	5	-0.115	12.99	-1.49
PQP	Public/Quasi Public	50	0.126	2.47	0.31
Road	Roadways	85	0.313	10.71	3.35
UR	Urban Reserve	2	0	N/A	0
OS	Open Space	2	0	46.35	0
				Total=	28.0

3.3 PROJECT PHASING

The overall project will be divided into several development phases. A preliminary grading plan which was submitted with the Tentative Map application, has been included in Appendix A for reference. The following describe each of the phases currently under design that will occur with respect to drainage:

3.3.1 New Meadow Drive and Blue Oaks Blvd.: The following drainage improvements will occur in this phase:

New Meadow and Blue Oaks improvements will widen the southern half of Blue Oaks Blvd. New curb, gutter and sidewalk will be installed, along with new/relocated drainage inlets, which will collect road drainage within an existing storm drain system. The drainage from the road drainage system will drain directly into the existing drainage canal, which parallels Blue Oaks Blvd. on the south side.

One 30" storm drain main line will be constructed in New Meadow Drive from the discharge location in the drainage canal south to the intersection of Painted Desert and New Meadow Drives. Drainage inlets will be placed along New Meadow Drive to capture road drainage.

3.3.2 Painted Desert Drive: The following drainage improvements will occur in this phase:

A 24”-30” storm drain main line will be constructed in Painted Desert Drive from a storm drain manhole located within Woodcreek Oaks Blvd. east to approximate road Sta. 18+26. Drainage inlets will be placed along Painted Desert Drive to capture road drainage. Storm drain stubs will be placed to collect drainage from the lots adjacent on the north and south sides of Painted Desert Drive.

A 12”-18” storm drain main line will be constructed in Painted Desert Drive from a storm drain manhole located within the intersection of HP Way (future) and Painted Desert Drive east to approximate road Sta. 26+50. Drainage inlets will be placed along Painted Desert Drive to capture road drainage. Storm drain stubs will be placed to collect drainage from the lots adjacent on the south side of Painted Desert Drive.

3.3.3 Woodcreek Oaks Blvd.: The following drainage improvements will occur in this phase:

North: A 30” storm drain main line will be constructed in Woodcreek Oaks Blvd. from a storm drain manhole located at the intersection of Woodcreek Oaks Blvd. and Painted Desert Drive north approximately 370 feet to an existing storm drain manhole at road Sta. 22+60. An existing 30” storm drain flows north along Woodcreek Oaks Blvd. and ties into the southernmost (of four) 54” culvert, directly south of the intersection with Blue Oaks Blvd. The western half of Woodcreek Oaks Blvd. is fully constructed with full width improvements including curb, gutter and sidewalk. The eastern half of Woodcreek Oaks Blvd. is being widened by the Woodcreek Oaks Blvd. improvement plans. New drainage inlets will be placed along the eastern side of Woodcreek Oaks Blvd. to capture road drainage. Storm drain stubs will be placed to collect drainage from the lots adjacent on the east side of Woodcreek Oaks Blvd.

South: A high point in Woodcreek Oaks Blvd. at approximate Sta. 161+39 separates the northern and southern sheds. A 36” storm drain will be constructed in Woodcreek Oaks Blvd. from an existing storm drain manhole located across from existing Crimson Ridge Way to a 36” storm drain stub which will collect onsite drainage at approximate Sta. 56+50. An existing 60” storm drain stub will be placed to the east to collect drainage from the proposed Crimson Ridge Way.

3.3.4 HP Way: The following drainage improvements will occur in this phase:

North: A 36” storm drain main line will be constructed in HP Way from the intersection with Blue Oaks Blvd., south to the intersection with Painted Desert Drive. From this location, a 12” storm drain line will extend south along HP Way approximately 640 feet, and an 18” storm drain pipe from the Painted Desert Drive improvements will tie into the HP Way drainage system from the east. Drainage inlets and storm drain stubs will be placed along HP Way to capture road and site drainage.

A new drainage crossing of the channel that parallels the south side of Blue Oaks Blvd. and HP Way will be constructed. The crossing was analyzed utilizing the Federal Highway Administration's HY-8 (version 7.30) culvert modeling program, and was sized to convey the 100-year design storm. The 100-year flow rate at the crossing is approximately 230 cfs (a total contributing watershed of 162.8 acres, and a response time of 30.7 minutes). A reinforced concrete double box culvert (minimum size of 3.5 feet rise by 6 feet span per opening), with tapered wing walls, shall be constructed at the crossing to convey the design storm. See Appendix F for sizing calculations.

Central: A 30" storm drain main line will be constructed in HP Way from Sta. 35+00, southeast to a manhole at Sta. 38+07. Drainage inlets and a storm drain stub will be placed to capture road and site drainage. An 18" storm drain line will be constructed in HP Way from Sta. 43+58, northwest to the manhole at Sta. 38+07. The drainage for the 18" line will intercept and redirect drainage that currently drains into the private, on-site HP campus storm drain system. From the manhole at Sta. 38+07, a 30" storm drain main line will be constructed south, cross county along the alignment of a future roadway, and temporarily discharge to a drainage channel which will daylight into an existing swale. As the HPCO site develops to the south, the temporary daylight to ditch will be removed, and drainage from HP Way will be directed along new road alignments.

HP Campus. The HP Campus will be collected and piped through the HPCO site. The Campus' drainage will not be comingled with the HPCO's drainage, and will ultimately discharge at the existing location upstream of the existing water quality basin.

Southeast: The southeastern end of HP Way terminates at the existing signalized intersection of the HP driveway and Foothills Blvd. The proposed HP Way improvements will modify the existing HP driveway's road and storm drain improvements. Existing drainage inlets will be relocated to line up with the proposed HP Way. Proposed drainage sheds to each inlet will remain generally unchanged.

3.3.5 Future Phases within the South Shed: The following drainage improvements will occur in future phases in the south shed:

Storm drain mains will be constructed within Crimson Ridge Way, also within the smaller local roads in the development. Storm drain pipe sizes and alignments will be finalized as site specific improvement plans are developed. The South Shed area will consist predominately of residential land uses ranging from LDR to HDR. Some commercial land use will be north of HP Way. Open Space and Parks will also be located within the South Shed.

4. HYDROLOGIC ANALYSIS

4.1 UNIT PEAK DISCHARGE METHOD

The City of Roseville references the Placer County Flood Control and Water Conservation District's Stormwater Management Manual (SWMM) for selection of an acceptable method for determination of runoff quantities for the 10-, 25-, and 100-year peak discharges. The SWMM allows for the Unit Peak Discharge method which is based on the relationship between the characteristic watershed response time and peak flow per unit area from precipitation patterns typical for the region. This method applies to watersheds less than 200 acres. Since the project's watersheds are less than 200 acres, the Unit Peak Discharge Method will be used. Note that Discharge Location 4's watershed is slightly greater than 200 acres; however, it discharges in several locations to the South Branch of Pleasant Grove Creek. Because no single developed watershed is greater than 200 acres, the Unit Peak Discharge method will be used.

To determine the peak flows (Qp) the response time (t_r) of each watershed is required. It is determined from the sum of overland sheet flow and collector flow (i.e. flow gutters, swales, etc.), from the most hydraulic remote location in the watershed to the point of interest. Since specific development plans for the individual parcels have not been designed at the time of this study, assumptions were made to estimate overland and collector flow lengths. The initial response times at the various sheds were estimated based on the known topography and proposed land uses, and are included in the Appendices.

Overland response times were estimated from the following equation (Equation 10-2 from the City of Roseville Section 10 Drainage design standards):

$$t_{ro} = \frac{0.355(nL)^{0.6}}{S^{0.03}}$$

Where: t_{ro} = overland response time (minutes)
n = Manning's roughness coefficient (From Table 10-2 from the City of Roseville Section 10 Drainage design standards
L = flow length (feet)
s = slope of surface (feet/feet)

Collector response times were estimated from the following equation (Equation 5-4 from the Placer County Stormwater Management Manual):

$$t_{rc} = \frac{0.00735Ln^{0.75}(1+Z^2)^{0.25}}{S^{0.375}(A_cZ)^{0.25}}$$

Where: t_{rc} = collector response time (minutes)

n = Manning's roughness coefficient (From Table 10-2 from the City of Roseville Section 10 Drainage design standards)
L = flow length (feet)
s = slope of surface (feet/feet)
Z = side slope (horizontal/vertical)
A_c = contributing area, acres

Unit peak discharge is computed from the response time from the following equation (Equation 10-3 from the City of Roseville Section 10 Drainage design standards):

$$q_u = c_o t_r^{C1}$$

Where: qu = peak unadjusted discharge (cfs/acre)
Tr = tro + trc
C_0, C_1 = coefficients from Table 10-4 from the City of Roseville Section 10 Drainage design standards

The amount of infiltration throughout the site was determined using the City of Roseville Drainage Standards Table 10-5. Soils in the watersheds were assumed to be located in Hydrologic Soils Group D. Group D soils have a high runoff potential with a slow infiltration rate when thoroughly wetted. The HPCO Master Plan's proposed improvements include a combination of land uses. The land uses will have a combination of residential and commercial landscaping areas with an infiltration rate of 0.12 inch/hour, and paved and roof areas with an infiltration rate 0.02 inch/hour. Open spaces are assumed to have a good quality of cover, with an infiltration rate of 0.09 inch/hour.

The effect of infiltration is reflected in the infiltration factor F_i. The following equation defines the infiltration factor (Equation 10-4 from the City of Roseville Section 10 Drainage design standards):

$$F_i = 1.7\ I$$

Where: F_i = infiltration factor (cfs/acre)
I = infiltration rate (inches/hour)

The following table identifies each proposed land use, the percent of pervious area in each land use, a composite infiltration rate based on the land use, and the infiltration factor for each land use.

Table 6 Summary of Percent of Pervious Area and Infiltration Rates for Land Uses

Land Use	Percent of Pervious Area	Composite Infiltration Rate (inch/hour)	Infiltration Factor, F_i (cfs/acre)
LDR	50%	0.07	0.12
MDR	40%	0.06	0.10
HDR	35%	0.06	0.09
Professional Office	15%	0.04	0.06
Commercial	15%	0.04	0.06
Tech/Business Park	15%	0.04	0.06
Light Industrial	28%	0.05	0.08
Parks and Open Space	100%	0.09	0.15
Public (Fire Station and Well Site)	15%	0.04	0.06
Roads	5%	0.03	0.04

Since the effects of the infiltration factor and percent pervious area are negligible in the final peak flow rate calculations, an average value was assumed for all calculations. An average percent of pervious area of 30%, and an average infiltration factor of 0.08 were used in the peak flow rate calculations located in the appendices.

The peak flow rate is determined from the following equation (Equation 10-5 from the City of Roseville Section 10 Drainage design standards):

$$Q_p = A\ (q_u - pFi)$$

Where: Q_p = peak flow (cfs)
A = Total water shed area (acres)
q_u = unit peak unadjusted runoff (cfs/acre)
F_i = Infiltration factor (cfs/acre)
P = percent of pervious area (%)

The following procedures shall be used in determination of design runoff:

1. Determine the typical pervious and connected impervious flow paths with the longest response time.
2. Determine the total response time for the shed being analyzed combining the overland flow elements and their common collector.
3. Determine the unit peak unadjusted runoff (q_u) for the shed area using Equation 10-3.
4. Determine the pervious infiltration factor using Equation 10-4.
5. Complete the total peak flow using Equation 10-5.

See Appendices for hydrologic modeling calculations and results for the 10-, 25-, and 100-year storm events, for each phase of development.

5. HYDRAULIC ANALYSIS

5.1 PIPE ANALYSIS

Storm drainage flows and hydraulic grade lines (HGLs) for the 10-, 25-, and 100-year storms were modeled in accordance with the criteria set forth in Section 10 of the City of Roseville's Improvement Standards. Each node in the calculations relate to each manhole and inlet of the drainage system. The Peak Flows (Qp) and HGLs at each node were calculated by determining the Response Times (Tr), the Unit Peak Discharges (q), the Infiltration Factors (Fi), and Pervious Areas (CA) per the City of Roseville's Improvement Standards. See Appendices for calculations.

The rational method calculates the Peak Flows (Qp) as functions of the time of concentration throughout the system. These values are used in the sizing of the system. A "Local" Peak Flow value calculates the isolated flow entering each individual inlet from the streets. This value is used to analyze the capacity of each inlet at the grates. Per the City's request, the "Cumulative" Peak Flow, which is the sum of the Local Peak Flows, is shown for information only. See enlarged northern shed map in Appendix B.

The City's drainage design standards require that the HGL for the 10-year discharge be a minimum of one foot below all inlet grates, manhole covers, and all other drainage structures in the system. The HGL shall be shown on the plans when it is above the top of the pipe.

The Manning's equation shall be used to compute capacities of all open and closed conduits. A minimum "n" value shall be 0.015 for pipes. The minimum velocity in closed conduits shall be 2 feet per second, with a maximum velocity of 12 feet per second. Velocities shall be based on full flow conditions.

5.2 DRAINAGE INLET CAPACITIES

The capacity of the inlets at the grates was determined using the local peak flows. The depth of flow at the gutter flowline of the inlets was estimated using the Flow Capacity for Type "C" Grates Chart DR-2 in the City of Roseville's Improvement Standards. The flow capacity is compared to the local peak flow to determine if double inlets may be required. See Appendices for design storm peak flow rate and depth of flow at sag points at each inlet.

Streets are allowed to convey runoff from storm events larger than the 10-year storm. The following summarizes the allowable street inundation and is based on Table 10-6 in the City of Roseville Section 10 Drainage design standards.

Collector: At continuous grade, uphill and downhill

- 10-Year Storm: Traveled way remains clear and does not carry storm water.
- 25-Year Storm: Maximum depth at gutter flow line shall not exceed top back of curb or max of 6 inches.
- 100-Year Storm: Storm water flow is contained within the right-of-way. The center 12 feet of roadway shall remain clear of storm water.

Collector: At Sag Points

- 10-Year Storm: Storm water elevation does not exceed top back of curb or sidewalk. Maximum depth in travel way is 6 inches. Centerline shall be dry.
- 25-Year Storm: Storm water elevation does not exceed 4" above the top back of curb. Maximum depth in traveled way is 6 inches.
- 100-Year Storm: Storm water flow is contained within the right-of-way. The center 12 feet of roadway shall remain clear of storm water.

Arterial: At continuous grade, uphill and downhill, or at sag points.

- 100-Year Storm: All travel lanes are clear of storm water flow. Bike lanes are allowed to be inundated. Storm flow contained within the right-of-way.

Both Blue Oaks Boulevard and Woodcreek Oaks Boulevard are arterial roadways, and Painted Desert Drive, Crimson Way, Meadow Drive, and HP-Way are considered collectors.

For collectors, based on the City's requirements listed above, for the 10 year storm event, at sag locations, the maximum allowable depth from gutter flow line to HGL for the 10-year storm event is 6 inches. For continuous grades, the traveled way shall remain open. It is assumed the traveled way is 12 feet wide (as measured on the half width). The following table identifies half width street capacity while maintaining 12 feet of traveled way.

Table 7 Half Width Collector Street Capacity based on City Design Standards (Table 10-6)

Maximum 10-year Flow Rate (1)	Street Longitudinal Slope (%)					
	0.25	0.50	0.75	1.0	1.25	1.5
	1.6cfs	2.3 cfs	2.8 cfs	3.3 cfs	3.6 cfs	4.0 cfs

(1) Maximum 10-year flow rate to maintain 12 feet of traveled way.

5.3 OVERLAND RELEASE

An overland release map has been prepared which identifies the routes the 100-year peak flood will take assuming no underground piping is available (drainage inlets are 100% plugged) within the streets of the HPMP (see Appendix B). The drainage conveyances under Woodcreek Oaks Blvd. and HP Way were assumed unblocked. Drain Inlet capacity analysis will be required to ensure overland flows can be conveyed beneath Woodcreek Oaks Blvd.

6. STORMWATER MANAGEMENT PLAN

This section will describe the preliminary Stormwater Management Plan (SWMP) for the HPCO Master Plan. This preliminary SWMP will describe each of the drainage management areas (DMAs) for the project. The DMAs will be further divided by the underlying land use of each area. Subsequent preliminary SWMP's will be developed with future entitlement requests with final SWMP's being approved prior to the approval of final construction plans to demonstrate conformance with the objectives of the State MS4 permit. The following design measures are discussed for the identified DMAs.

Final water quality design standards shall comply with the then current adopted MS4 permit and the then applicable City Storm Water Design Manual.

The SWMP will follow the City's MS4 requirements which follow the following requirements:

- Site Assessment
- Source Control
- Required Treatment (volume and/or flow based)

The intent of the SWMP will be to provide a "treatment train" that will fully capture the 85th percentile 24 hour storm. An appropriate runoff reduction calculator will be used to demonstrate the effectiveness of the storm water elements being prescribed. In the event the LID design measures do not fully address storm water management, additional storm water treatment strategies will be required to address Hydromodification. These can be either flow based or volume based BMP's in the form of bio-retention basins or detention basins. Once 100% capture is met both the LID and Hydromodification requirements of the MS4 permit are complied with.

Refer to Exhibit WQ1 in Appendix F for the locations of each DMA and anticipated site design measures associated with each DMA based on a preliminary assessment. The BMPs identified may change with the final design, but shall be in accordance with the City of Roseville requirements.

6.1 WATER QUALITY

Water Quality Flow Rate

Sizing of flow based treatment control measures (vegetated swales) shall be used with the Rational Formula. The water quality flow rate is determined as follows:

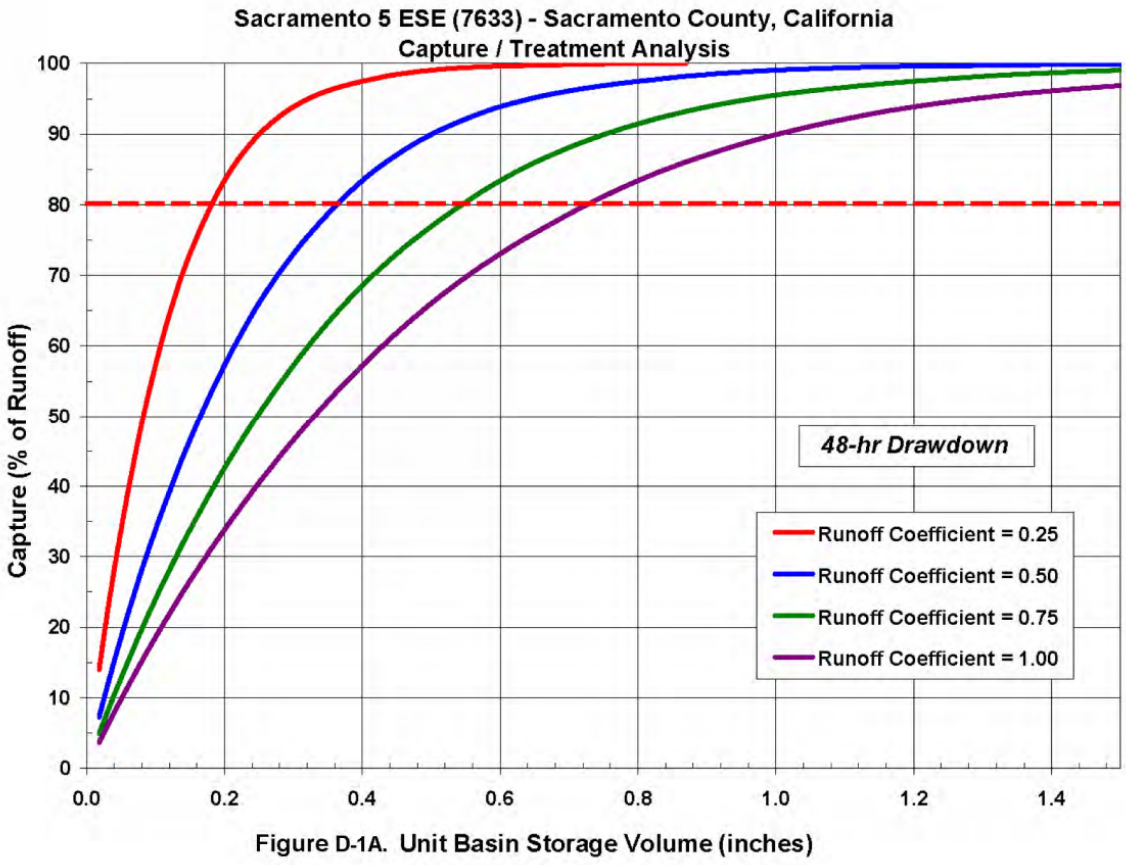
$$WQF = CIA$$

Where: WQF = Water Quality Flow Rate (cfs)
I = rain intensity (inches/hour). For Roseville I = 0.20 inches/hour
A = Drainage Area (acres)
C = Rational Runoff Coefficient

Water Quality Volume

Sizing of volume based treatment control measures (water quality basins) shall follow the Roseville Volume Based Design Method. The volume based control measures shall be designed to capture and treat runoff equal to 80 percent of the volume of annual runoff, as determined by the methodology set forth in the California BMP Handbook. The following figure identifies the 48-hour drawdown curve based on various runoff coefficients.

Figure 1 48-hour Drawdown Curve



Based on the watershed's composite runoff coefficient, and an 80% Capture of Runoff (dashed redline in the above figure), the Unit Basin Storage Volume can be determined. Multiplying the drainage shed area by the Unit Basin Storage Volume will provide the design water quality volume (WQV).

For dry-extended detention basin designs, 75% of the WQV must be released within a minimum of 24 hours, while the remaining 100% of the WQV must be released within 48 hours.

The following details general design criteria for each of the anticipated water quality systems.

Vegetated Swales Design Criteria:

- Tributary Drainage Area: Less than or equal to 10 acres
- Water Quality Design Flow: WQF design requirements.
- Roughness Coefficient, n: 0.2
- Minimum contact time: 7 minutes
- Minimum Bottom Width: 2 feet
- Maximum Bottom Width: 10 feet

- Maximum Side Slopes: 3:1
- Longitudinal Slope: 0.5-2.5%
- Maximum depth of flow: 4 inches or 1 inch below top of vegetation whichever is less
- Maximum design flow velocity: 1 feet/second

Water Quality Basins Design Criteria:

- Tributary Drainage Area: Typically greater than 20 acres
- Design Volume: WQV for dry basin
- Maximum Drawdown Time: 48 hours
- Discharge: Release 75% of WQV in a minimum of 24 hours, 100% of WQV within 48 hours
- Basin Shape: Length x 3 Times Width (minimum)
- Side Slopes: 3:1 or flatter
- Embankment Side Slope 4:1 or flatter
- Longitudinal Bottom Slope: 2% in dry basins
- Basin Freeboard: 1 foot
- Maximum Side Slopes: 3:1

Micro-Bio Retention Design Criteria:

- Tributary Drainage Area: Typically less than 5 acres
- Design Volume: WQV for dry basin
- Maximum Drawdown Time: 48 hours
- Basin Shape: Length x 3 Times Width (minimum)
- Side Slopes: 3:1 or flatter
- Embankment Side Slope 4:1 or flatter
- Longitudinal Bottom Slope: 2% in dry basins
- Basin Freeboard: 1 foot
- Maximum Side Slopes: 3:1

6.2 LOW IMPACT DEVELOPMENT

Low Impact Development (LID) features are woven into the fabric of a community with the objective of mimicing the hydrologic function of the undeveloped site by capturing, treating, and infiltrating storm water as close to the source as possible by using small scale landscape based features.

The following methods/construction techniques are a sample of some of the LID component that can be applied throughout the project to provide a LID "treatment train", which will attempt to reproduce the predevelopment hydrologic system:

- Trees planted per residence
- Disconnected roof drains
- Disconnected sidewalks

- Hollywood driveways
- Rain gardens
- Permeable surfaces
- Soil Amendments

The intention of these methods is to promote the following LID goals:

- Minimize the adverse impacts from storm water runoff on water quality.
- Minimize the percentage of impervious surfaces on land development projects and implement mitigation measures to mimic the predevelopment water balance through infiltration, evapotranspiration, and capture and reuse of storm water.
- Minimize pollutant loadings from impervious surfaces such as roof tops, parking lots, and roadways through the use of properly designed treatment control and source control BMPs.

The LID design goal is to capture by either infiltration and/or reuse of 100% of the volume of runoff generated by the 85th percentile 24 hour storm event, as calculated using the "Urban Hydrology for Small Watersheds" TR55 manual. If the design goal of 100% capture is achieved then no additional treatment is required, such as hydromodification. Table 8 provides a sample of how LID's can be utilized to provide runoff reduction credits within the plan area.

Table 8 Alternative LID Use to Achieve Minimum RVR

Land Use Type	Disconnected roof drains	Micro Bio-Retention	Infiltration Array	Tree Planting and Canopy Preservation ***	Stream Buffer	Vegetated Swales **	Required Volume Reduction (RVR)
LDR	*95%		10%	3 per lot			85%
MDR	*80%		10%	1 per lot			80%
HDR	*50%			1 per unit			75%
COM	*50%		50%	20 per acre			85%
LI/BP	*50%		25%	20 per acre		30%	85%
PARK	*90%			5 per acre	10%		100%
PQP	*50%			10 per acre			85%
ROAD	-			10 per acre			75%

* Disconnected Roof Drains will likely be implemented 100% for developments that use this measure, however some development product types are incompatible with this measure, and post construction adjustments to these systems do sometimes occur. For these reasons, the project wide average assumed usage of this measure has been reduced to the amount shown. ** Vegetated Swales may be used at some outfalls and the minimum design will be per the width and length needed to generate a RVR of 100% for each location, to the extent possible. *** Tree planning is assumed to be 50% evergreen and 50% deciduous in this example.

6.3 HYDROMODIFICATION

The current City of Roseville MS4 Permit implemented bythe Regional Water Quality Control Board, requires Hydromodification mitigation be addressed for all new discharges to waters of the State.

When urbanization takes place, peak flow discharges can increase in intensity and/or runoff duration, resulting in the artificial acceleration of natural erosion and sedimentation processes within the receiving streams. Hydromodification control measures are intended to mitigate this effect through attenuation, infiltration, and dispersion of additional runoff created by impervious surfaces and earthwork compaction by matching the pre and post development hydrographs of the 2 year 24 hour storm events.

The intent behind implementation of Hydromodification control measures is to mitigate the impact of changes in runoff duration, rate and the discharge of bed sediment supply.

Hydromodification controls flow duration control: For flow rates ranging from 25% or 45% of the pre-project 2-year 24-hour recurrence interval event ($0.25Q_2$ or $0.45Q_2$) to the pre-project 10-year 24-hour runoff event (Q_{10}), the post-project discharge rates and durations shall not deviate above the pre-project rates and durations by more than 10% over more than 10% of the length of the flow

duration curve. The specific lower flow threshold will depend on results from the channel susceptibility assessment.

Projects that discharge to channels with high or very high susceptibility are required to design for a larger range of flows ($0.25Q_2$ to Q_{10}) than projects that discharge to channels with low or medium susceptibility ($0.45Q_2$ to Q_{10}). For the purposes of this HPMP, the larger range of flows ($0.25Q_2$ to Q_{10}) shall be used.

7. URBAN LEVEL OF FLOOD PROTECTION

Based on the California Department of Water Resources (CDWR), Urban Level of Flood Protection (ULOP) is the level of protection that is necessary to withstand flooding from a 200-year event using criteria consistent with, or developed by, the CDWR. ULOP shall not mean shallow flooding or flooding from local drainage that meets the criteria of the national FEMA standard of flood protection.

The nearest major flooding source to the project site is the South Branch of Pleasant Grove Creek. FEMA has mapped the 100-year floodplain limits, as shown on FEMA FIRM 06061C0476 F. Based on the Flood Insurance Study for Placer County, FEMA has provided flood profiles for the 10-, 50-, 100-, and 500-year events in the South Branch of Pleasant Grove Creek.

FEMA does not provide 200-year water surface elevations. For purposes of determining the ULOP, the 500-year water surface elevation will be reviewed in the creek as a conservative value. Based on the 500-year event flood profile, the 500-year water surface elevation (WSEL) along the project site's frontage varies from approximately 101.0 feet (at FEMA cross section H located just downstream of project boundary), to 105.5 feet (at FEMA cross section J located just upstream of project boundary). The datum for the FEMA flood elevations is NGVD 29.

The City provided a Draft ULOP Freeboard Requirements exhibit (see Appendix A). Assuming Condition 2 prevails with the difference between the ULOP WSEL and the City WSEL is equal or greater than 0.5 feet. The required freeboard is measured from the ULOP WSEL plus 2 feet to finished floor.

With the project site varying from 110 feet to 140 feet, the highest 500-year water surface approximately 105.5 feet, the Urban Level of Flood Protection is more than adequately provided.

8. SUMMARY OF RESULTS

In general, four scenarios were evaluated to determine the storm drain sizing of the HPCO Master Plan improvement plans. These scenarios are:

- 10-year storm event
- 25-year storm event
- 100-year storm event with storm drain system
- 100-year storm event with drainage inlets blocked

The 10-year storm event remains within the pipe system with over 1 foot of freeboard from the drain inlets and manhole rims.

- ***New Meadow Drive and Blue Oaks Blvd.*** Summary:
  - In New Meadow Drive and Blue Oaks Blvd. the 10-year HGL remains below the grate/rim elevations with over 1 foot of freeboard.

  - Based on the drainage inlet calculations in Appendix C, the peak flow rate calculated at the drainage inlets vary between 0.7 to 1.9 cfs. Based on Table 5 the maximum 10-year peak flow rates in a collector half width on a continuous slope of 0.25% is 1.6 cfs and at 0.50% is 2.3 cfs. Therefore at all continuous slopes greater than 0.50% the 10-year event will not encroach into the traveled way.

- ***Painted Desert Drive*** Summary:
  - In Painted Desert Drive the 10-year HGL remains below the grate/rim elevations with over 1 foot of freeboard.

- ***Woodcreek Oaks Blvd.*** Summary:
  - In Woodcreek Oaks Blvd. the 10-year HGL remains below the grate/rim elevations with over 1 foot of freeboard.

- ***HP Way*** Summary:
  - In HP Way, the 10-year HGL remains below the grate/rim elevations with over 1 foot of freeboard in all locations.

The 25-year storm event is primarily conveyed in the pipe system with minor ponding not exceeding the roadway centerline (results can be found in the Appendices).

- ***New Meadow Drive and Blue Oaks Blvd.*** Summary: In New Meadow Drive and Blue Oaks Blvd. there are four locations where the HGL exceeds the drainage inlet grate or storm drain manhole elevation. This occurs at the drainage inlets at Sta. 54+28.60 (DI 3A and DI 3B) and Sta

51+19.64 (DI 5A), and at storm drain manhole Sta. 54+28.58 (DMH 3) on New Meadow Drive.

- ***Painted Desert Drive*** Summary:
  - In Painted Desert Drive the 25-year HGL remains below the grate/rim elevations.

- ***Woodcreek Oaks Blvd.*** Summary:
  In Woodcreek Oaks Blvd. the 25-year HGL remains below the grate/rim elevations.

- ***HP Way*** Summary:
  In the northern HP Way drainage section, the 25-year HGL remains below the grate/rim elevations. In the central HP Way drainage section, the 25-year HGL exceeds the grate/rim elevations in many locations.

The 100-year storm event is primarily conveyed in the pipe system with areas of street inundation generally not exceeding the roadway centerline (results can be found in the Appendices).

- ***New Meadow Drive and Blue Oaks Blvd.*** Summary: In New Meadow Drive and Blue Oaks Blvd. the HGLs in the New Meadow Drive pipe system are located above the grate elevations; therefore street flow will carry excess flows along the overland release path. The HGLs in the Blue Oaks Blvd. pipe system are located below the grate elevations.

- ***Painted Desert Drive*** Summary:
  In the western portion of Painted Desert Drive the 100-year HGL remains below the grate/rim elevations. In the eastern portion of Painted Desert Drive the 100-year HGL exceeds the grate/rim elevations at three locations.

- ***Woodcreek Oaks Blvd.*** Summary: In Woodcreek Oaks Blvd. the 100-year HGL remains below the grate/rim elevations on the south side. On the north side the HGL remains below the grate/rim elevations except at one drainage inlet (DI AB) located at approximate Sta. 166+49.

- ***HP Way*** Summary: In HP Way, the 100-year HGL remains below the grate/rim elevations on the northern section except for one location. In the central section 100-year HGL exceeds the grate/rim elevations in many locations.

For the 100-year storm event with all drain inlets assumed blocked, this is a worst case scenario which is required to comply with City of Roseville standards. The HPCO Master Plan flow is conveyed using only overland release through the

streets. The overland release map in Appendix B identifies the flow path, location of blocked drainage inlets, and approximate areas of inundation.

- ***New Meadow Drive and Blue Oaks Blvd.*** Summary: In New Meadow Drive and Blue Oaks Blvd., during the 100-year storm event approximately 190 cfs will be conveyed down New Meadow Drive towards Blue Oaks Blvd. Based on the cross section of the New Meadow Drive, the proposed slope of the road at 0.77%, and the above flow rate, the depth of flow (normal depth) as measured from gutter flowline to water surface is approximately 10 inches.

- ***Woodcreek Oaks Blvd.*** Summary:
  North Side Shed: During the 100-year storm event with all drain inlets blocked flows are contained within Woodcreek Oaks Blvd., and is directed north to a low point in Woodcreek Oaks Blvd., south of Blue Oaks Blvd. The drainage flows will then weir over Woodcreek Oaks Blvd. to the west where it will drain into the existing channel paralleling the south side of Blue Oaks Blvd.

  South Side Shed: During the 100-year storm event with all drain inlets blocked flows are contained within Woodcreek Oaks Blvd., and is directed south to a low point in Woodcreek Oaks Blvd., at the intersection with Crimson Ridge Way. The drainage flows will then weir over Woodcreek Oaks Blvd. to the west where it will follow Crimson Ridge Way, where it will eventually release into the South Branch of Pleasant Grove Creek.

- ***HP Way*** Summary:
  North Side Shed: During the 100-year storm event with all drain inlets blocked flows are contained within HP Way, and is directed north to the drainage channel south of Blue Oaks Blvd.

  Central Shed: During the 100-year storm event with all drain inlets blocked flows are contained within HP Way, and are directed to a low point in HP Way, where flows will the drain overland to the south towards the South Branch of Pleasant Grove Creek and the HP Tributary.

The City of Roseville has stated that as long as the HPCO Master Plan can demonstrate that runoff from the property does not exceed the flow rates shown on the North Roseville Specific Plan Area (Phase 1) Drainage Shed Map (December 1997), then storm water detention will not be required. Based on the results, the flow rates at the drainage outfalls for the HPCO Master Plan are less than the NRSPA discharges; therefore detention will not be required.

9. CONCLUSIONS

In order to accommodate future condition peak flows and existing topographic conditions it is recommended that the proposed road improvements be graded per the improvement plans that are a part of this project. It is also recommended that the storm drain pipe locations, sizes and inverts be constructed as shown on the same drawings.

10. REFERENCES

1. City of Roseville Design Standards, Section 10 Drainage, January 2013

2. Placer County Stormwater Management Manual, September 1990

3. North Roseville Specific Plan Area (Phase 1) Drainage Shed Map, Vail Engineering Corporation, December 1997

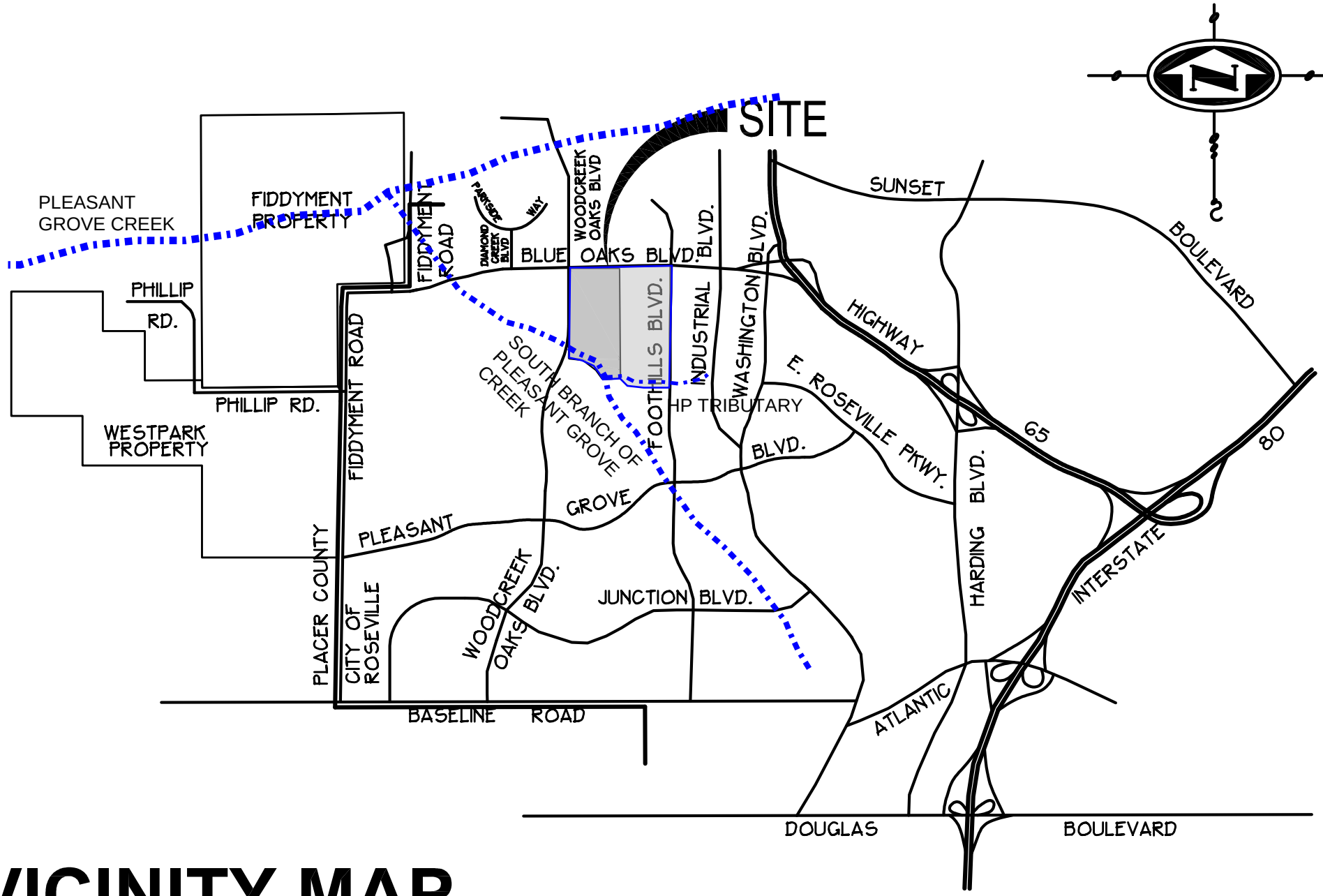
4. Stormwater Quality Design Manual for the Sacramento and South Placer Regions, May 2007

5. Draft ULOP Freeboard Requirements Exhibit, City of Roseville Floodplain Management, July 2014

6. City of Santa Rosa Storm Water Low Impact Development Technical Design Manual, August 2011

Appendix A

Vicinity Map, Land Use Map, FEMA FIRM and FIS, and North Roseville Specific Plan Area Drainage Shed Map



VICINITY MAP

LAND USE PLAN

May 19, 2015 v.8

GRAPHIC SCALE
200 100 0 200 400
1 in = 200 ft

HEWLETT-PACKARD | CAMPUS OAS MASTER PLAN AMENDMENT

LAND USE SUMMARY - May 19, 2015 v.8

PARCEL	LAND USE	ZONING	GROSS AREA (acres)	BUILDING SQUARE FEET (SF) EXISTING DEVELOPED	REMAINING CAPACITY	TOTAL	FLOOR AREA RATIO (FAR)	Dwelling Units (du) DENSITY (du/ac)	DU's (units)
RESIDENTIAL									
LOW DENSITY RESIDENTIAL (0.5-6.9 du/ac)									
CO-1	LDR	RS/DS	6.10					5.9	36
CO-2	LDR	RS/DS	6.21					5.8	36
CO-3	LDR	R1/DS	16.53					3.9	64
CO-6	LDR	RS/DS	8.14					5.9	48
CO-7	LDR	RS/DS	9.78					5.9	58
Sub-Total:			**46.76**					**5.2**	**242**
MEDIUM DENSITY RESIDENTIAL (7.0-12.9 du/ac)									
CO-4	MDR	RS/DS	8.37					10.0	84
CO-5	MDR	RS/DS	4.69					9.8	46
CO-11	MDR	RS/DS	4.72					7.2	34
CO-12	MDR	RS/DS	4.88					7.0	34
CO-13	MDR	RS/DS	3.34					7.2	24
CO-14	MDR	RS/DS	4.43					11.3	50
CO-15	MDR	RS/DS	2.62					7.3	19
CO-16	MDR	RS/DS	2.55					7.5	19
Sub-Total:			**35.60**					**8.7**	**310**
HIGH DENSITY RESIDENTIAL (13.0 and above, Attached or Detached du/ac)									
CO-21	HDR	R3/DS	5.00					25.0	125
CO-22	HDR	R3/DS	7.26					16.4	119
CO-23	HDR	R3/DS	5.00					14.4	72
CO-24a	HDR	R3/DS	2.35					17.0	40
CO-24b	HDR	R3/DS	2.35					17.0	40
Sub-Total:			**21.97**					**18.0**	**396**
Residential Total:			**104.33**					**9.1**	**948**
			35.8%						
COMMERCIAL AND EMPLOYMENT USES									
PROFESSIONAL OFFICE									
CO-31	BP	BP	5.54		60,000	60,000	24.86%		
Sub-Total:			**5.54**	-	60,000	**60,000**	24.86%		
COMMERCIAL									
CO-41	CC	CC	13.16		120,000	120,000	20.93%		
CO-42	CC	CC	6.13		50,000	50,000	18.72%		
Sub-Total:			**19.29**	-	170,000	**170,000**	20.23%		
LIGHT INDUSTRIAL (TECH / BUSINESS PARK)									
CO-51	LI (T/BP)	MP/SA	15.2		150,000	150,000	22.65%		
CO-52	LI (T/BP)	MP/SA	17.65		150,000	150,000	19.51%		
Sub-Total:			**32.85**	-	300,000	**300,000**	20.97%		
LIGHT INDUSTRIAL				(1)	(2)				
HP-1	LI	M1/SA	114	593,820	564,000	1,157,820	23.32%		
R1	*LI*	*M1/SA*			*200,000*	*200,000*			
R2	*LI*	*M1/SA*			*200,000*	*200,000*			
R3	*LI*	*M1/SA*		*126,220*		*126,220*			
R4	*LI*	*M1/SA*		*131,190*		*131,190*			
R5	*LI*	*M1/SA*		*158,760*		*158,760*			
R6	*LI*	*M1/SA*		*177,650*		*177,650*			
HP-3	LI	M1/SA	13.23		42,180	42,180	7.32%		
HP-4	LI	M1/SA	2.01		-	-	0.00%		
Sub-Total:			**129.24**	593,820	606,180	1,200,000	21.32%		
Commercial and Employment Total:			**186.92**	**593,820**	**1,136,180**	**1,730,000**			
			64.2%						
PARKS, OPEN SPACE & PUBLIC USES									
PARKS AND OPEN SPACE									
CO-61	P/R	PR	5.70						
CO-62	P/R	PR	2.62						
CO-63	P/R	PR	0.9						
CO-64	P/R	PR	2.42						
CO-65	P/R	PR	1.35						
HP-2	P/R	PR	8.7						
CO-81	OS	OS	0.84						
CO-82	OS	OS	0.86						
CO-83	OS	OS	44.65						
Parks and Open Space Total:			**68.04**						
PUBLIC									
CO-75	P/QP	P/QP	2.15						
CO-76	P/QP	P/QP	0.32						
RE-1	P/QP	P/QP	0.5						
Public / Quasi-Public Total:			**2.97**						
Parks, Open Space & Public Uses Total:			**71.01**						
ROADS			13.47						
Campus Oaks			*10.71*						
HP			*2.76*						
Master Plan Total:			**375.73**	**593,820**	**1,136,180**	**1,730,000**			**948**

FOOTNOTES:
(1) INDICATES EXISTING SQUARE FOOTAGE BY BUILDING
(2) INDICATES FUTURE SQUARE FOOTAGE BY BUILDING

ANDREGG GEOMATICS

mortonpitalo

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638-6620.

APPROXIMATE SCALE IN FEET

500 0

A B C

1

2

HPCO MASTER PLAN
PROJECT SITE

ZONE AE

20

21

LIMIT OF DETAILED STUDY

H

I

J

K

101

102

103

104

105

106

107

LIMIT OF DETAILED STUDY

ZONE AE

South

MISTY

GREEN VALLEY COURT

WOOD

CREEK RIDGE COURT

GROVE CREEK COURT

VALLEY GLEN DRIVE

DRIVE

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

PLACER COUNTY, CALIFORNIA AND INCORPORATED AREAS

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ROSEVILLE, CITY OF	060243	0476	F

MAP NUMBER
06061C0476 F

EFFECTIVE DATE:
JUNE 8, 1998

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Table 5. Summary of Discharges (Cont'd)

Flooding Source and Location	Drainage Area (square miles)	Peak Discharges (cubic feet per second) 10-Year	50-Year	100-Year	500-Year
South Branch Pleasant Grove Creek					
Upstream of Diamond Oaks Golf Course	1.06	110	170	210	280
Downstream of Southern Pacific Railroad	3.24	350	540	640	850
At confluence with Right Tributary	4.93	440	690	820	1,080
Upstream of confluence with Pleasant Grove Creek	6.06	470	740	880	1,170
Strap Ravine					
Above Confluence with Secret Ravine	4.1	490	840	920	*
Sucker Ravine					
Above Confluence with Loomis Tributary	1.4	380	600	610	*
At Mouth	3.0	520	950	1,150	*
Sucker Ravine - Loomis Tributary					
At Mouth	0.7	210	370	380	*
Truckee River					
At Confluence With Bear Creek	513	850	2,650	3,350	4,350
At Confluence With Squaw Creek	529	2,400	5,750	7,000	9,000
At Confluence With Pole Creek	540	3,500	8,700	10,600	12,700
At Confluence With Cabin Creek	550	4,300	10,400	12,250	14,900
At Placer County Boundary	556	4,900	12,000	14,300	17,000
Ward Creek					
At Confluence With Unnamed Tributary	8.0	1,631	2,311	2,602	3,190
At Limit of Detailed Study	9.7	1,825	2,605	2,936	3,608

*Data Not Determined

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
South Branch Pleasant Grove Creek								
A	125	43	240	3.7	89.7[2]	85.8	86.8	1.0
B	2,085	70	316	2.8	90.4[2]	89.7	90.3	0.6
C	3,584	86	418	2.1	92.0[2]	91.9	92.6	0.7
D	4,892	32	173	5.1	94.0	94.0	94.6	0.6
E	5,381	48	281	3.1	95.4	95.4	96.2	0.8
F	6,886	52	216	4.1	96.4	96.4	97.3	0.9
G	8,960	42	262	3.4	98.8	98.8	99.7	0.9
H	10,580	30	202	4.2	100.7	100.7	101.7	1.0
I	11,841	43	283	2.9	102.7	102.7	103.3	0.6
J	13,281	50	215	3.8	104.8	104.8	105.3	0.5
K	14,624	57	304	2.3	107.4	107.4	108.0	0.6
L	16,626	53	240	2.9	109.5	109.5	110.3	0.8
M	18,634	41	246	2.8	111.8	111.8	112.6	0.8
N	19,872	35	141	4.5	113.7	113.7	114.4	0.7
O	20,746	29	141	4.5	114.8	114.8	115.4	0.6
P	20,982	33	189	3.4	115.8	115.8	116.4	0.6
Q	22,170	36	156	4.1	117.5	117.5	118.0	0.5
R	23,939	57	268	2.4	120.0	120.0	120.4	0.4
S	24,135	40	212	1.8	120.9	120.9	121.1	0.2
T	24,710	33	139	2.4	121.0	121.0	121.4	0.4
U	24,901	44	125	2.6	121.4	121.4	121.7	0.3
V	25,458	21	107	2.7	121.6	121.6	121.9	0.3
W	25,680	55	153	1.9	123.2	123.2	123.5	0.3
X	27,148	36	36	5.8	128.7	128.7	128.9	0.2
Y	28,242	44	47	4.5	144.2	144.2	144.7	0.5
Z	29,357	48	113	1.9	149.5	149.5	149.7	0.2
AA	32,078	31	73	2.9	154.4	154.4	154.5	0.1
AB	33,629	35	56	3.8	157.2	157.2	157.5	0.3

[1]Feet above confluence with Pleasant Grove Creek
[2]Due to backwater effects from Pleasant Grove Creek

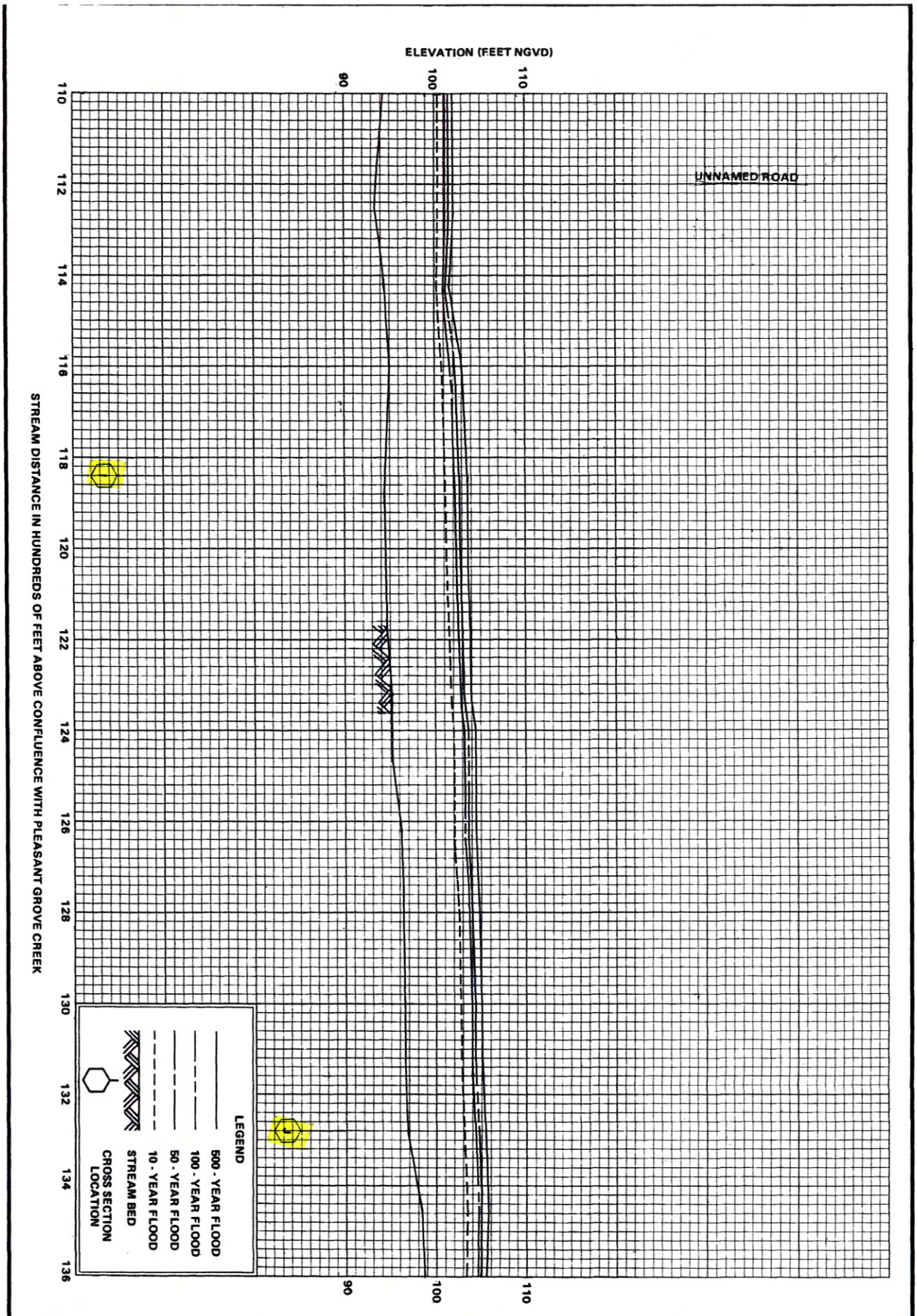
TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

PLACER COUNTY, CA
AND INCORPORATED AREAS

FLOODWAY DATA

SOUTH BRANCH PLEASANT GROVE CREEK



129P

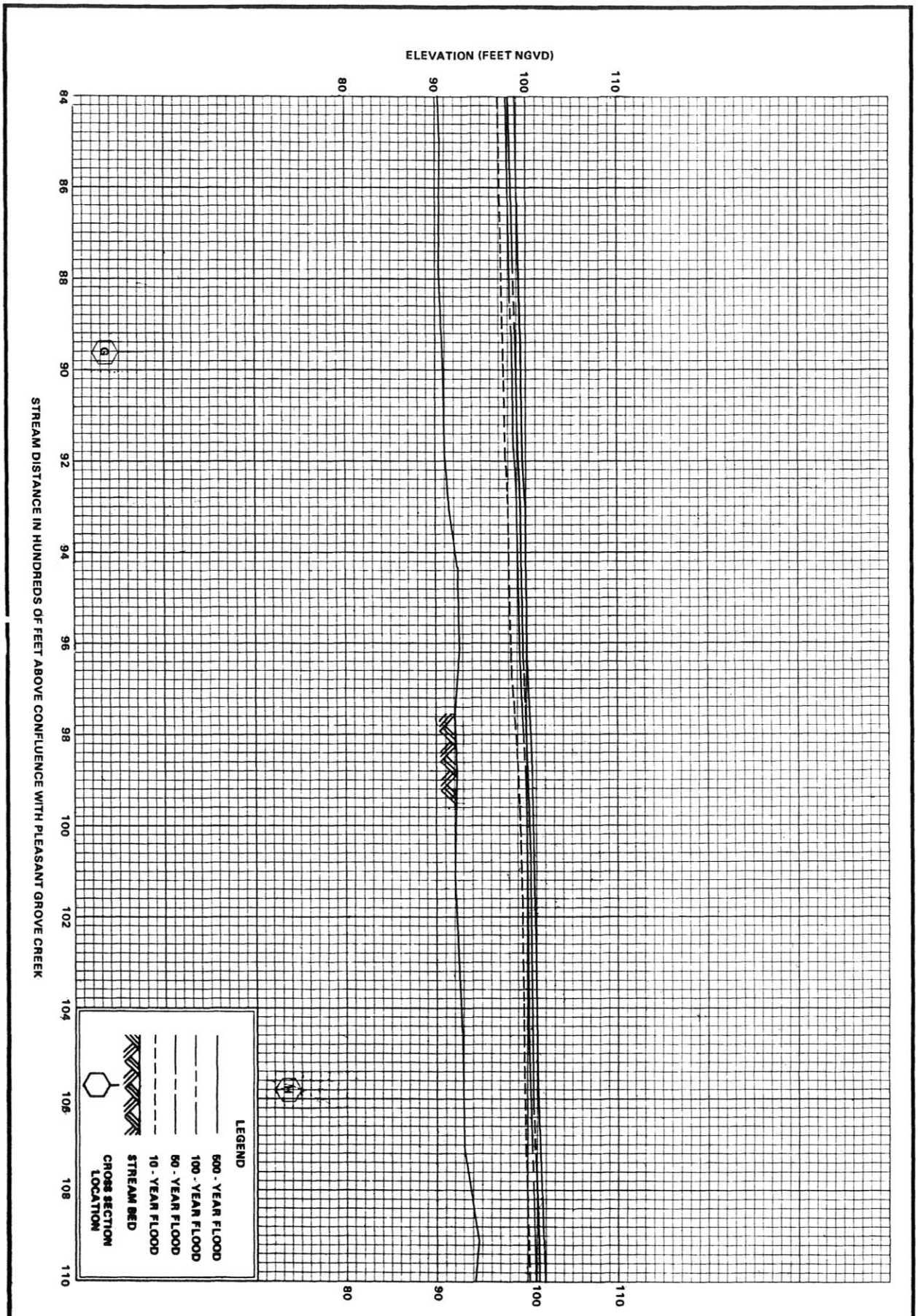
FEDERAL EMERGENCY MANAGEMENT AGENCY

PLACER COUNTY, CA
AND INCORPORATED AREAS

FLOOD PROFILES

SOUTH BRANCH PLEASANT GROVE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
PLACER COUNTY, CA
AND INCORPORATED AREAS
130P
FLOOD PROFILES
SOUTH BRANCH PLEASANT GROVE CREEK
LEGEND
500 - YEAR FLOOD
100 - YEAR FLOOD
50 - YEAR FLOOD
10 - YEAR FLOOD
STREAM BED
CROSS SECTION LOCATION
K
ELEVATION (FEET NGVD)
120
110
100
90
136
138
140
142
144
146
148
150
152
154
156
158
160
162
STREAM DISTANCE IN HUNDREDS OF FEET ABOVE CONFLUENCE WITH PLEASANT GROVE CREEK



FEDERAL EMERGENCY MANAGEMENT AGENCY

PLACER COUNTY, CA
AND INCORPORATED AREAS

FLOOD PROFILES

SOUTH BRANCH PLEASANT GROVE CREEK

TRIBUTARY

LIMIT OF DETAILED STUDY

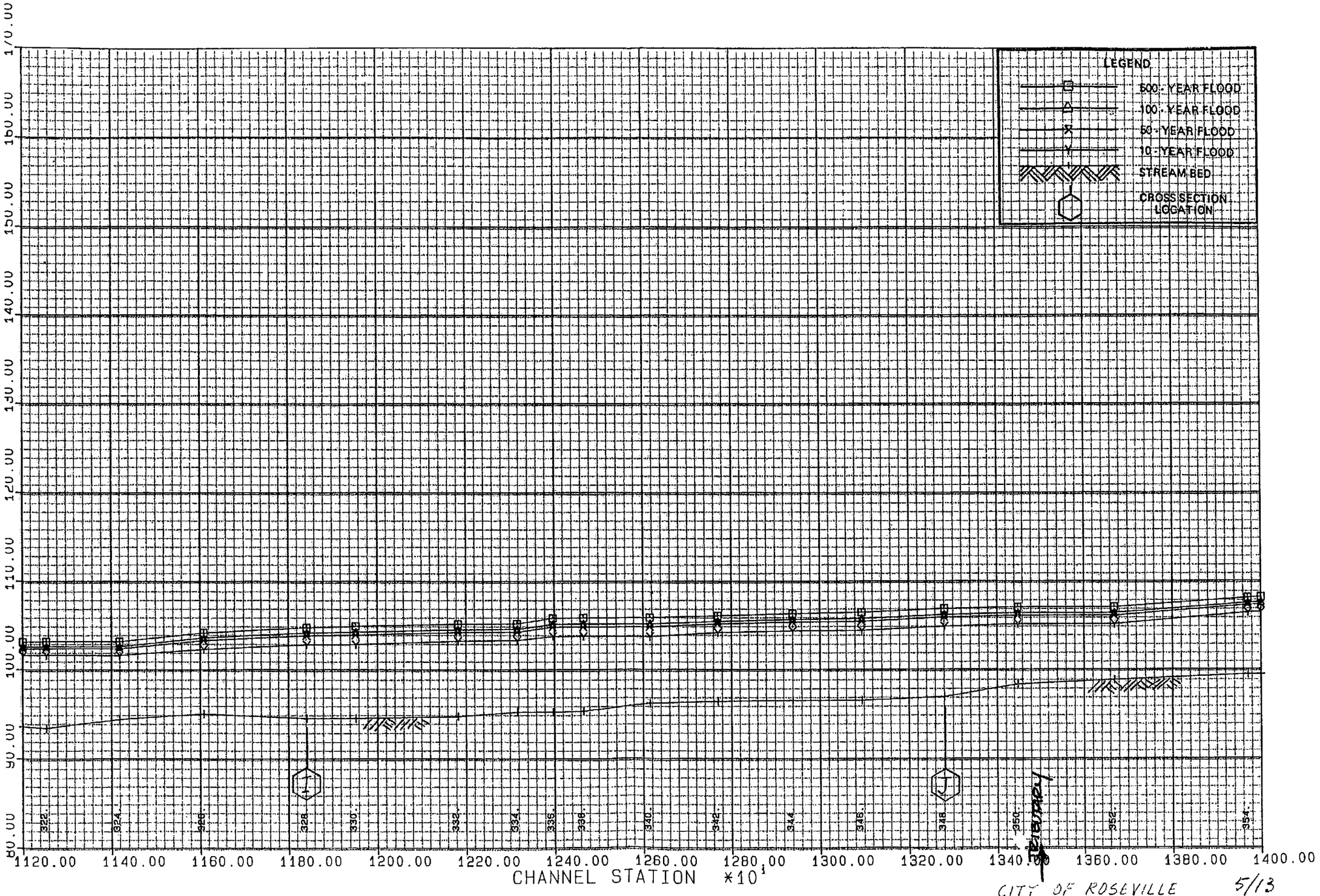
LIMIT OF STUDY

DEPT. OF PUBLIC WORKS	OFFICIAL FLOOD PLAIN MAP	
	APRIL 1987	PLAN NO.
	SCALE: 1"=250	SPG-2

CITY OF ROSEVILLE

DE

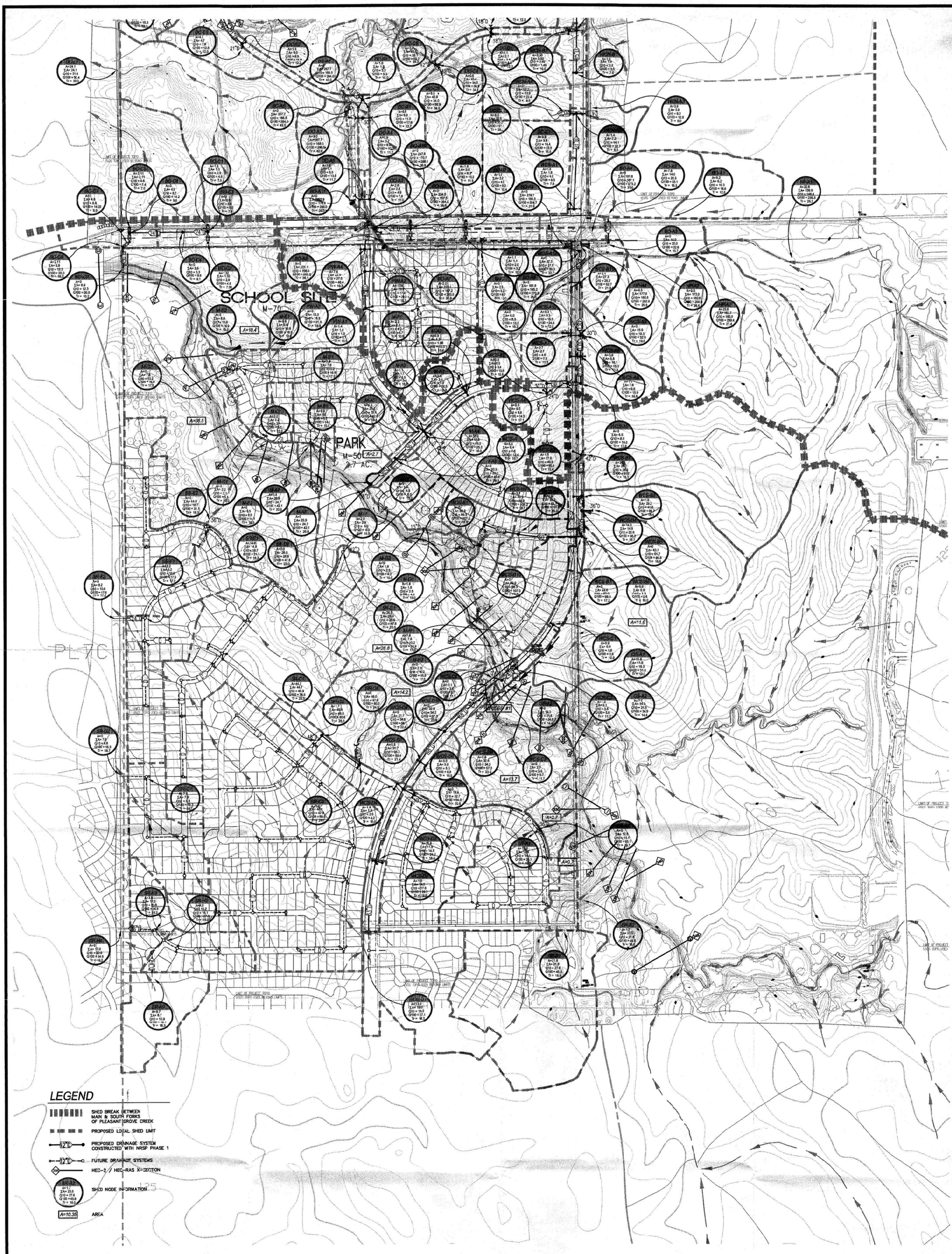
PI



S. BR. PLEASANT GROVE (F)

CITY OF ROSEVILLE
PLACER COUNTY, CALIF.

5/13



SHEET 1 OF 2

CIVIL SOLUTIONS
2018 San Fernando Way
Sacramento CA 95818
(916) 489 - 7240
fax (916) 454 - 9744

NORTH ROSEVILLE SPECIFIC PLAN AREA – PHASE 1

DRAINAGE SHED MAP

CITY OF ROSEVILLE PLACER COUNTY CALIFORNIA

VAIL ENGINEERING CORPORATION
916 925-3323
PREPARED UNDER THE SUPERVISION OF:

RELWICH & LEHNIG
916 485-7222
PREPARED UNDER THE SUPERVISION OF:

VICINITY MAP

REV.	DATE	DESCRIPTION	APP'D.	DATE
1	3/30/00	PER CITY		
2	6/30/00	PER CITY		
3	10/31/00	PER CITY		

APP. PANEL INSPECTOR

DESIGNED: DRAWN: CHECKED: APPROVED: DATE:
PROJECT NO. 96-04

Master Drainage Plan

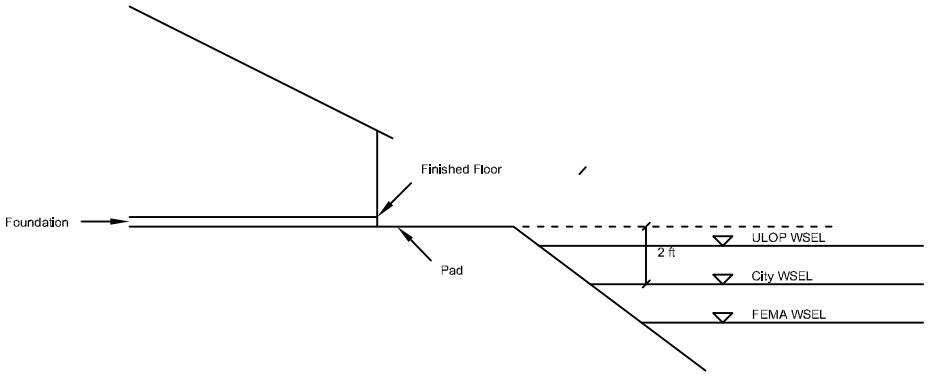
City of Roseville DPW - Engineering	Floodplain Management	C. Walker 7/10/14

ULOP GPA Draft Freeboard Requirements

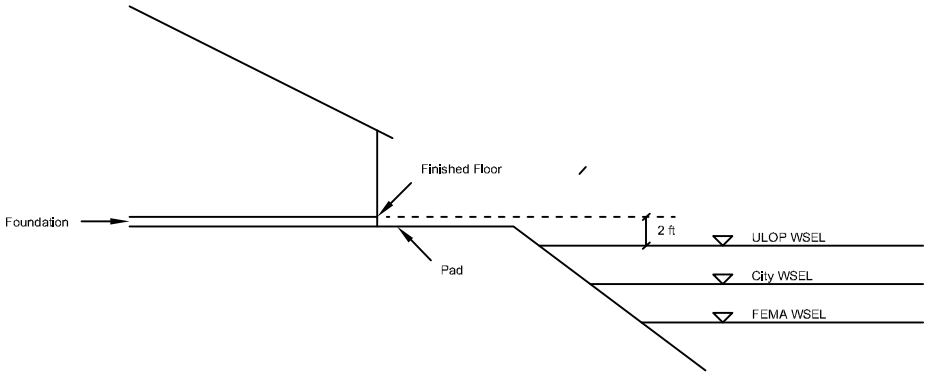
- FEMA Floodplain: 100-year Water Surface Elevation (WSEL) from FIRM
- City Floodplain: 100-year WSEL, Future, Fully Developed, Unmitigated Condition
- ULOP Floodplain: 200-year WSEL, Future, Fully Developed, Unmitigated Condition

---

1st Condition: If the difference between the ULOP WSEL and the City WSEL is less than 0.5 ft, then freeboard is measured from the City WSEL plus 2-feet to Pad.



2nd Condition: If the difference between the ULOP WSEL and the City WSEL is equal to or greater than 0.5 ft, then freeboard is measured from the ULOP WSEL plus 2-feet to Finished Floor.

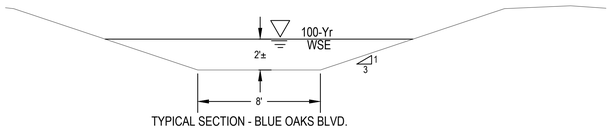


HEWLETT-PACKARD / CAMPUS OAKS MASTER PLAN

CAMPUS OAKS PRELIMINARY GRADING PLAN

JANUARY 20, 2015

SHEET 6 OF 9



TYPICAL SECTION - BLUE OAKS BLVD.

GRAPHIC SCALE

60 30 0 60 120

1 in = 60 ft

mortonpitalo

BLUE OAKS BOULEVARD

BLUE OAKS BOULEVARD

WOODCREEK OAK BOULEVARD

HP WAY

PAINTED DESERT

PAINTED DESERT

NEW MEADOW DRIVE

LOT: 1
CO-31
5.5 Acres

LOT: 2
CO-41
13.1 Acres

LOT: 3
CO-21
5.0 Acres

LOT: 4
CO-42
6.1 Acres

LOT: 5
CO-51
15.2 Acres

LOT: 6
CO-75
2.2 Acres

INV=89.42'

INV=92.69'

INV=91.35'

INV=93.91'

INV=82.02'

HEWLETT-PACKARD / CAMPUS OAKS MASTER PLAN

CAMPUS OAKS PRELIMINARY GRADING PLAN

JANUARY 20, 2015

SHEET 7 OF 9

GRAPHIC SCALE
60 30 0 60 120
1 in = 60 ft

mortonpitalo

PAINTED DESERT

PAINTED DESERT

WOODCREEK OAK BOULEVARD

WOODCREEK OAK BOULEVARD

HP WAY

HP WAY

CRIMSON RIDGE

LOT: 6
CO-75
2.2 Acres

LOT: 7
CO-5
4.7 Acres

LOT: 8
CO-4
8.4 Acres

LOT: 9
CO-22
7.3 Acres

LOT: 10
CO-15
2.6 Acres

LOT: 11
CO-52
17.6 Acres

LOT: 12
CO-13
3.3 Acres

LOT: 13
CO-14
4.4 Acres

LOT: 17
CO-16
2.6 Acres

LOT: 18
CO-23
5.0 Acres

LOT: 24
CO-76
0.3 Acres

HEWLETT-PACKARD / CAMPUS OAKS MASTER PLAN

CAMPUS OAKS PRELIMINARY GRADING PLAN

JANUARY 20, 2015

SHEET 8 OF 9

GRAPHIC SCALE
60 30 0 60 120
1 in = 60 ft

mortonpitalo

WOODCREEK OAK

LOT: 14
CO-7
9.8 Acres

LOT: 15
CO-11
4.7 Acres

LOT: 16
CO-12
4.9 Acres

LOT: 19
CO-6
8.1 Acres

LOT: 20
CO-1
6.1 Acres

LOT 'K'
CO-65
1.3 Acres

LOT 'C'
CO-62
2.6 Acres

LOT 'G'
CO-64
2.4 Acres

LOT: 21
CO-24A
2.4 Acres

LOT 'A'
CO-61
5.7 Acres

LOT 'H'
CO-63
0.9 Acres

LOT: 22
CO-24B
2.4 Acres

LOT: 25
CO-2
6.2 Acres

117.0

42"SD

48"SD

48"D

24"D

18"D

OPEN SPACE PRESERVE EXHIBIT

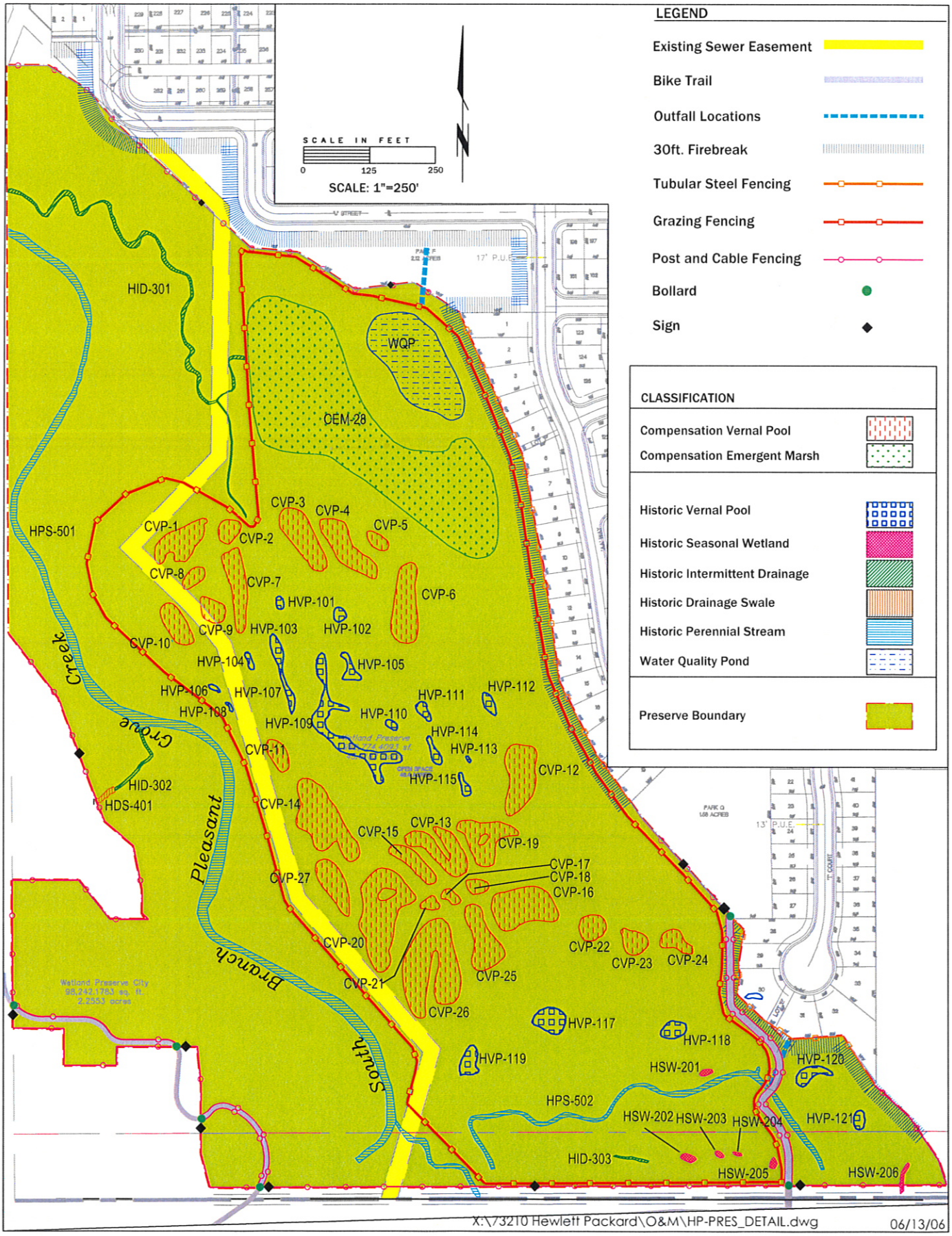


FIGURE 2. Preserve Detail

2004-280 Hewlett Packard

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Appendix B

Pre- and Post-Development Water Shed Maps and Overland Release Maps

PRE-DEVELOPMENT SITE
OVERALL DRAINAGE SHED MAP

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA
DATE: 1.29.2015
DATE REVISED: 4.13.2015

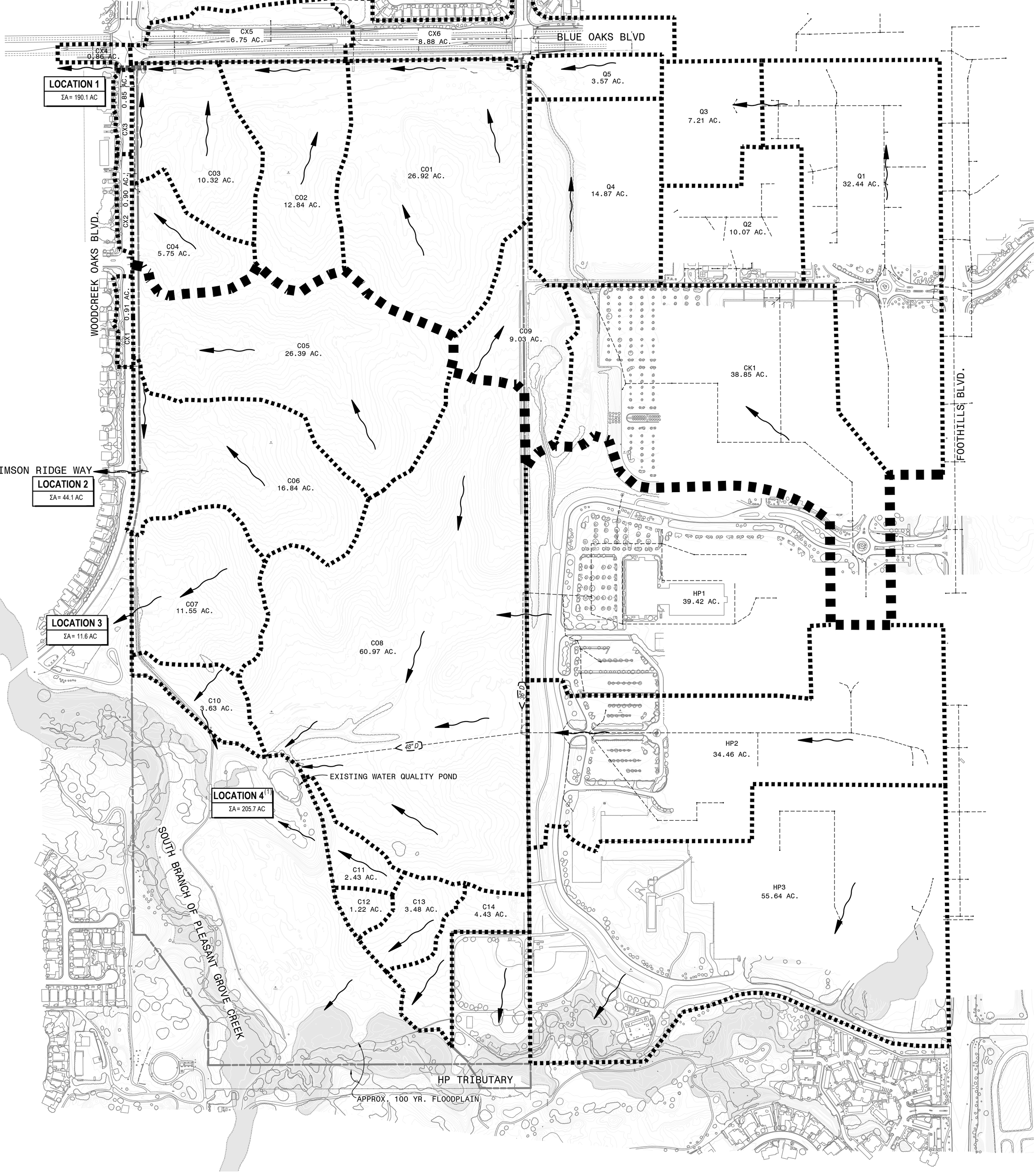
GRAPHIC SCALE
250 125 0 250 500
1 in = 250 ft

LEGEND

- MAJOR SHED BOUNDARY BETWEEN MAIN AND SOUTH BRANCH OF PLEASANT GROVE CREEKS
- LOCAL SHED BOUNDARY
- LIMITS OF CAMPUS OAKS
- FLOW DIRECTION
- < 48" D > STORM DRAIN PIPE SIZE

NOTE

(1) LOCATION 4 COVERS THE SOUTHERN DRAINAGE THAT DRAINS DIRECTLY INTO THE SOUTH BRANCH OF PLEASANT GROVE CREEK



DS1

MORTON & PITALO, INC.
CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING
LANDSCAPE ARCHITECTURE • TRAFFIC ENGINEERING
75 Iron Point Circle, Suite 120 Ê Folsom, CA 95630
phone: 916.984.7621 Ê fax: 916.984.9617 Ê survey fax: 916.563.6770
survey email: staking@mpengr.com Ê web: www.mpengr.com

Dwg: X:\2013\13-0076-00\DWG\ENGR\DESIGN\DRAINAGE STUDY ATTACHMENTS\130076-APPB-DS1-DRNSHDMAP-PRE.DWG | Saved: 06-11-15 07:32pm GBARDINI | Plotted: 05-01-15 02:18pm MHAUGE

POST-DEVELOPMENT SITE OVERALL DRAINAGE SHED MAP

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA
DATE: 3.06.2015
DATE REVISED: 6.02.2015

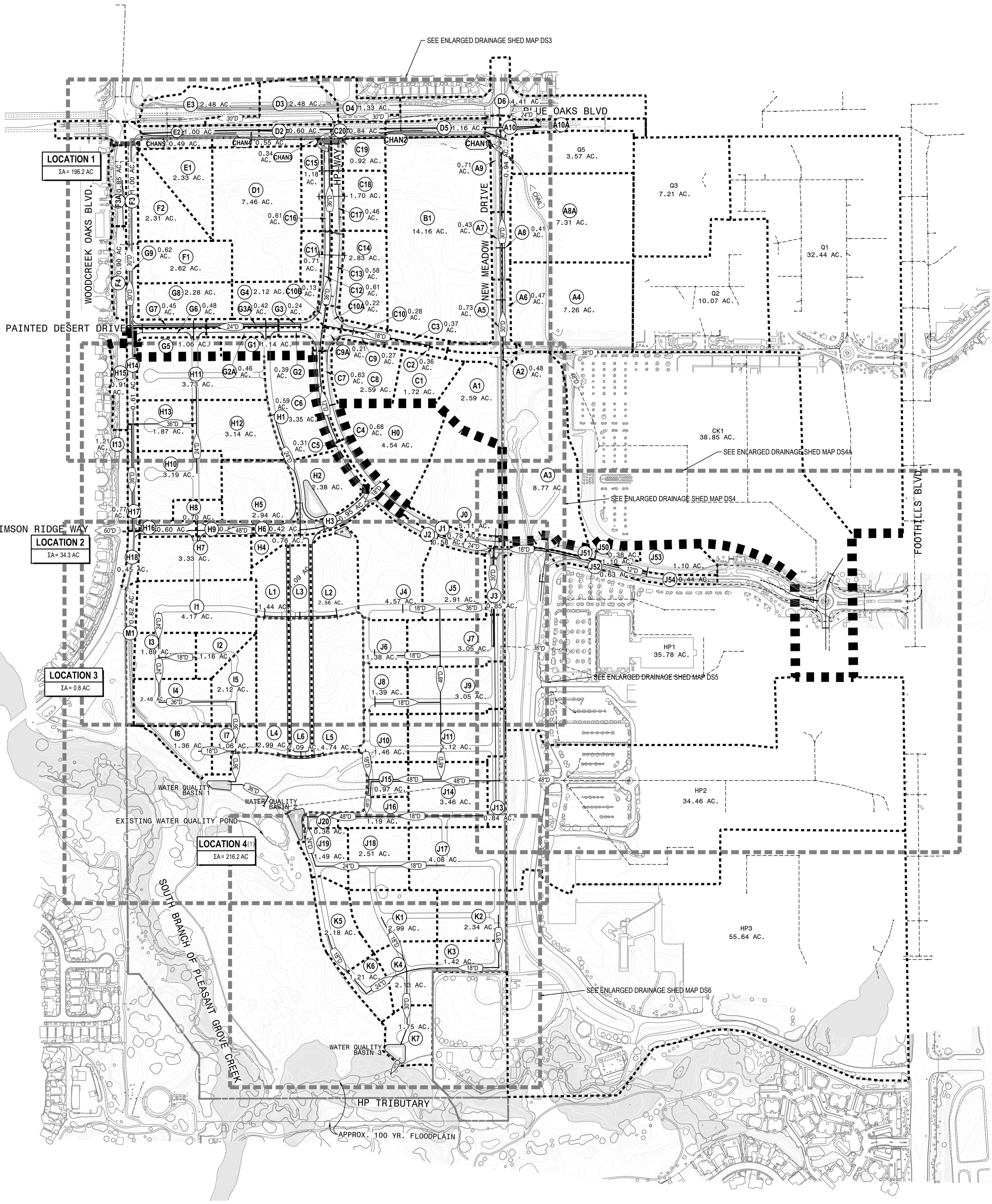
GRAPHIC SCALE
250 125 0 250 500
1 in = 250 ft

LEGEND

- MAJOR SHED BOUNDARY BETWEEN MAIN AND SOUTH BRANCH OF PLEASANT GROVE CREEKS
- LOCAL SHED BOUNDARY
- LIMITS OF CAMPUS OAKS
- < 30"D EXISTING STORM DRAIN PIPE SIZE
- 48"D PROPOSED STORM DRAIN PIPE SIZE

NOTE

(1) LOCATION 4 COVERS THE SOUTHERN DRAINAGE THAT DRAINS DIRECTLY INTO THE SOUTH BRANCH OF PLEASANT GROVE CREEK



DS2

MORTON & PITALO, INC.
CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING
LANDSCAPE ARCHITECTURE • TRAFFIC ENGINEERING
75 Iron Point Circle, Suite 120 Ê Folsom, CA 95630
phone: 916.984.7621 Ê fax: 916.984.9617 Ê survey fax: 916.563.6770
survey email: staking@mpengr.com Ê web: www.mpengr.com

Dwg: X:\2013\13-0076-00\DWG\ENGR\DESIGN\DRAINAGE STUDY ATTACHMENTS\130076-APPB-DS2-DRNSHDMAP-POST.DWG | Saved: 06-03-15 05:16pm MHAUGE | Plotted: 06-03-15 05:14pm MHAUGE

POST-DEVELOPMENT SITE ENLARGED NORTHERN DRAINAGE SHED MAP

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA
DATE: 3.06.2015
DATE REVISED: 6.11.2015

GRAPHIC SCALE
100 50 0 100 200
1 in = 100 ft

LEGEND

- MAJOR SHED BOUNDARY BETWEEN MAIN AND SOUTH BRANCH OF PLEASANT GROVE CREEKS
- LOCAL SHED BOUNDARY
- LIMITS OF CAMPUS OAKS
- < 30"D > EXISTING STORM DRAIN PIPE SIZE
- 48"D PROPOSED STORM DRAIN PIPE SIZE

REFER TO EXHIBIT WQ1 FOR WATER QUALITY SHEDS AND ANTICIPATED BMPs.

BLUE OAKS BLVD
WOODCREEK OAKS BLVD.
PAINTED DESERT DRIVE
HP WAY
NEW MEADOW DRIVE

OUTFALL 1: ΣA= 196.2 AC, Tr= 34.5 MIN, Q10= 154.5, Q25= 203.0, Q100= 251.5
OUTFALL 2: ΣA= 162.8 AC, Tr= 31.0 MIN, Q10= 141.2, Q25= 185.3, Q100= 229.4
OUTFALL 3: ΣA= 123.2 AC, Tr= 27.8 MIN, Q10= 119.5, Q25= 156.6, Q100= 193.8
NRSP-B0-A5: ΣA= 191.8 AC, Tr= 31.4 MIN, Q10= 165.2 CFS, Q25= =, Q100= 270.3 CFS
NRSP-WCS-A5: ΣA= 6.5 AC, Tr= 17.6 MIN, Q10= 8.5 CFS, Q25= =, Q100= 14.0 CFS
Ex DMHC: ΣA= 16.4 AC, Tr= 17.1 MIN, Q10= 22.4 CFS, Q25= 29.4 CFS, Q100= 36.3 CFS
Ex DMHB: ΣA= 16.4 AC, Tr= 16.8 MIN, Q10= 22.6 CFS, Q25= 29.6 CFS, Q100= 36.6 CFS
Ex DMHA: ΣA= 12.3 AC, Tr= 14.9 MIN, Q10= 18.0 CFS, Q25= 23.5 CFS, Q100= 29.0 CFS
Ex DMH 10-2: ΣA= 11.6 AC, Tr= 14.7 MIN, Q10= 17.2 CFS, Q25= 22.5 CFS, Q100= 27.8 CFS
CHAN5: ΣA= 180.2 AC, Tr= 34.5 MIN, Q10= 142.3 CFS, Q25= 187.0 CFS, Q100= 231.6 CFS
CHAN4: ΣA= 171.4 AC, Tr= 34.3 MIN, Q10= 135.8 CFS, Q25= 178.3 CFS, Q100= 220.9 CFS
CHAN3: ΣA= 162.8 AC, Tr= 31.0 MIN, Q10= 134.3 CFS, Q25= 176.3 CFS, Q100= 218.3 CFS
CHAN2: ΣA= 138.5 AC, Tr= 30.6 MIN, Q10= 121.7, Q25= 159.7, Q100= 197.7
CHAN1: ΣA= 123.2 AC, Tr= 27.8 MIN, Q10= 119.5, Q25= 156.6, Q100= 193.8
DMH 100: ΣA= 17.9 AC, Tr= 20.1 MIN, Q10= 23.5 CFS, Q25= 30.1 CFS, Q100= 37.1 CFS
DMH 101: ΣA= 16.0 AC, Tr= 19.8 MIN, Q10= 20.5 CFS, Q25= 26.7 CFS, Q100= 33.0 CFS
DMH 101A: ΣA= 1.9 AC, Tr= 10.3 MIN, Q10= 3.4 CFS, Q25= 4.5 CFS, Q100= 5.5 CFS
DMH 102: ΣA= 13.1 AC, Tr= 18.9 MIN, Q10= 17.2 CFS, Q25= 22.4 CFS, Q100= 27.6 CFS
DMH 103: ΣA= 8.4 AC, Tr= 17.8 MIN, Q10= 11.3 CFS, Q25= 14.7 CFS, Q100= 18.2 CFS
DMH 104: ΣA= 2.4 AC, Tr= 17.0 MIN, Q10= 3.3 CFS, Q25= 4.4 CFS, Q100= 5.4 CFS
DMH 105: ΣA= 1.0 AC, Tr= 14.3 MIN, Q10= 1.5 CFS, Q25= 2.0 CFS, Q100= 2.4 CFS
DMH 1: ΣA= 4.7 AC, Tr= 12.0 MIN, Q10= 7.8 CFS, Q25= 10.1 CFS, Q100= 12.5 CFS
DMH 2: ΣA= 67.2 AC, Tr= 27.8 MIN, Q10= 64.0, Q25= 83.9, Q100= 103.9
DMH 2-2: ΣA= 3.9 AC, Tr= 8.9 MIN, Q10= 2.4 CFS, Q25= 9.6 CFS, Q100= 11.9 CFS
DMH 3: ΣA= 13.0 AC, Tr= 11.4 MIN, Q10= 21.9, Q25= 28.7, Q100= 35.4
DMH 3-2: ΣA= 0.6 AC, Tr= 8.6 MIN, Q10= 1.2 CFS, Q25= 1.5 CFS, Q100= 1.9 CFS
DMH 4.1: ΣA= 8.0 AC, Tr= 17.5 MIN, Q10= 10.9 CFS, Q25= 14.2 CFS, Q100= 17.6 CFS
DMH 5-1: ΣA= 5.6 AC, Tr= 10.8 MIN, Q10= 9.7 CFS, Q25= 12.7 CFS, Q100= 15.6 CFS
DMH 6: ΣA= 13.9 AC, Tr= 13.4 MIN, Q10= 21.5, Q25= 28.1, Q100= 34.7
DMH 6-1: ΣA= 2.4 AC, Tr= 9.2 MIN, Q10= 4.6 CFS, Q25= 6.0 CFS, Q100= 7.4 CFS
DMH 7: ΣA= 8.1 AC, Tr= 12.3 MIN, Q10= 13.1 CFS, Q25= 17.1 CFS, Q100= 21.1 CFS
DMH 8.2: ΣA= 9.0 AC, Tr= 13.5 MIN, Q10= 13.9 CFS, Q25= 18.1 CFS, Q100= 22.4 CFS
DMH 9: ΣA= 9.0 AC, Tr= 13.8 MIN, Q10= 13.7 CFS, Q25= 18.1, Q100= 22.1 CFS
DI5A: ΣA= 11.8 AC, Tr= 10.4 MIN, Q10= 23.8, Q25= 31.0, Q100= 38.3
INLET 1: ΣA= 53.4 AC, Tr= 27.6 MIN, Q10= 51.1, Q25= 66.9, Q100= 82.8
INLET 2: ΣA= 53.4 AC, Tr= 27.6 MIN, Q10= 51.1, Q25= 66.9, Q100= 82.8
7x7 JUNCTION: ΣA= 38.8 AC, Tr= 22.0 MIN, Q10= 45.6, Q25= 59.7, Q100= 73.8

E1 2.33 AC. | E2 1.00 AC. | E3 2.48 AC. | D1 7.46 AC. | D2 0.60 AC. | D3 2.48 AC. | D4 1.33 AC. | D5 1.16 AC. | D6 4.41 AC.
F1 2.62 AC. | F2 2.31 AC. | F3 1.00 AC. | F3A 0.85 AC. | F4 0.90 AC.
G1 1.14 AC. | G2 0.39 AC. | G2A 0.46 AC. | G3 0.24 AC. | G3A 0.42 AC. | G4 2.12 AC. | G5 1.06 AC. | G6 0.48 AC. | G7 0.45 AC. | G8 2.28 AC. | G9 0.62 AC.
H0 4.54 AC. | H1 3.35 AC. | H11 3.73 AC. | H12 3.14 AC. | H13 1.87 AC. | H14 0.61 AC. | H15 0.91 AC.
A1 2.59 AC. | A2 0.48 AC. | A3 8.77 AC. | A4 7.26 AC. | A5 0.73 AC. | A6 0.47 AC. | A7 0.43 AC. | A8 0.41 AC. | A8A 7.31 AC. | A9 0.71 AC. | A10 0.94 AC. | A10A 0.95 AC.
B1 14.16 AC.
C1 1.72 AC. | C2 0.36 AC. | C3 0.37 AC. | C4 0.68 AC. | C5 0.31 AC. | C6 0.59 AC. | C7 0.63 AC. | C8 2.59 AC. | C9 0.27 AC. | C9A 0.21 AC. | C10 0.28 AC. | C10A 0.22 AC. | C10B 0.13 AC. | C11 0.71 AC. | C12 0.61 AC. | C13 0.58 AC. | C14 2.83 AC. | C15 1.18 AC. | C16 0.61 AC. | C17 0.46 AC. | C18 1.70 AC. | C19 0.92 AC. | C20 0.84 AC.
CHAN1 | CHAN2 | CHAN3 | CHAN4 0.55 AC. | CHAN5 0.49 AC. | 0.34 AC.

SEE DS4

DS3

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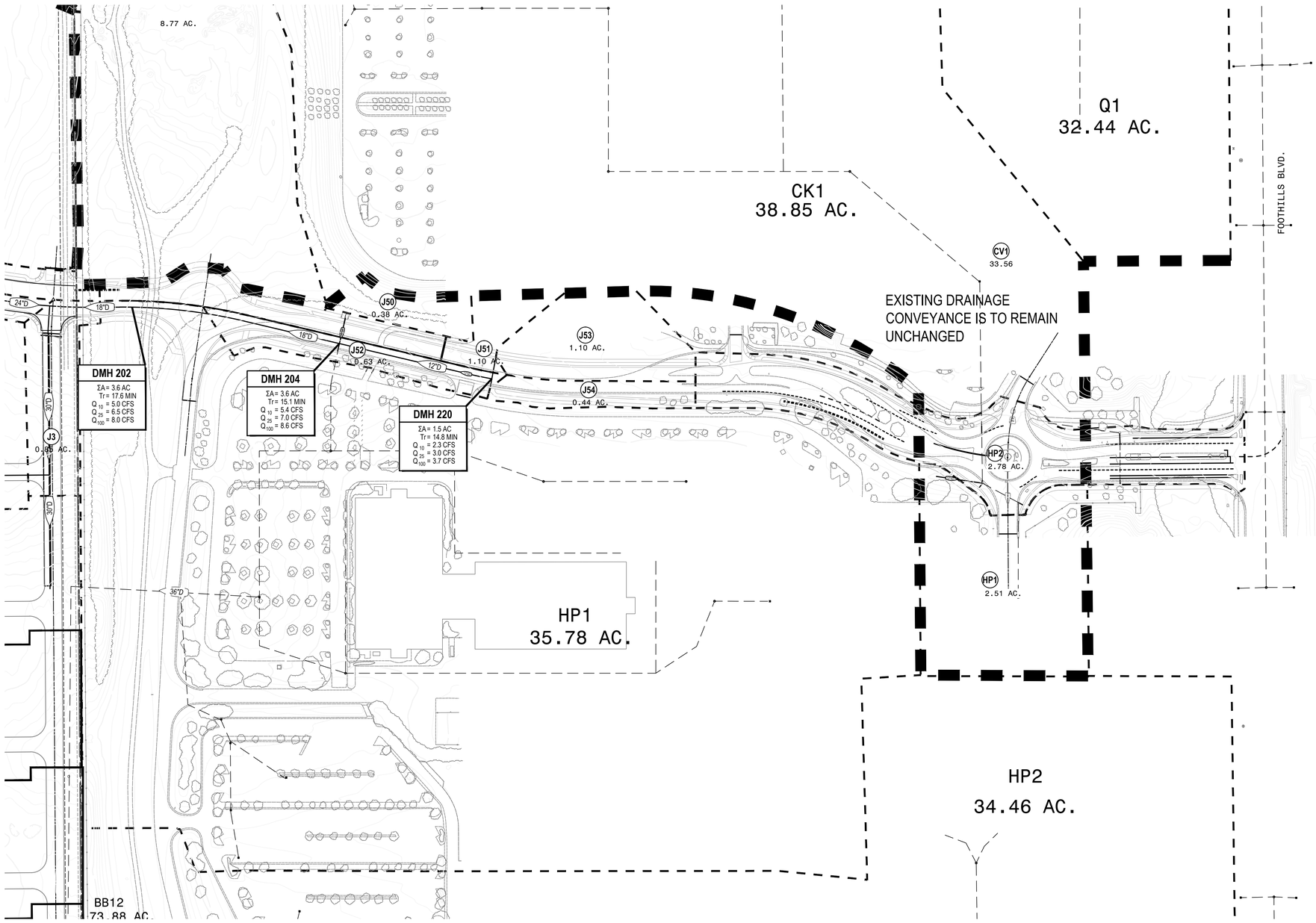
POST-DEVELOPMENT SITE ENLARGED SOUTHERN DRAINAGE SHED MAP

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA
DATE: 3.06.2015
DATE REVISED: 6.11.2015



GRAPHIC SCALE
100 50 0 100 200
1 in = 100 ft

LEGEND

- MAJOR SHED BOUNDARY BETWEEN MAIN AND SOUTH BRANCH OF PLEASANT GROVE CREEKS
- LOCAL SHED BOUNDARY
- LIMITS OF CAMPUS OAKS
- < 30"D > EXISTING STORM DRAIN PIPE SIZE
- 48"D PROPOSED STORM DRAIN PIPE SIZE

REFER TO EXHIBIT WQ1 FOR WATER QUALITY SHEDS AND ANTICIPATED BMPs.

DS4A

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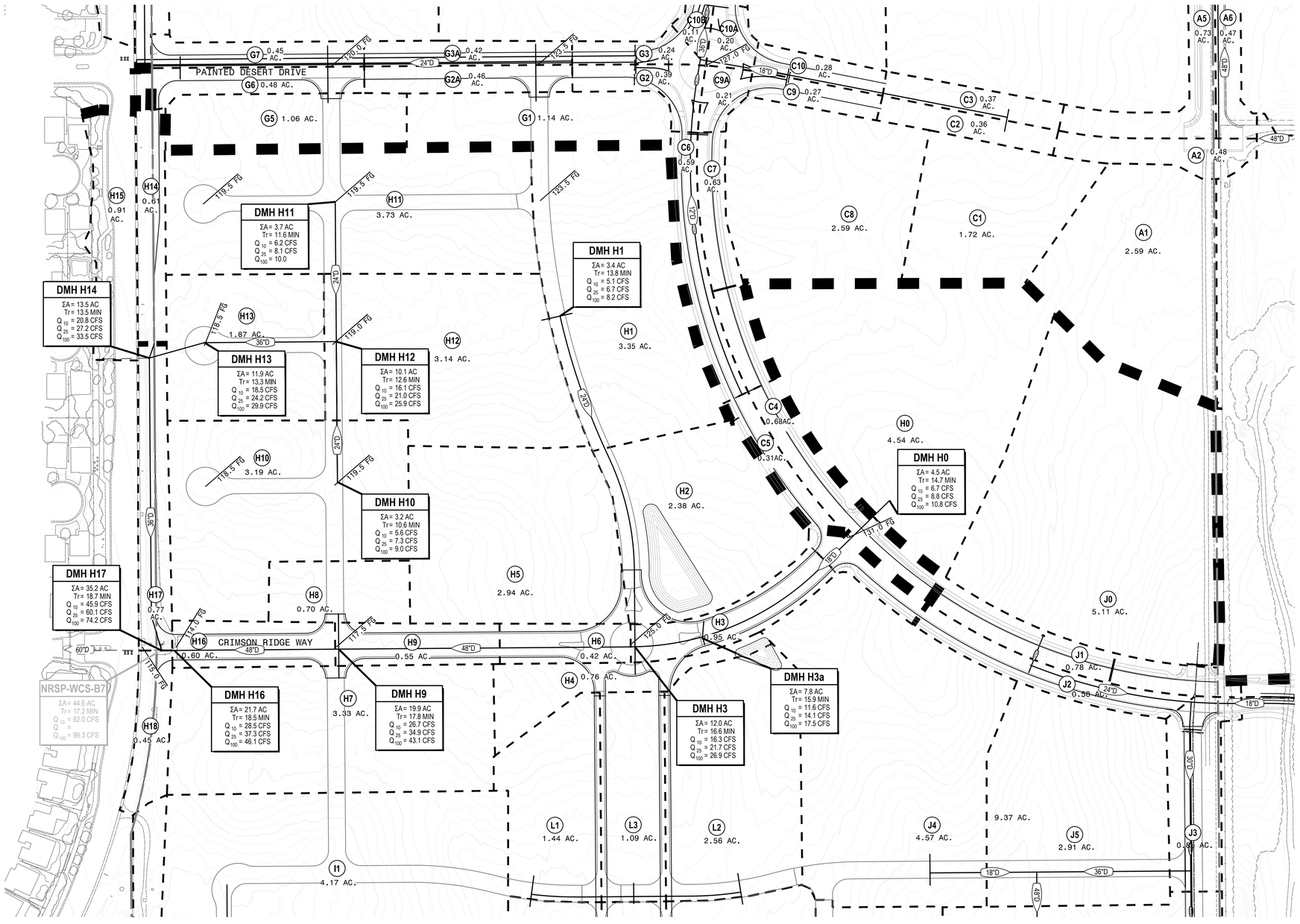
POST-DEVELOPMENT SITE
ENLARGED SOUTHERN DRAINAGE SHED MAP

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA
DATE: 3.06.2015
DATE REVISED: 6.11.2015



GRAPHIC SCALE
100 50 0 100 200
1 in = 100 ft

LEGEND

- MAJOR SHED BOUNDARY BETWEEN MAIN AND SOUTH BRANCH OF PLEASANT GROVE CREEKS
- LOCAL SHED BOUNDARY
- LIMITS OF CAMPUS OAKS
- < 30"D EXISTING STORM DRAIN PIPE SIZE
- 48"D PROPOSED STORM DRAIN PIPE SIZE

REFER TO EXHIBIT WQ1 FOR WATER QUALITY SHEDS AND ANTICIPATED BMPs.

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SEE DS4

SEE DS4A

SEE DS6

POST-DEVELOPMENT SITE ENLARGED SOUTHERN DRAINAGE SHED MAP

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA

DATE: 6.11.2015

GRAPHIC SCALE

100 50 0 100 200

1 in = 100 ft

LEGEND

- MAJOR SHED BOUNDARY BETWEEN MAIN AND SOUTH BRANCH OF PLEASANT GROVE CREEKS
- LOCAL SHED BOUNDARY
- LIMITS OF CAMPUS OAKS
- < 30"D > EXISTING STORM DRAIN PIPE SIZE
- 48"D PROPOSED STORM DRAIN PIPE SIZE

REFER TO EXHIBIT WQ1 FOR WATER QUALITY SHEDS AND ANTICIPATED BMPs.

DS5

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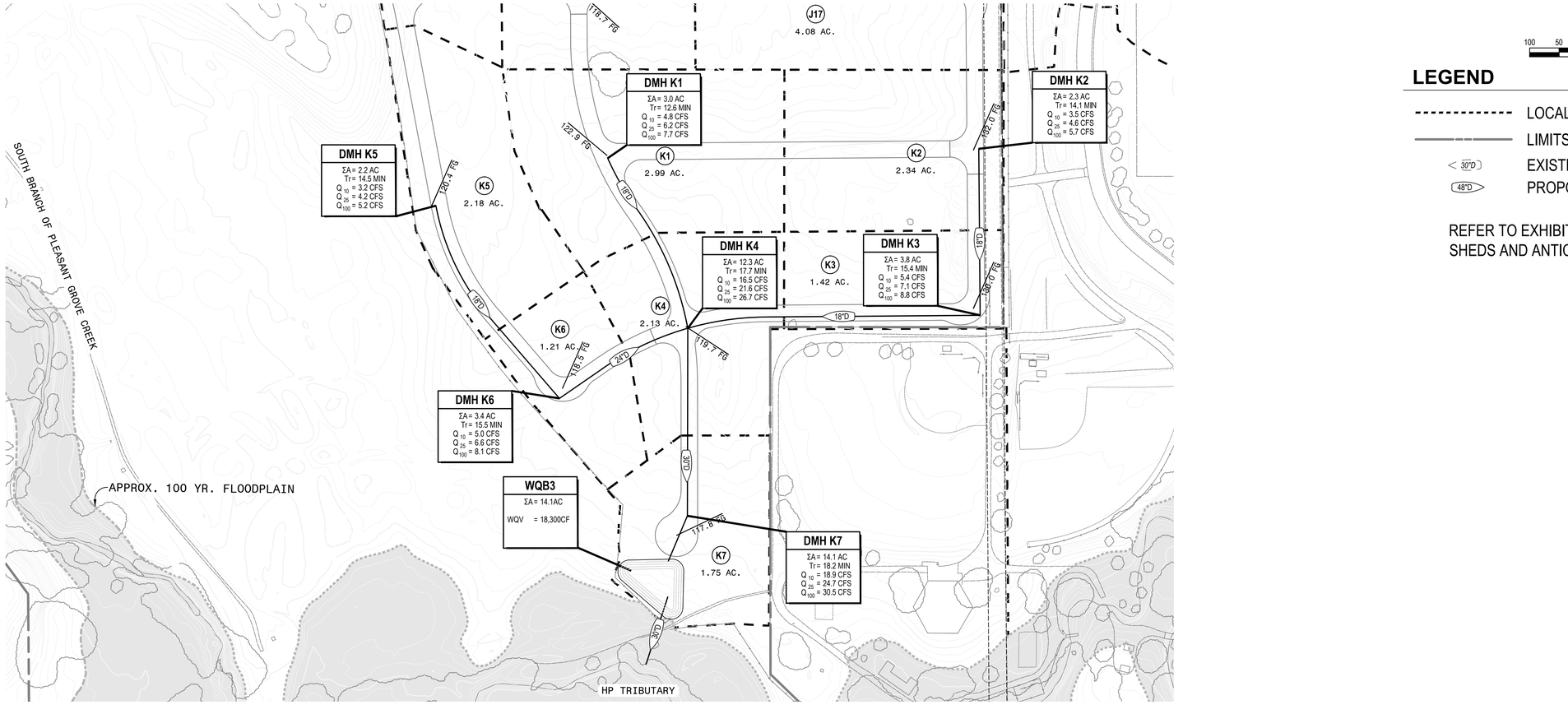
POST-DEVELOPMENT SITE ENLARGED NORTHERN DRAINAGE SHED MAP

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA
DATE: 1.29.2015
DATE REVISED: 6.11.2015



GRAPHIC SCALE
100 50 0 100 200
1 in = 100 ft

LEGEND

- LOCAL SHED BOUNDARY
- LIMITS OF CAMPUS OAKS
- < 30"D > EXISTING STORM DRAIN PIPE SIZE
- 48"D PROPOSED STORM DRAIN PIPE SIZE

REFER TO EXHIBIT WQ1 FOR WATER QUALITY SHEDS AND ANTICIPATED BMPs.

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POST-DEVELOPMENT SITE OVERLAND RELEASE MAP

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA
DATE: 4.16.2015

BLUE OAKS BLVD

GRAPHIC SCALE
100 50 0 100 200
1 in = 100 ft

LEGEND

- MAJOR SHED BOUNDARY BETWEEN MAIN AND SOUTH BRANCH OF PLEASANT GROVE CREEKS
- LOCAL SHED BOUNDARY
- LIMITS IF CAMPUS OAKS
- OVERLAND RELEASE DIRECTION
- OVERLAND RELEASE ROUTE
- PLUGGED DI
- OPEN DI

SEE OR2

OR1

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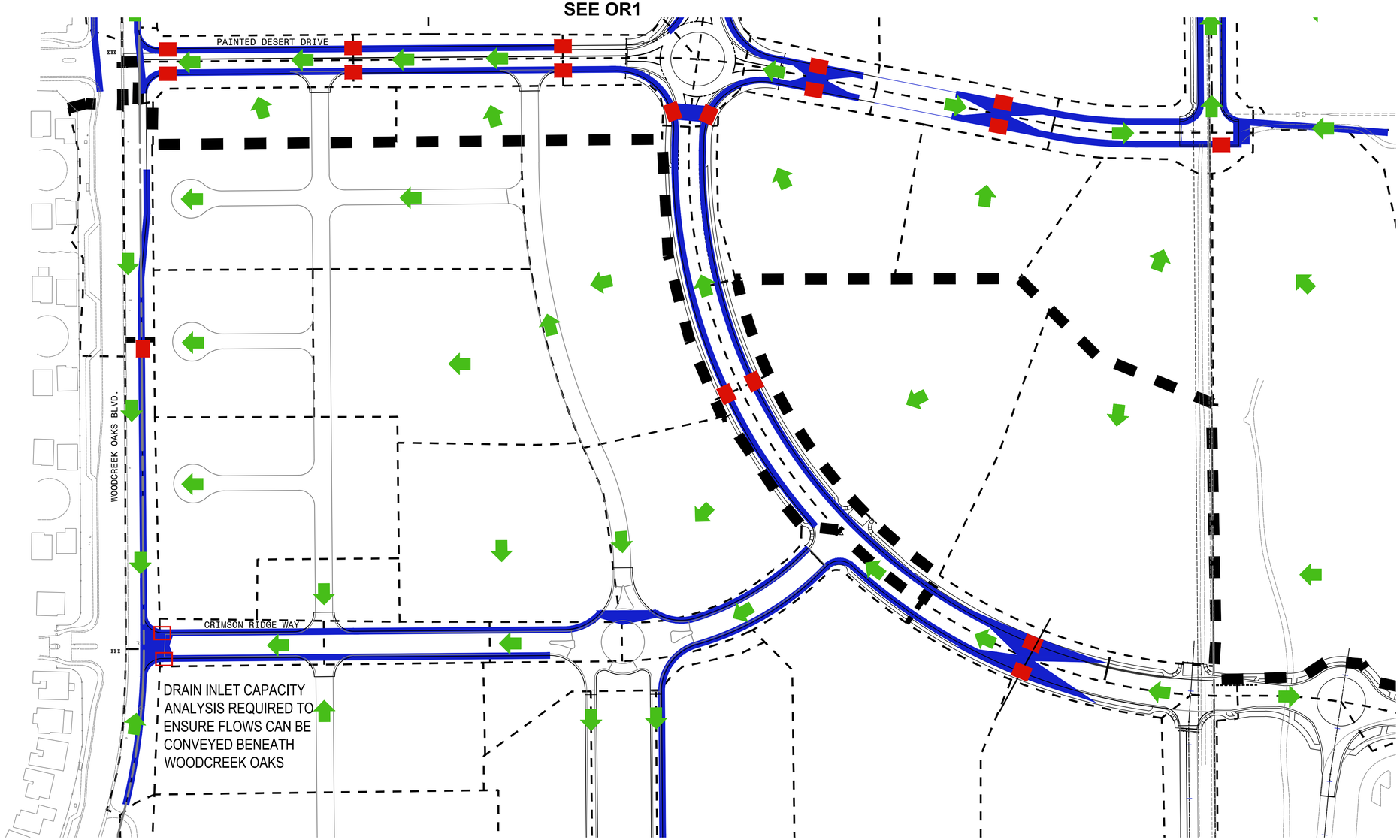
POST-DEVELOPMENT SITE OVERLAND RELEASE MAP

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA
DATE: 4.16.2015
DATE REVISED: 6.11.2015



GRAPHIC SCALE
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1 in = 100 ft

LEGEND

- MAJOR SHED BOUNDARY BETWEEN MAIN AND SOUTH BRANCH OF PLEASANT GROVE CREEKS
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- OVERLAND RELEASE DIRECTION
- OVERLAND RELEASE ROUTE
- PLUGGED DI
- OPEN DI

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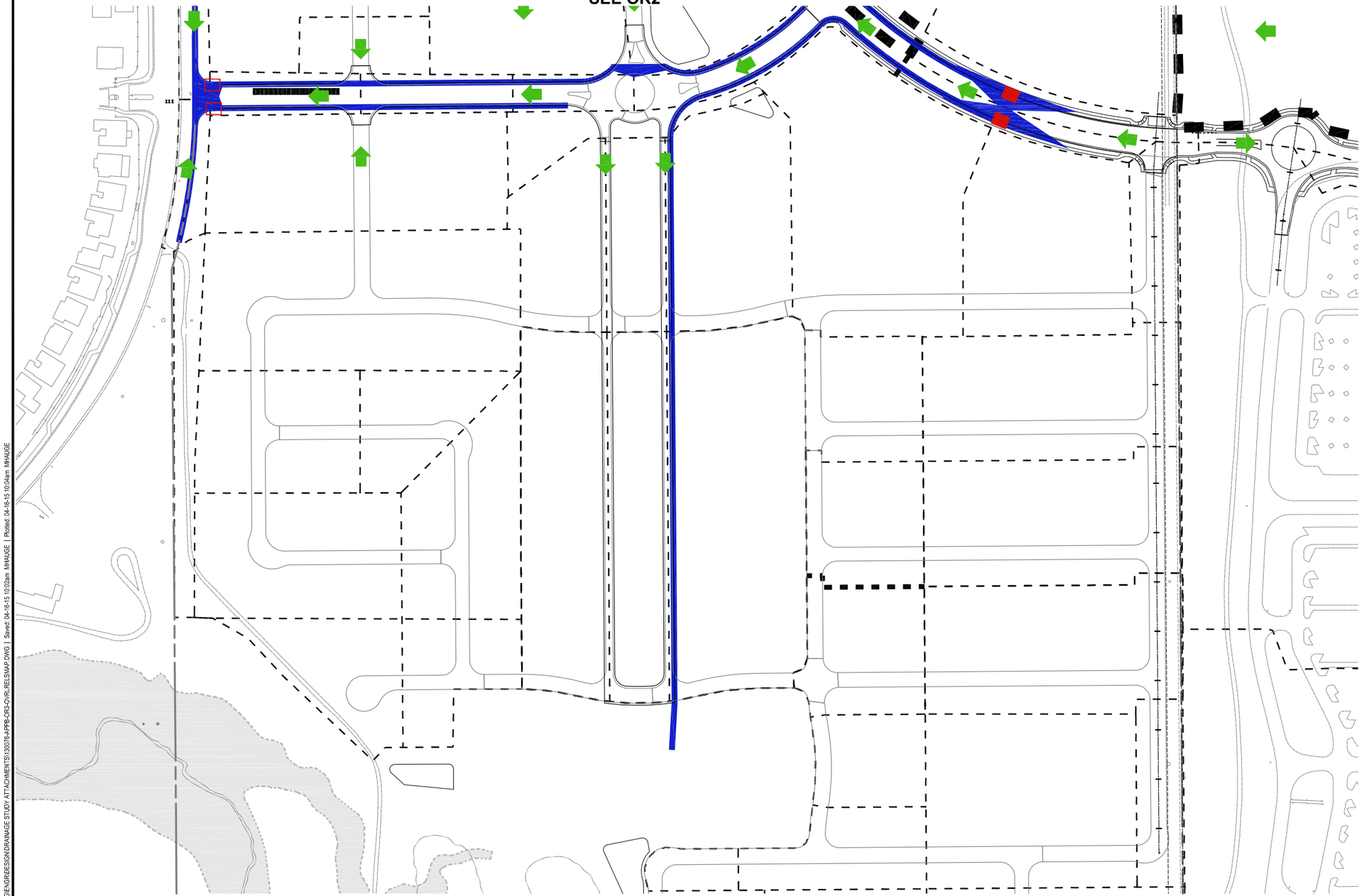
POST-DEVELOPMENT SITE OVERLAND RELEASE MAP

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA
DATE: 4.16.2015



GRAPHIC SCALE
100 50 0 100 200
1 in = 100 ft

LEGEND

- MAJOR SHED BOUNDARY BETWEEN MAIN AND SOUTH BRANCH OF PLEASANT GROVE CREEKS
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- OVERLAND RELEASE ROUTE
- PLUGGED DI
- OPEN DI

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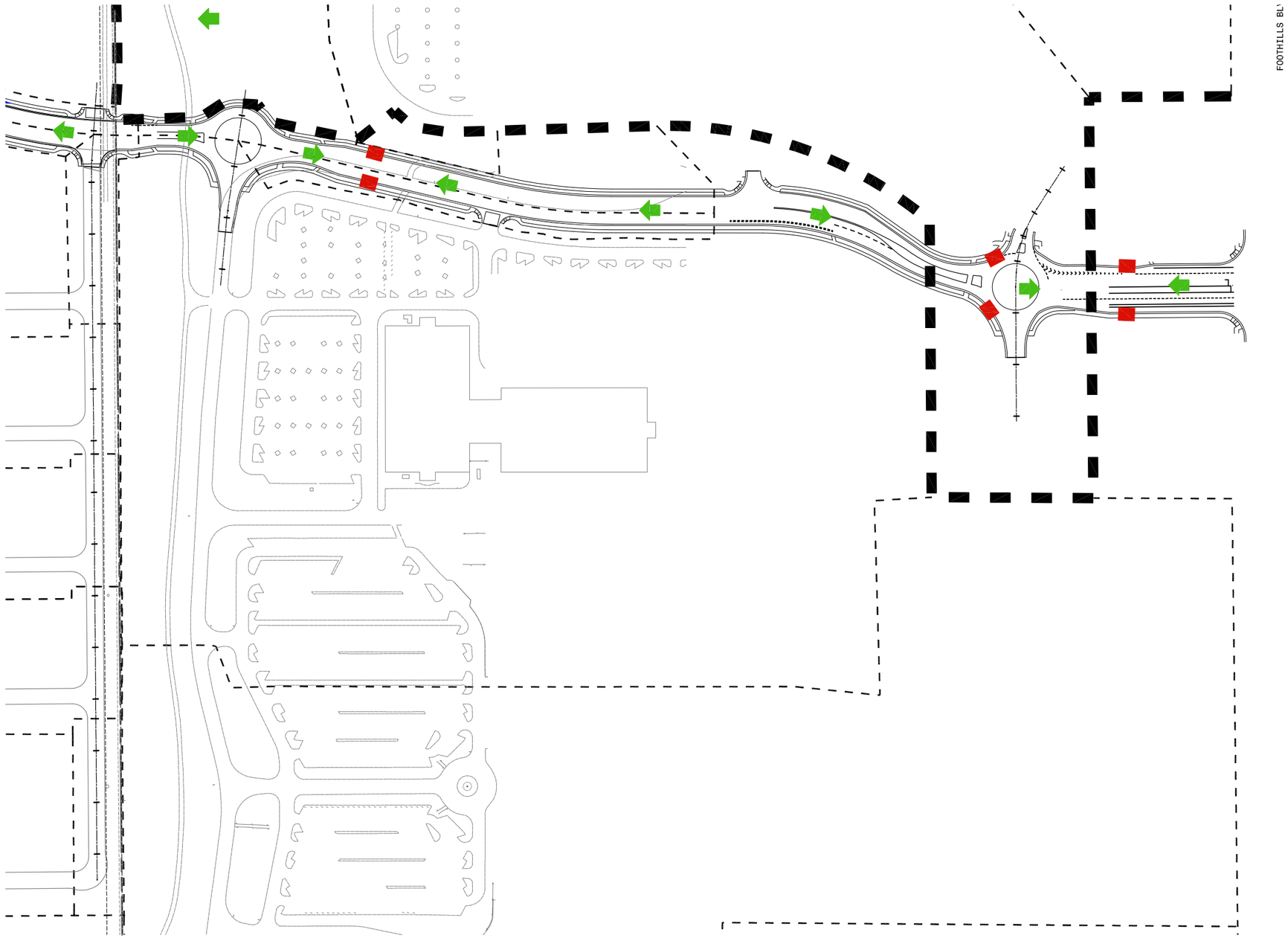
POST-DEVELOPMENT SITE OVERLAND RELEASE MAP

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA
DATE: 4.16.2015



GRAPHIC SCALE
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1 in = 100 ft

LEGEND

- MAJOR SHED BOUNDARY BETWEEN MAIN AND SOUTH BRANCH OF PLEASANT GROVE CREEKS
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- LIMITS IF CAMPUS OAKS
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- PLUGGED DI

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Appendix C

New Meadow Drive & Blue Oaks Blvd.

HYDRAULIC MODEL RESULTS

FOR THE

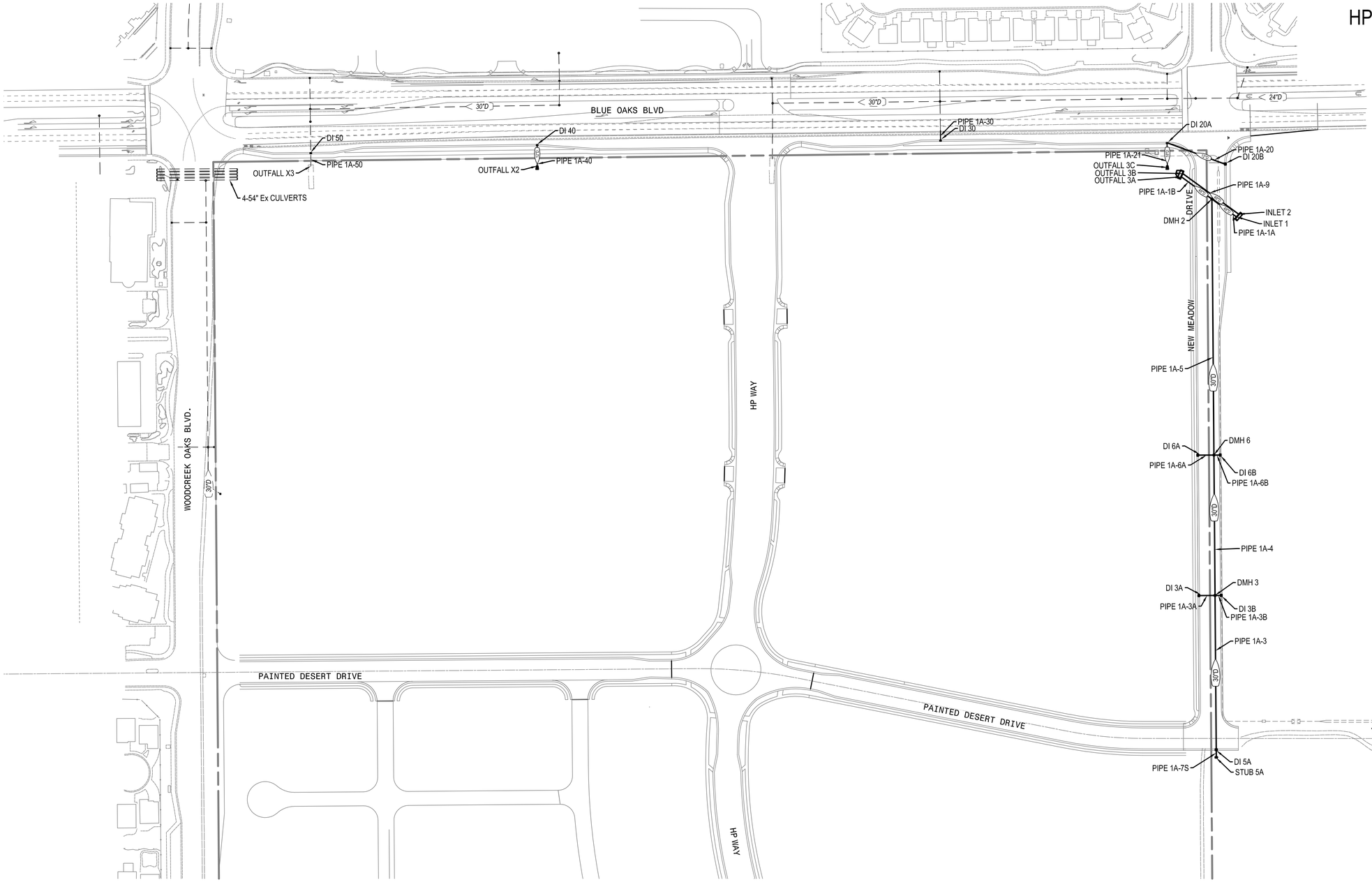
10-, 25-, AND 100-YEAR STORM EVENTS

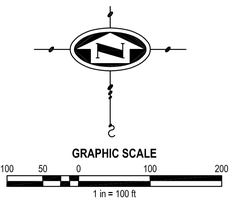
NEW MEADOW DRIVE AND BLUE OAKS BLVD
STORM DRAIN EXHIBIT

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA
DATE: 6.03.2015





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New Meadow Drive & Blue Oaks Blvd

DRAINAGE INLET CALCULATION

Road Name	Node Name	Inlet Location Condition	Cum. Ac.	RUN (min)	Fi & Pervious	10-Year Peak Flow (cfs)	10-Year Depth at DI (inch)	25-Year Peak Flow (cfs)	25-Year Depth at DI (inch)	100-Year Peak Flow (cfs)	100-Year Depth at DI (inch)
New Meadow Drive	DI 5A	Sag	0.5	10.4	0.08 / 30%	0.8	1.5	1.1	1.7	1.4	1.9
New Meadow Drive	DI 3A	Sag	0.7	9.5	0.08 / 30%	1.4	1.9	1.8	2.1	2.2	2.3
New Meadow Drive	DI 3B	Sag	0.5	10.2	0.08 / 30%	0.8	1.5	1.1	1.7	1.4	1.9
New Meadow Drive	DI 6A	Sag	0.4	11.3	0.08 / 30%	0.7	1.5	1.0	1.7	1.2	1.8
New Meadow Drive	DI 6B	Sag	0.4	11.3	0.08 / 30%	0.7	1.5	0.9	1.6	1.1	1.7
Blue Oaks Blvd	DI 20A	Sag	0.7	10.4	0.08 / 30%	1.3	1.8	1.7	2.0	2.0	2.2
New Meadow Drive	DI 20B	Sag	1.9	9.0	0.08 / 30%	3.6	4.5	4.7	6.8	5.8	8.8
Blue Oaks Blvd	DI 30	Grade	1.2	11.9	0.08 / 30%	1.9	2.1	2.5	2.4	3.1	3.4
Blue Oaks Blvd	DI 40	Grade	0.6	10.5	0.08 / 30%	1.1	1.7	1.4	1.9	1.7	2.0
Blue Oaks Blvd	DI 50	Sag	1.0	9.2	0.08 / 30%	1.9	2.1	2.5	2.4	3.0	3.2

New Meadow Drive & Blue Oaks Blvd

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/26/2015
Revised:

10 Year Design Storm

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

						Node Area			Pipe Data																		HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 10 Year (cfs/acre)	Fi	Pervious	Qp 10 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	10 Yr HGL Slope	U/S 10 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
New Meadow	STUB 5A	0	DI 5A	51+19.64	1A-7S	11.36	11.36	A1,A3	150.0	11.4	0.0	0.0100	20	7.4	7.4	2.13	0.08	30%	23.89	0.015	124.70	117.02	116.97	30	0.0030	15	19.5	4.0	0.1	0.0045	122.77	HGL	-1.9
	DI 5A	51+19.64	DMH 3	54+28.58	1A-3	0.48	11.84	A2	50.0	0.5	325.0	0.0100	20	10.4	10.4	1.80	0.08	30%	21.02	0.015	124.13	116.97	115.42	30	0.0050	309	25.2	5.1	1.0	0.0035	122.70	HGL	-1.4
	DI 3A	54+28.60	DMH 3	54+28.58	1A-3A	0.73	0.73	A5	50.0	0.7	315.0	0.0100	20	9.5	9.5	1.88	0.08	30%	1.35	0.015	122.73	117.73	116.92	12	0.0261	31	5.0	6.4	0.1	0.0019	121.68	HGL	-1.1
	DI 3B	54+28.60	DMH 3	54+28.58	1A-3B	0.47	0.47	A6	50.0	0.5	315.0	0.0100	20	10.2	10.2	1.82	0.08	30%	0.84	0.015	122.73	117.73	116.92	12	0.0736	11	8.4	10.7	0.0	0.0007	121.63	HGL	-1.1
	DMH 3	54+28.58	DMH 6	57+10	1A-4	0.00	13.04		0.0	0.0	0.0	0.0100	20	0.0	11.4	1.72	0.08	30%	22.10	0.015	123.07	115.42	115.14	30	0.0010	281	11.2	2.3	2.0	0.0039	121.62	HGL	-1.5
	DI 6A	57+10	DMH 6	57+10	1A-6A	0.43	0.43	A7	50.0	0.4	360.0	0.0100	20	11.3	11.3	1.73	0.08	30%	0.74	0.015	122.52	117.52	116.64	12	0.0284	31	5.2	6.6	0.1	0.0006	120.55	HGL	-2.0
	DI 6B	57+10	DMH 6	57+10	1A-6B	0.41	0.41	A8	50.0	0.4	360.0	0.0100	20	11.3	11.3	1.72	0.08	30%	0.70	0.015	122.52	117.52	116.64	12	0.0800	11	8.7	11.1	0.0	0.0005	120.54	HGL	-2.0
	DMH 6	57+10	DMH 2	62+22.65	1A-5	0.00	13.88		0.0	0.0	0.0	0.0100	20	0.0	13.4	1.58	0.08	30%	21.64	0.015	122.86	115.14	114.63	30	0.0010	513	11.2	2.3	3.7	0.0037	120.53	HGL	-2.3
	INLET 1		DMH 2		1A-1A	53.36	53.36	1/2 OFFSITE	0.0	53.4	0.0	0.0100	20	27.6	27.6	0.99	0.08	30%	51.69	0.015	120.00	114.90	114.63	48	0.0044	61	82.8	6.6	0.2	0.0017	118.90	Soffit	-1.1
	DMH 2	62+22.65	OUTFALL 3A		1A-1B	0.00	67.24		0.0	0.0	0.0	0.0100	20	0.0	27.8	0.99	0.08	30%	64.81	0.015	120.75	114.63	114.30	48	0.0044	75	82.5	6.6	0.2	0.0027	118.63	Soffit	-2.1
																										OUTFALL 3A Starting HGL Assumed at Top of Pipe					118.30	Soffit	
	INLET 2		OUTFALL 3B		1A-9	53.36	53.36	1/2 OFFSITE	0.0	53.4	0.0	0.0100	20	27.6	27.6	0.99	0.08	30%	51.69	0.015	120.00	114.48	114.30	48	0.0013	139	44.8	3.6	0.7	0.0017	118.54	HGL	-1.5
																										OUTFALL 3B Starting HGL Assumed at Top of Pipe					118.30	Soffit	
	DI 20B	62+92.57	DI 20A	117+90.19	1A-20	1.89	1.89	A10,A10A	50.0	1.9	360.0	0.0100	20	9.0	9.0	1.94	0.08	30%	3.61	0.015	119.33	114.83	114.48	12	0.0029	121	1.7	2.1	1.0	0.0137	117.87	HGL	-1.5
Blue Oaks Blvd	DI 20A	117+90.19	OUTFALL 3C		1A-21	0.71	2.60	A9	50.0	0.7	360.0	0.0100	20	10.4	10.4	1.80	0.08	30%	4.62	0.015	118.67	114.48	113.60	18	0.0200	44	12.9	7.3	0.1	0.0026	116.21	HGL	-2.5
																										OUTFALL 3C Starting HGL Assumed 2.5 ft Normal Depth in Channe					116.10	HGL	
	DI 30	113+36.00			1A-30	1.16	1.16	D5	50.0	1.2	500.0	0.0100	20	11.89	11.89	1.68	0.08	30%	1.93	0.015	117.01	113.69	113.37	12	0.0180	18	4.1	5.3	0.1	0.0039	115.94	HGL	-1.1
																															115.87	HGL	
	DI 40	105+40.82	OUTFALL X2		1A-40	0.60	0.60	D2	50.0	0.6	350.0	0.0100	20	10.49	10.49	1.79	0.08	30%	1.06	0.015	113.75	110.20	110.00	12	0.0050	40	2.2	2.8	0.2	0.0012	112.5471	HGL	-1.2
																										OUTFALL X2 Starting HGL Assumed 2.5 ft Normal Depth in Channe					112.50	HGL	
	DI 50	100+78.09	OUTFALL X3		1A-50	5.96	5.96	E2,E3,D3	50.0	6.0	500.0	0.0100	20	9.19	9.19	1.91	0.08	30%	11.26	0.015	111.95	107.75	107.33	30	0.0100	42	35.5	7.2	0.1	0.0010	110.25	Soffit	-1.7
																										OUTFALL X3 Starting HGL Assumed 2.5 ft Normal Depth in Channe					109.83	Soffit	

OFFSITE SHED = Q1+Q2+Q3+Q5+CK1+A4+A8A

New Meadow Drive & Blue Oaks Blvd

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/26/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

25 Year Design Storm

						Node Area			Pipe Data																		HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 25 Year (cfs/acre)	Fi	Pervious	Qp 25 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	25 Yr HGL Slope	U/S 25 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
New Meadow	STUB 5A	0	DI 5A	51+19.64	1A-7S	11.36	11.36	A1,A3	150.0	11.4	0.0	0.0100	20	7.4	7.4	2.77	0.08	30%	31.14	0.015	124.70	117.02	116.97	30	0.0030	15	19.5	4.0	0.1	0.0077	~~125.69~~	HGL	STREET FLOW
	DI 5A	51+19.64	DMH 3	54+28.58	1A-3	0.48	11.84	A2	50.0	0.5	325.0	0.0100	20	10.4	10.4	2.34	0.08	30%	27.41	0.015	124.13	116.97	115.42	30	0.0050	309	25.2	5.1	1.0	0.0060	~~125.57~~	HGL	STREET FLOW
	DI 3A	54+28.60	DMH 3	54+28.58	1A-3A	0.73	0.73	A5	50.0	0.7	315.0	0.0100	20	9.5	9.5	2.44	0.08	30%	1.77	0.015	122.73	117.73	116.92	12	0.0261	31	5.0	6.4	0.1	0.0033	~~123.83~~	HGL	STREET FLOW
	DI 3B	54+28.60	DMH 3	54+28.58	1A-3B	0.47	0.47	A6	50.0	0.5	315.0	0.0100	20	10.2	10.2	2.36	0.08	30%	1.10	0.015	122.73	117.73	116.92	12	0.0736	11	8.4	10.7	0.0	0.0013	~~123.75~~	HGL	STREET FLOW
	DMH 3	54+28.58	DMH 6	57+10	1A-4	0.00	13.04		0.0	0.0	0.0	0.0100	20	0.0	11.4	2.23	0.08	30%	28.82	0.015	123.07	115.42	115.14	30	0.0010	281	11.2	2.3	2.0	0.0066	~~123.73~~	HGL	STREET FLOW
	DI 6A	57+10	DMH 6	57+10	1A-6A	0.43	0.43	A7	50.0	0.4	360.0	0.0100	20	11.3	11.3	2.25	0.08	30%	0.96	0.015	122.52	117.52	116.64	12	0.0284	31	5.2	6.6	0.1	0.0010	121.91	HGL	-0.6
	DI 6B	57+10	DMH 6	57+10	1A-6B	0.41	0.41	A8	50.0	0.4	360.0	0.0100	20	11.3	11.3	2.24	0.08	30%	0.92	0.015	122.52	117.52	116.64	12	0.0800	11	8.7	11.1	0.0	0.0009	121.89	HGL	-0.6
	DMH 6	57+10	DMH 2	62+22.65	1A-5	0.00	13.88		0.0	0.0	0.0	0.0100	20	0.0	13.4	2.06	0.08	30%	28.23	0.015	122.86	115.14	114.63	30	0.0010	513	11.2	2.3	3.7	0.0063	121.88	HGL	-1.0
	INLET 1		DMH 2		1A-1A	53.36	53.36	1/2 OFFSITE	0.0	53.4	0.0	0.0100	20	27.6	27.6	1.29	0.08	30%	67.58	0.015	120.00	114.90	114.63	48	0.0044	61	82.8	6.6	0.2	0.0029	118.90	Soffit	-1.1
	DMH 2	62+22.65	OUTFALL 3A		1A-1B	0.00	67.24		0.0	0.0	0.0	0.0100	20	0.0	27.8	1.28	0.08	30%	84.74	0.015	120.75	114.63	114.30	48	0.0044	75	82.5	6.6	0.2	0.0046	118.65	HGL	-2.1
																										OUTFALL 3A Starting HGL Assumed at Top of Pipe					118.30	Soffit	
	INLET 2		OUTFALL 3B		1A-9	53.36	53.36	1/2 OFFSITE	0.0	53.4	0.0	0.0100	20	27.6	27.6	1.29	0.08	30%	67.58	0.015	120.00	114.48	114.30	48	0.0013	139	44.8	3.6	0.7	0.0029	118.71	HGL	-1.3
																										OUTFALL 3B Starting HGL Assumed at Top of Pipe					118.30	Soffit	
	DI 20B	62+92.57	DI 20A	117+90.19	1A-20	1.89	1.89	A10,A10A	50.0	1.9	360.0	0.0100	20	9.0	9.0	2.52	0.08	30%	4.71	0.015	119.33	114.83	114.48	12	0.0029	121	1.7	2.1	1.0	0.0233	119.11	HGL	-0.2
Blue Oaks Blvd	DI 20A	117+90.19	OUTFALL 3C		1A-21	0.71	2.60	A9	50.0	0.7	360.0	0.0100	20	10.4	10.4	2.34	0.08	30%	6.03	0.015	118.67	114.48	113.60	18	0.0200	44	12.9	7.3	0.1	0.0044	116.29	HGL	-2.4
																										OUTFALL 3C Starting HGL Assumed 2.5 ft Normal Depth in Channel					116.10	HGL	
	DI 30	113+36.00			1A-30	1.16	1.16	D5	50.0	1.2	500.0	0.0100	20	11.89	11.89	2.19	0.08	30%	2.51	0.015	117.01	113.69	113.37	12	0.0180	18	4.1	5.3	0.1	0.0066	115.99	HGL	-1.0
																															115.87	HGL	
	DI 40	105+40.82	OUTFALL X2		1A-40	0.60	0.60	D2	50.0	0.6	350.0	0.0100	20	10.49	10.49	2.33	0.08	30%	1.38	0.015	113.75	110.20	110.00	12	0.0050	40	2.2	2.8	0.2	0.0020	112.5801	HGL	-1.2
																										OUTFALL X2 Starting HGL Assumed 2.5 ft Normal Depth in Channel					112.50	HGL	
	DI 50	100+78.09	OUTFALL X3		1A-50	5.96	5.96	E2,E3,D3	50.0	6.0	500.0	0.0100	20	9.19	9.19	2.49	0.08	30%	14.68	0.015	111.95	107.75	107.33	30	0.0100	42	35.5	7.2	0.1	0.0017	110.25	Soffit	-1.7
																										OUTFALL X3 Starting HGL Assumed 2.5 ft Normal Depth in Channel					109.83	Soffit	

OFFSITE SHED = Q1+Q2+Q3+Q5+CK1+A4+A8A

New Meadow Drive & Blue Oaks Blvd

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/26/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

100 Year Design Storm

						Node Area			Pipe Data																		HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 100 Year (cfs/acre)	Fi	Pervious	Qp 100 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	100 Yr HGL Slope	U/S 100 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
New Meadow	STUB 5A	0	DI 5A	51+19.64	1A-7S	11.36	11.36	A1,A3	150.0	11.4	0.0	0.0100	20	7.4	7.4	3.40	0.08	30%	38.39	0.015	124.70	117.02	116.97	30	0.0030	15	19.5	4.0	0.1	0.0117	~~129.54~~	HGL	STREET FLOW
	DI 5A	51+19.64	DMH 3	54+28.58	1A-3	0.48	11.84	A2	50.0	0.5	325.0	0.0100	20	10.4	10.4	2.88	0.08	30%	33.80	0.015	124.13	116.97	115.42	30	0.0050	309	25.2	5.1	1.0	0.0090	~~129.36~~	HGL	STREET FLOW
	DI 3A	54+28.60	DMH 3	54+28.58	1A-3A	0.73	0.73	A5	50.0	0.7	315.0	0.0100	20	9.5	9.5	3.00	0.08	30%	2.18	0.015	122.73	117.73	116.92	12	0.0261	31	5.0	6.4	0.1	0.0050	~~126.72~~	HGL	STREET FLOW
	DI 3B	54+28.60	DMH 3	54+28.58	1A-3B	0.47	0.47	A6	50.0	0.5	315.0	0.0100	20	10.2	10.2	2.91	0.08	30%	1.36	0.015	122.73	117.73	116.92	12	0.0736	11	8.4	10.7	0.0	0.0019	~~126.59~~	HGL	STREET FLOW
	DMH 3	54+28.58	DMH 6	57+10	1A-4	0.00	13.04		0.0	0.0	0.0	0.0100	20	0.0	11.4	2.75	0.08	30%	35.54	0.015	123.07	115.42	115.14	30	0.0010	281	11.2	2.3	2.0	0.0100	~~126.57~~	HGL	STREET FLOW
	DI 6A	57+10	DMH 6	57+10	1A-6A	0.43	0.43	A7	50.0	0.4	360.0	0.0100	20	11.3	11.3	2.77	0.08	30%	1.19	0.015	122.52	117.52	116.64	12	0.0284	31	5.2	6.6	0.1	0.0015	~~123.80~~	HGL	STREET FLOW
	DI 6B	57+10	DMH 6	57+10	1A-6B	0.41	0.41	A8	50.0	0.4	360.0	0.0100	20	11.3	11.3	2.76	0.08	30%	1.13	0.015	122.52	117.52	116.64	12	0.0800	11	8.7	11.1	0.0	0.0013	~~123.77~~	HGL	STREET FLOW
	DMH 6	57+10	DMH 2	62+22.65	1A-5	0.00	13.88		0.0	0.0	0.0	0.0100	20	0.0	13.4	2.53	0.08	30%	34.82	0.015	122.86	115.14	114.63	30	0.0010	513	11.2	2.3	3.7	0.0096	~~123.75~~	HGL	STREET FLOW
	INLET 1		DMH 2		1A-1A	53.36	53.36	1/2 OFFSITE	0.0	53.4	0.0	0.0100	20	27.6	27.6	1.59	0.08	30%	83.47	0.015	120.00	114.90	114.63	48	0.0044	61	82.8	6.6	0.2	0.0045	119.10	HGL	-0.9
	DMH 2	62+22.65	OUTFALL 3A		1A-1B	0.00	67.24		0.0	0.0	0.0	0.0100	20	0.0	27.8	1.58	0.08	30%	104.67	0.015	120.75	114.63	114.30	48	0.0044	75	82.5	6.6	0.2	0.0071	118.83	HGL	-1.9
																											OUTFALL 3A Starting HGL Assumed at Top of Pipe				118.30	Soffit	
	INLET 2		OUTFALL 3B		1A-9	53.36	53.36	1/2 OFFSITE	0.0	53.4	0.0	0.0100	20	27.6	27.6	1.59	0.08	30%	83.47	0.015	120.00	114.48	114.30	48	0.0013	139	44.8	3.6	0.7	0.0045	118.93	HGL	-1.1
																											OUTFALL 3B Starting HGL Assumed at Top of Pipe				118.30	Soffit	
	DI 20B	62+92.57	DI 20A	117+90.19	1A-20	1.89	1.89	A10,A10A	50.0	1.9	360.0	0.0100	20	9.0	9.0	3.10	0.08	30%	5.80	0.015	119.33	114.83	114.48	12	0.0029	121	1.7	2.1	1.0	0.0354	~~120.67~~	HGL	STREET FLOW
	DI 20A	117+90.19	OUTFALL 3C		1A-21	0.71	2.60	A9	50.0	0.7	360.0	0.0100	20	10.4	10.4	2.88	0.08	30%	7.43	0.015	118.67	114.48	113.60	18	0.0200	44	12.9	7.3	0.1	0.0067	116.39	HGL	-2.3
																											OUTFALL 3C Starting HGL Assumed 2.5 ft Normal Depth in Channel				116.10	HGL	
	DI 30	113+36.00			1A-30	1.16	1.16	D5	50.0	1.2	500.0	0.0100	20	11.89	11.89	2.69	0.08	30%	3.10	0.015	117.01	113.69	113.37	12	0.0180	18	4.1	5.3	0.1	0.0101	116.05	HGL	-1.0
																															115.87	HGL	
Blue Oaks Blvd	DI 40	105+40.82	OUTFALL X2		1A-40	0.60	0.60	D2	50.0	0.6	350.0	0.0100	20	10.49	10.49	2.87	0.08	30%	1.70	0.015	113.75	110.20	110.00	12	0.0050	40	2.2	2.8	0.2	0.0030	112.6218	HGL	-1.1
																											OUTFALL X2 Starting HGL Assumed 2.5 ft Normal Depth in Channel				112.50	HGL	
	DI 50	100+78.09	OUTFALL X3		1A-50	5.96	5.96	E2,E3,D3	50.0	6.0	500.0	0.0100	20	9.19	9.19	3.06	0.08	30%	18.10	0.015	111.95	107.75	107.33	30	0.0100	42	35.5	7.2	0.1	0.0026	110.25	Soffit	-1.7
																											OUTFALL X3 Starting HGL Assumed 2.5 ft Normal Depth in Channel				109.83	Soffit	

OFFSITE SHED = Q1+Q2+Q3+Q5+CK1+A4+A8A

Appendix D

Painted Desert Drive

HYDRAULIC MODEL RESULTS

FOR THE

10-, 25-, AND 100-YEAR STORM EVENTS

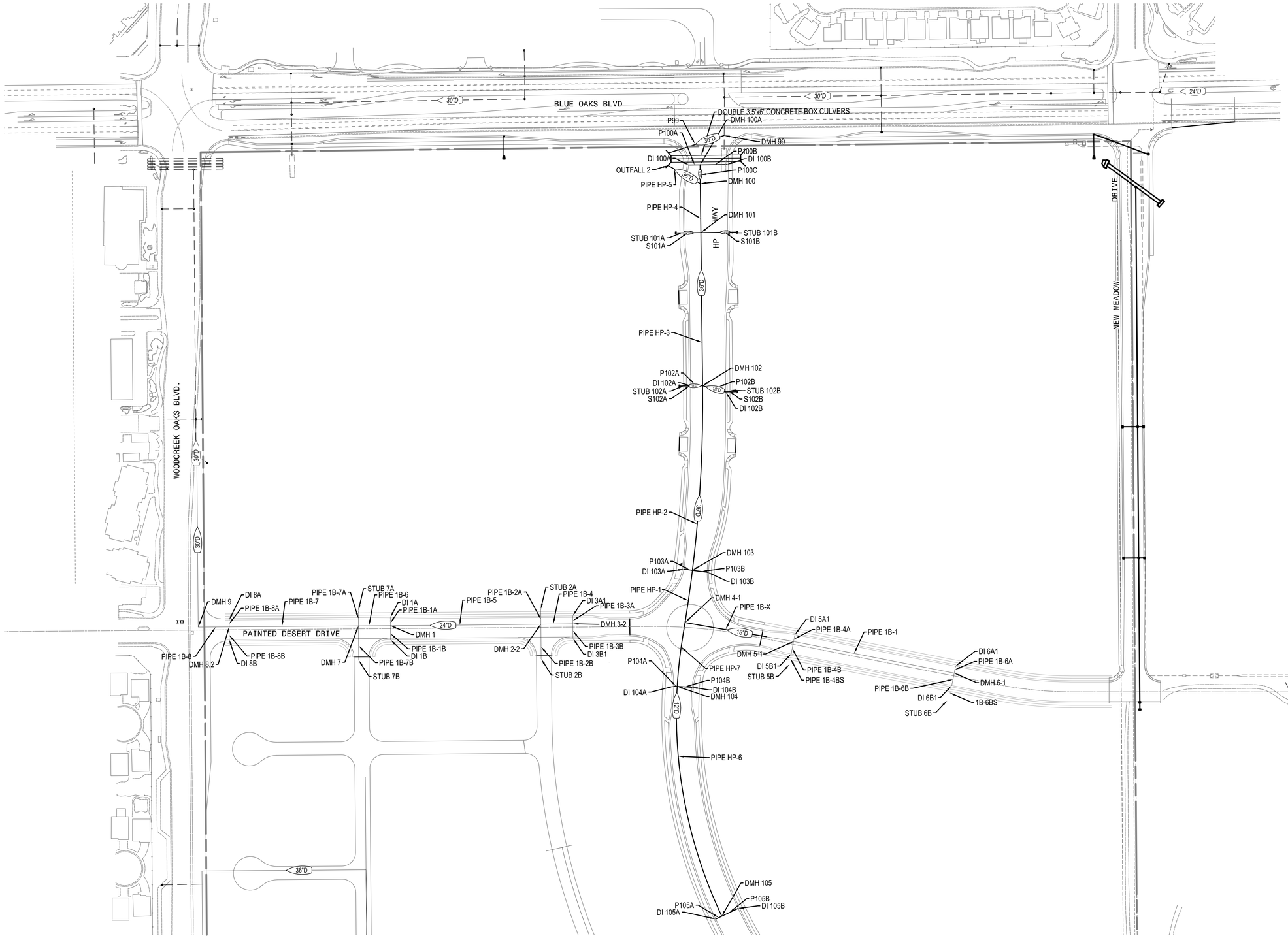
PAINTED DESERT DRIVE & HP WAY STORM DRAIN EXHIBIT

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA

DATE: 6.03.2015



GRAPHIC SCALE

100 50 0 100 200

1 in = 100 ft

MORTON & PITALO, INC.

CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING
LANDSCAPE ARCHITECTURE • TRAFFIC ENGINEERING

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Dwg: X:\2013\13-0076-00\DWG\ENGR\DESIGN\DRAINAGE STUDY ATTACHMENTS\130076-APPF-HP WAY NORTH -SDE.DWG | Saved: 06-03-15 05:34pm MHAUGE | Plotted: 06-03-15 05:37pm MHAUGE

Painted Desert Drive (West) and Woodcreek Oaks Blvd (North)

DRAINAGE INLET CALCULATION

Road Name	Node Name	Cum. Ac.	RUN (min)	Inlet Location Condition	Fi & Pervious	10-Year Peak Flow (cfs)	10-Year Depth at DI (inch)	25-Year Peak Flow (cfs)	25-Year Depth at DI (inch)	100-Year Peak Flow (cfs)	100-Year Depth at DI (inch)
Painted Desert Drive	DI 3A1	0.2	8.6	Grade	0.08 / 30%	0.5	1.3	0.6	1.4	0.8	1.5
Painted Desert Drive	DI 3B1	0.4	8.2	Grade	0.08 / 30%	0.7	1.5	0.9	1.6	1.2	1.8
Painted Desert Drive	DI 1A	0.4	12.0	Grade	0.08 / 30%	0.7	1.5	0.9	1.6	1.1	1.7
Painted Desert Drive	DI 1B	0.5	11.8	Grade	0.08 / 30%	0.8	1.5	1.0	1.7	1.2	1.8
Painted Desert Drive	DI 8A	0.4	11.0	Sag	0.08 / 30%	0.8	1.5	1.0	1.7	1.2	1.8
Painted Desert Drive	DI 8B	0.5	10.9	Sag	0.08 / 30%	0.8	1.5	1.1	1.7	1.4	1.9
Painted Desert Drive	DI AB	0.6	7.7	Grade	0.08 / 30%	1.3	1.8	1.7	2.0	2.1	2.2
Painted Desert Drive	EXDI BA	0.8	10.8	Sag	0.08 / 30%	1.5	1.9	1.9	2.1	2.4	2.4
Painted Desert Drive	DI BB	1.0	10.5	Sag	0.08 / 30%	1.8	2.1	2.3	2.3	2.8	2.9

Painted Desert Drive (East) and HP Way (North)

DRAINAGE INLET CALCULATION

Road Name	Node Name	Cum. Ac.	RUN (min)	Inlet Location Condition	Fi & Pervious	10-Year Peak Flow at DI (cfs)	10-Year Depth at DI (inch)	25-Year Peak Flow at DI (cfs)	25-Year Depth at DI (inch)	100-Year Peak Flow at DI (cfs)	100-Year Depth at DI (inch)
HP Way	DI 105A	0.3	14.8	Sag	0.08 / 30%	0.5	1.3	0.6	1.4	0.7	1.5
HP Way	DI 105B	0.7	13.9	Sag	0.08 / 30%	1.0	1.7	1.4	1.9	1.7	2.0
HP Way	DI 104A	0.6	10.5	Sag	0.08 / 30%	1.0	1.7	1.4	1.9	1.7	2.0
HP Way	DI 104B	0.8	12.2	Sag	0.08 / 30%	1.4	1.9	1.8	2.1	2.2	2.3
HP Way	DI 103A	0.1	5.2	Sag	0.08 / 30%	0.3	0.9	0.4	1.2	0.5	1.3
HP Way	DI 103B	0.2	5.1	Sag	0.08 / 30%	0.6	1.4	0.7	1.5	0.9	1.6
HP Way	DI 102A	1.3	11.4	Sag	0.08 / 30%	1.0	1.7	1.4	1.9	1.7	2.0
HP Way	DI 102B	3.4	11.5	Sag	0.08 / 30%	1.0	1.7	1.3	1.8	1.6	2.0
HP Way	DI 100A	0.6	10.1	Sag	0.08 / 30%	1.1	1.7	1.4	1.9	1.8	2.1
HP Way	DI 100B	1.3	11.4	Sag	0.08 / 30%	2.2	2.3	2.9	3.0	3.5	4.3
Painted Desert Drive	DI 6A1	0.4	9.2	Sag	0.08 / 30%	0.7	1.5	0.9	1.6	1.1	1.7
Painted Desert Drive	DI 6B1	2.1	9.2	Sag	0.08 / 30%	0.7	1.5	0.9	1.6	1.1	1.7
Painted Desert Drive	DI 5A1	0.3	6.9	Sag	0.08 / 30%	0.6	1.4	0.8	1.5	1.0	1.7
Painted Desert Drive	DI 5B1	2.9	7.0	Sag	0.08 / 30%	0.6	1.4	0.8	1.5	0.9	1.6

Painted Desert Drive (West) and Woodcreek Oaks Blvd (North)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/27/2015
Revised:

10 Year Design Storm

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

						Node Area													Pipe Data										HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 10 Year (cfs/acre)	Fi	Pervious	Qp 10 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	10 Yr HGL Slope	U/S 10 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
Painted Desert	DI 3A1	18+25.94	DMH 3-2	18+25.94	1B-3A	0.24	0.2	G3	50.0	0.2	200.0	0.0100	20	8.6	8.6	1.98	0.08	30%	0.47	0.015	123.35	116.93	116.23	12	0.0467	15	6.7	8.5	0.0	0.0002	117.93	Soffit	-5.4
	DI 3B1	18+25.94	DMH 3-2	18+25.94	1B-3B	0.36	0.4	G2	50.0	0.4	200.0	0.0100	20	8.2	8.2	2.03	0.08	30%	0.72	0.015	123.35	116.98	116.23	12	0.0278	27	5.1	6.6	0.1	0.0005	117.98	Soffit	-5.4
	DMH 3-2	18+25.94	DMH 2-2	17+57.54	1B-4	0.00	0.6		0.0	0.0	0.0	0.0100	20	0.0	8.6	1.97	0.08	30%	1.17	0.015	123.91	115.23	114.86	24	0.0054	68	14.5	4.6	0.2	0.0000	117.23	Soffit	-6.7
	STUB 2A	17+57.54	DMH 2-2	17+57.54	1B-2A	2.12	2.1	G4	100.0	2.1	100.0	0.0100	20	7.2	7.2	2.16	0.08	30%	4.53	0.015	124	116.19	115.86	12	0.0100	33	3.1	3.9	0.1	0.0215	117.57	HGL	-6.4
	STUB 2B	17+57.54	DMH 2-2	17+57.54	1B-2B	1.14	1.1	G1	100.0	1.1	100.0	0.0100	20	7.4	7.4	2.13	0.08	30%	2.40	0.015	124	116.59	115.86	12	0.0100	73	3.1	3.9	0.3	0.0060	117.59	Soffit	-6.4
	DMH 2-2	17+57.54	DMH 1	14+35.94	1B-5	0.00	3.9		0.0	0.0	0.0	0.0100	20	0.0	8.9	1.95	0.08	30%	7.42	0.015	123.3	114.86	113.12	24	0.0054	322	14.4	4.6	1.2	0.0014	116.86	Soffit	-6.4
	DI 1A	14+35.94	DMH 1	14+35.94	1B-1A	0.42	0.4	G3A	50.0	0.4	390.0	0.0100	20	12.0	12.0	1.68	0.08	30%	0.69	0.015	120.1	114.3	114.12	12	0.0120	15	3.4	4.3	0.1	0.0005	115.30	Soffit	-4.8
	DI 1B	14+35.94	DMH 1	14+35.94	1B-1B	0.46	0.5	G2A	50.0	0.5	390.0	0.0100	20	11.8	11.8	1.69	0.08	30%	0.76	0.015	120.1	115.47	114.12	12	0.0500	27	6.9	8.8	0.1	0.0006	116.47	Soffit	-3.6
	DMH 1	14+35.94	DMH 7	13+67.54	1B-6	0.00	4.7		0.0	0.0	0.0	0.0100	20	0.0	12.0	1.67	0.08	30%	7.81	0.015	120.66	113.12	112.75	24	0.0054	68	14.5	4.6	0.2	0.0016	115.12	Soffit	-5.5
	STUB 7A	13+67.54	DMH 7	13+67.54	1B-7A	2.28	2.3	G8	100.0	2.3	100.0	0.0100	20	7.2	7.2	2.16	0.08	30%	4.88	0.015	121	114.08	113.75	12	0.0100	33	3.1	3.9	0.1	0.0250	115.58	HGL	-5.4
	STUB 7B	13+67.54	DMH 7	13+67.54	1B-7B	1.06	1.1	G5	100.0	1.1	100.0	0.0100	20	7.5	7.5	2.12	0.08	30%	2.22	0.015	121	114.48	113.75	12	0.0100	73	3.1	3.9	0.3	0.0052	115.48	Soffit	-5.5
	DMH 7	13+67.54	DMH 8-2	10+90.73	1B-7	0.00	8.1		0.0	0.0	0.0	0.0100	20	0.0	12.3	1.66	0.08	30%	13.19	0.015	120.16	112.25	111.56	30	0.0025	277	17.7	3.6	1.3	0.0014	114.75	Soffit	-5.4
	DI 8A	10+90.73	DMH 8-2	10+90.73	1B-8A	0.45	0.4	G7	50.0	0.4	350.0	0.0100	20	11.0	11.0	1.75	0.08	30%	0.77	0.015	117.2	113.33	113.06	12	0.0180	15	4.1	5.3	0.0	0.0006	114.33	Soffit	-2.9
	DI 8B	10+90.73	DMH 8-2	10+90.73	1B-8B	0.48	0.5	G6	50.0	0.5	350.0	0.0100	20	10.9	10.9	1.76	0.08	30%	0.84	0.015	117.59	113.72	113.06	12	0.0220	30	4.6	5.8	0.1	0.0007	114.72	Soffit	-2.9
	DMH 8-2	10+90.73	DMH 9	162+03.13	1B-8	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.5	1.58	0.08	30%	13.99	0.015	118.04	111.56	111.39	30	0.0026	66	18.0	3.7	0.3	0.0015	114.07	HGL	-4.0
Woodcreek-North	STUB 1C-9		DMH 9	162+03.13	1C-9S	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.8	1.56	0.08	30%	13.83	0.015	118	111.65	111.47	30	0.0026	70	18.0	3.7	0.3	0.0015	114.15	Soffit	-3.8
	DMH 9	162+03.13	DMH 10-2	165+70.41	1C-1	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.8	1.56	0.08	30%	13.83	0.015	118.48	111.47	107.80	30	0.0100	367	35.5	7.2	0.8	0.0015	113.97	Soffit	-4.5
	STUB 10-2		DMH 10-2	165+70.41	1C-10S	2.62	2.6	F1	100.0	2.6	0.0	0.0100	20	5.8	5.8	2.40	0.08	30%	6.23	0.015	115	108.36	108.07	30	0.0060	48	27.6	5.6	0.1	0.0003	111.60	HGL	-3.4
	DMH 10-2	165+70.41	ExDMH A	166+49.22	1C-2	0.00	11.6		0.0	0.0	0.0	0.0100	20	0.0	14.7	1.51	0.08	30%	17.33	0.015	114.17	107.72	107.29	30	0.0055	78	26.4	5.4	0.2	0.0024	111.59	HGL	-2.6
	DI AB		ExDMH A	166+49.22	1C-AB	0.62	0.6	G9	100.0	0.6	100.0	0.0100	20	7.7	7.7	2.09	0.08	30%	1.29	0.015	113.59	108.42	107.94	12	0.0436	11	6.4	8.2	0.0	0.0017	111.42	HGL	-2.2
	ExDMH A	166+49.22	ExDMH B	170+99.78	1C-3	0.00	12.3		0.0	0.0	0.0	0.0100	20	0.0	14.9	1.50	0.08	30%	18.10	0.015	113.94	107.24	105.93	30	0.0029	450.56	19.2	3.9	1.9	0.0026	111.40	HGL	-2.5
	ExDI BA		ExDMH B	170+99.78	1C-BA	0.85	0.8	F3A	50.0	0.8	400.0	0.0100	20	10.8	10.8	1.76	0.08	30%	1.48	0.015	112	107.4	107.18	12	0.0031	71	1.7	2.2	0.5	0.0023	110.49	HGL	-1.5
	STUB 1C-BBS		DI BB		1C-BBS	2.31	2.3	F2	100.0	2.3	0.0	0.0100	20	5.8	5.8	2.40	0.08	30%	5.49	0.015	113	108.13	108.09	18	0.0022	18	4.3	2.4	0.1	0.0036	110.30	HGL	-2.7
	DI BB		ExDMH B	170+99.78	1C-BB	1.00	3.3	F3	50.0	1.0	400.0	0.0100	20	10.5	10.5	1.79	0.08	30%	5.83	0.015	111.67	108.09	108.04	18	0.0022	23	4.2	2.4	0.2	0.0041	110.33	HGL	-1.3
	ExDMH B	170+99.78	ExDMH C	171+83.55	1C-4	0.00	16.4		0.0	0.0	0.0	0.0100	20	0.0	16.8	1.41	0.08	30%	22.79	0.015	112.58	105.88	105.48	30	0.0048	83.75	24.6	5.0	0.3	0.0041	110.23	HGL	-2.3
	ExDMH C	171+83.55	OUTFALL 1A	Directly to Ex 54" Culvert			16.4								17.1	1.40	0.08	30%	22.60		112.88										109.89	HGL	-3.0
																											Starting HGL assumed top of 54" Pipe				109.89	HGL	

Painted Desert Drive (East) and HP Way (North)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/27/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

0.08 0.3

10 Year Design Storm

							Node Area											Pipe Data										HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 10 Year (cfs/acre)	Fi	Pervious	Qp 10 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	10 Yr HGL Slope	U/S 10 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
1X-HP Way - Northern	DI 105A	27+50.00	DMH 105	27+50.00	P105A	0.31	0.3	C5	50.0	0.3	490.0	0.0100	20	14.8	14.8	1.51	0.08	30%	0.46	0.015	128.82	122.08	122.04	12	0.0029	14	1.6	2.1	0.1	0.0002	123.08	Soffit	-5.7
	DI 105B	27+50.00	DMH 105	27+50.00	P105B	0.68	0.7	C4	50.0	0.7	550.0	0.0100	20	13.9	13.9	1.55	0.08	30%	1.05	0.015	128.82	122.14	122.04	12	0.0026	39	1.6	2.0	0.3	0.0012	123.14	Soffit	-5.7
	DMH 105	27+50.00	DMH 104	22+50.00	HP-6	0.00	1.0							0.0	14.3	1.54	0.08	30%	1.50	0.015	129.26	122.04	119.00	12	0.0060	506	2.4	3.0	2.8	0.0024	123.04	Soffit	-6.2
	DI 104A	22+50.00	DMH 104	22+50.00	P104A	0.59	0.6	C6	50.0	0.6	350.0	0.0100	20	10.5	10.5	1.79	0.08	30%	1.04	0.015	126.42	119.02	119.00	12	0.0029	7	1.6	2.1	0.1	0.0011	120.02	Soffit	-6.4
	DI 104B	22+50.00	DMH 104	22+50.00	P104B	0.83	0.8	C7, C9A	50.0	0.8	475.0	0.0100	20	12.2	12.2	1.66	0.08	30%	1.37	0.015	126.42	119.08	119.00	12	0.0025	32	1.5	2.0	0.3	0.0020	120.08	Soffit	-6.3
	DMH 104	22+50.00	DMH 4-1	21+13.46	HP-7	0.00	2.4							0.0	17.0	1.41	0.08	30%	3.34	0.015	126.73	119.00	117.17	12	0.0133	138	3.6	4.5	0.5	0.0117	120.00	Soffit	-6.7
1B-Painted Desert	DI 6A1	26+50	DMH 6-1	26+50	1B-6A	0.37	0.4	C3	50.0	0.4	250.0	0.0100	20	9.2	9.2	1.91	0.08	30%	0.69	0.015	125.10	121.23	121.15	12	0.0053	15	2.3	2.9	0.1	0.0005	122.60	HGL	-2.5
	STUB 6B	26+50	DI 6B1	26+50	1B-6BS	1.72	1.7	C1	250.0	1.7	0.0	0.0100	20	10.1	10.1	1.82	0.08	30%	3.10	0.015	125.66	121.32	121.23	12	0.0050	18	2.2	2.8	0.1	0.0101	123.21	HGL	-2.5
	DI 6B1	26+50	DMH 6-1	26+50	1B-6B	0.36	2.1	C2	50.0	0.4	250.0	0.0100	20	9.2	9.2	1.91	0.08	30%	3.91	0.015	125.10	121.23	121.09	12	0.0052	27	2.2	2.8	0.2	0.0161	123.02	HGL	-2.1
	DMH 6-1	26+50	DMH 5-1	23+00	1B-1	0.00	2.4							0.0	9.2	1.91	0.08	30%	4.60	0.015	125.66	121.09	119.34	18	0.0050	350	6.4	3.6	1.6	0.0026	122.59	Soffit	-3.1
	DI 5A1	23+00	DMH 5-1	23+00	1B-4A	0.28	0.3	C10	50.0	0.3	135.0	0.0100	20	6.9	6.9	2.20	0.08	30%	0.62	0.015	125.72	121.85	121.77	12	0.0053	15	2.3	2.9	0.1	0.0004	122.85	Soffit	-2.9
	STUB 5B	23+00	DI 5B1	23+00	1B-4BS	2.59	2.6	C8	300.0	2.6	0.0	0.0100	20	11.3	11.3	1.73	0.08	30%	4.42	0.015	126.28	121.94	121.85	18	0.0050	10	6.4	3.6	0.0	0.0024	123.44	Soffit	-2.8
	DI 5B1	23+00	DMH 5-1	23+00	1B-4B	0.27	2.9	C9	50.0	0.3	135.0	0.0100	20	7.0	7.0	2.20	0.08	30%	6.21	0.015	125.72	121.85	121.71	18	0.0052	27	6.6	3.7	0.1	0.0047	123.35	Soffit	-2.4
	DMH 5-1	23+00	DMH 4-1	21+13.46	1B-2	0.00	5.6							0.0	10.8	1.76	0.08	30%	9.71	0.015	126.28	118.84	117.60	18	0.0053	234	6.6	3.7	1.0	0.0114	120.83	HGL	-5.4
1X-HP Way - Northern Portion	DMH 4-1	21+13.46	DMH 103	19+99.99	HP-1	0.00	8.0							0.0	17.5	1.38	0.08	30%	10.89	0.015	126.17	115.17	114.49	36	0.0060	113	44.8	6.3	0.3	0.0004	118.17	Soffit	-8.0
	DI 103A	19+99.99	DMH 103	19+99.99	P103A	0.13	0.1	C10B	50.0	0.1	50.0	0.0100	20	5.2	5.2	2.54	0.08	30%	0.33	0.015	124.35	117.54	117.49	12	0.0028	18	1.6	2.1	0.1	0.0001	118.54	Soffit	-5.8
	DI 103B	19+99.99	DMH 103	19+99.99	P103B	0.22	0.2	C10A	50.0	0.2	50.0	0.0100	20	5.1	5.1	2.58	0.08	30%	0.57	0.015	124.58	117.57	117.49	12	0.0025	32	1.5	2.0	0.3	0.0003	118.57	Soffit	-6.0
	DMH 103	19+99.99	DMH 102	16+02.61	HP-2	0.00	8.4							0.0	17.8	1.37	0.08	30%	11.28	0.015	125.05	114.49	112.12	36	0.0060	396	44.7	6.3	1.0	0.0004	117.49	Soffit	-7.6
	STUB 102A	16+02.61	DI 102A	16+02.61	S102A	0.71	0.7	C11	100.0	0.7	0.0	0.0100	20	5.8	5.8	2.40	0.08	30%	1.68	0.015	120.94	112.25	112.19	18	0.0030	20	5.0	2.8	0.1	0.0003	115.26	HGL	-5.7
	DI 102A	16+02.61	DMH 102	16+02.61	P102A	0.61	1.3	C12	50.0	0.6	400.0	0.0100	20	11.4	11.4	1.72	0.08	30%	2.23	0.015	120.23	112.19	112.12	12	0.0027	26	1.6	2.0	0.2	0.0052	115.26	HGL	-5.0
	STUB 102B	16+16.18	DI 102B	16+16.18	S102B	2.83	2.8	C14	100.0	2.8	0.0	0.0100	20	5.8	5.8	2.40	0.08	30%	6.74	0.015	120.94	112.31	112.25	18	0.0030	20	5.0	2.8	0.1	0.0055	117.00	HGL	-3.9
	DI 102B	16+16.18	DMH 102	16+02.61	P102B	0.58	3.4	C13	50.0	0.6	400.0	0.0100	20	11.5	11.5	1.71	0.08	30%	5.76	0.015	120.37	112.25	112.12	12	0.0026	51	1.6	2.0	0.4	0.0348	116.90	HGL	-3.5
	DMH 102	16+02.61	DMH 101	12+75.00	HP-3	0.00	13.1							0.0	18.9	1.33	0.08	30%	17.16	0.015	120.94	112.12	110.26	36	0.0057	327	43.6	6.2	0.9	0.0009	115.12	Soffit	-5.8
	STUB 101A	12+75.00	DMH 101	12+75.00	S101A	1.18	1.2	C15	100.0	1.2	0.0	0.0100	20	5.8	5.8	2.40	0.08	30%	2.80	0.015	117.60	110.41	110.26	18	0.0030	50	5.0	2.8	0.3	0.0009	113.31	HGL	-4.3
	STUB 101B	12+75.00	DMH 101	12+75.00	S101B	1.70	1.7	C18	100.0	1.7	0.0	0.0100	20	5.8	5.8	2.40	0.08	30%	4.05	0.015	117.60	110.48	110.26	18	0.0030	73	5.0	2.8	0.4	0.0020	113.40	HGL	-4.2
	DMH 101	12+75.00	DMH 100	11+70.00	HP-4	0.00	16.0							0.0	19.8	1.30	0.08	30%	20.45	0.015	117.60	110.26	109.66	36	0.0057	105	43.7	6.2	0.3	0.0013	113.26	Soffit	-4.3
	DI 100A	11+30.00	DMH 100A	11+30.00	P100A	0.61	0.6	C16	50.0	0.6	330.0	0.0100	20	10.1	10.1	1.83	0.08	30%	1.10	0.015	114.87	111.91	111.84	12	0.0027	26	1.6	2.0	0.2	0.0013	113.18	HGL	-1.7
	DI 100B	11+30.00	DMH 100A	11+30.00	P100B	1.30	1.3	C17, C20	70.0	1.3	430.0	0.0100	20	11.4	11.4	1.72	0.08	30%	2.20	0.015	114.68	111.99	111.84	12	0.0026	57	1.6	2.0	0.5	0.0051	113.44	HGL	-1.2
	DMH 100A	11+30.00	DMH 100	11+70.00	P100C	0.00	1.9							0.0	10.3	1.81	0.08	30%	3.42	0.015	115.85	111.84	111.66	12	0.0045	40	2.1	2.6	0.3	0.0123	113.15	HGL	-2.7
	DMH 100	11+70.00	OUTFALL 2		HP-5	0.00	17.9							0.0	20.1	1.31	0.08	30%	23.02	0.015	116.57	109.66	109.00	36	0.0084	79	52.8	7.5	0.2	0.0016	112.66	Soffit	-3.9
																															Starting HGL assumed top of Pipe	112.00	

Painted Desert Drive (West) and Woodcreek Oaks Blvd (North)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/27/2015
Revised:

25 Year Design Storm

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

						Node Area													Pipe Data										HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 25 Year (cfs/acre)	Fi	Pervious	Qp 25 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	25 Yr HGL Slope	U/S 25 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
Painted Desert	DI 3A1	18+25.94	DMH 3-2	18+25.94	1B-3A	0.24	0.2	G3	50.0	0.2	200.0	0.0100	20	8.6	8.6	2.57	0.08	30%	0.61	0.015	123.35	116.93	116.23	12	0.0467	15	6.7	8.5	0.0	0.0004	117.93	Soffit	-5.4
	DI 3B1	18+25.94	DMH 3-2	18+25.94	1B-3B	0.36	0.4	G2	50.0	0.4	200.0	0.0100	20	8.2	8.2	2.64	0.08	30%	0.94	0.015	123.35	116.98	116.23	12	0.0278	27	5.1	6.6	0.1	0.0009	117.98	Soffit	-5.4
	DMH 3-2	18+25.94	DMH 2-2	17+57.54	1B-4	0.00	0.6		0.0	0.0	0.0	0.0100	20	0.0	8.6	2.56	0.08	30%	1.52	0.015	123.91	115.23	114.86	24	0.0054	68	14.5	4.6	0.2	0.0001	117.23	Soffit	-6.7
	STUB 2A	17+57.54	DMH 2-2	17+57.54	1B-2A	2.12	2.1	G4	100.0	2.1	100.0	0.0100	20	7.2	7.2	2.81	0.08	30%	5.90	0.015	124	116.19	115.86	12	0.0100	33	3.1	3.9	0.1	0.0365	118.07	HGL	-5.9
	STUB 2B	17+57.54	DMH 2-2	17+57.54	1B-2B	1.14	1.1	G1	100.0	1.1	100.0	0.0100	20	7.4	7.4	2.76	0.08	30%	3.12	0.015	124	116.59	115.86	12	0.0100	73	3.1	3.9	0.3	0.0102	117.61	HGL	-6.4
	DMH 2-2	17+57.54	DMH 1	14+35.94	1B-5	0.00	3.9		0.0	0.0	0.0	0.0100	20	0.0	8.9	2.53	0.08	30%	9.67	0.015	123.3	114.86	113.12	24	0.0054	322	14.4	4.6	1.2	0.0024	116.86	Soffit	-6.4
	DI 1A	14+35.94	DMH 1	14+35.94	1B-1A	0.42	0.4	G3A	50.0	0.4	390.0	0.0100	20	12.0	12.0	2.18	0.08	30%	0.90	0.015	120.1	114.3	114.12	12	0.0120	15	3.4	4.3	0.1	0.0008	115.30	Soffit	-4.8
	DI 1B	14+35.94	DMH 1	14+35.94	1B-1B	0.46	0.5	G2A	50.0	0.5	390.0	0.0100	20	11.8	11.8	2.20	0.08	30%	0.99	0.015	120.1	115.47	114.12	12	0.0500	27	6.9	8.8	0.1	0.0010	116.47	Soffit	-3.6
	DMH 1	14+35.94	DMH 7	13+67.54	1B-6	0.00	4.7		0.0	0.0	0.0	0.0100	20	0.0	12.0	2.18	0.08	30%	10.18	0.015	120.66	113.12	112.75	24	0.0054	68	14.5	4.6	0.2	0.0027	115.12	Soffit	-5.5
	STUB 7A	13+67.54	DMH 7	13+67.54	1B-7A	2.28	2.3	G8	100.0	2.3	100.0	0.0100	20	7.2	7.2	2.81	0.08	30%	6.37	0.015	121	114.08	113.75	12	0.0100	33	3.1	3.9	0.1	0.0425	116.20	HGL	-4.8
	STUB 7B	13+67.54	DMH 7	13+67.54	1B-7B	1.06	1.1	G5	100.0	1.1	100.0	0.0100	20	7.5	7.5	2.76	0.08	30%	2.90	0.015	121	114.48	113.75	12	0.0100	73	3.1	3.9	0.3	0.0088	115.48	Soffit	-5.5
	DMH 7	13+67.54	DMH 8-2	10+90.73	1B-7	0.00	8.1		0.0	0.0	0.0	0.0100	20	0.0	12.3	2.15	0.08	30%	17.20	0.015	120.16	112.25	111.56	30	0.0025	277	17.7	3.6	1.3	0.0023	114.79	HGL	-5.4
	DI 8A	10+90.73	DMH 8-2	10+90.73	1B-8A	0.45	0.4	G7	50.0	0.4	350.0	0.0100	20	11.0	11.0	2.27	0.08	30%	1.01	0.015	117.2	113.33	113.06	12	0.0180	15	4.1	5.3	0.0	0.0011	114.33	Soffit	-2.9
	DI 8B	10+90.73	DMH 8-2	10+90.73	1B-8B	0.48	0.5	G6	50.0	0.5	350.0	0.0100	20	10.9	10.9	2.29	0.08	30%	1.10	0.015	117.59	113.72	113.06	12	0.0220	30	4.6	5.8	0.1	0.0013	114.72	Soffit	-2.9
	DMH 8-2	10+90.73	DMH 9	162+03.13	1B-8	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.5	2.05	0.08	30%	18.25	0.015	118.04	111.56	111.39	30	0.0026	66	18.0	3.7	0.3	0.0026	114.14	HGL	-3.9
Woodcreek-North	STUB 1C-9		DMH 9	162+03.13	1C-9S	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.8	2.03	0.08	30%	18.05	0.015	118	111.65	111.47	30	0.0026	70	18.0	3.7	0.3	0.0026	114.15	Soffit	-3.8
	DMH 9	162+03.13	DMH 10-2	165+70.41	1C-1	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.8	2.03	0.08	30%	18.05	0.015	118.48	111.47	107.80	30	0.0100	367	35.5	7.2	0.8	0.0026	113.97	Soffit	-4.5
	STUB 10-2		DMH 10-2	165+70.41	1C-10S	2.62	2.6	F1	100.0	2.6	0.0	0.0100	20	5.8	5.8	3.12	0.08	30%	8.12	0.015	115	108.36	108.07	30	0.0060	48	27.6	5.6	0.1	0.0005	112.81	HGL	-2.2
	DMH 10-2	165+70.41	ExDMH A	166+49.22	1C-2	0.00	11.6		0.0	0.0	0.0	0.0100	20	0.0	14.7	1.97	0.08	30%	22.61	0.015	114.17	107.72	107.29	30	0.0055	78	26.4	5.4	0.2	0.0040	112.78	HGL	-1.4
	DI AB		ExDMH A	166+49.22	1C-AB	0.62	0.6	G9	100.0	0.6	100.0	0.0100	20	7.7	7.7	2.72	0.08	30%	1.68	0.015	113.59	108.42	107.94	12	0.0436	11	6.4	8.2	0.0	0.0030	112.50	HGL	-1.1
	ExDMH A	166+49.22	ExDMH B	170+99.78	1C-3	0.00	12.3		0.0	0.0	0.0	0.0100	20	0.0	14.9	1.95	0.08	30%	23.62	0.015	113.94	107.24	105.93	30	0.0029	450.56	19.2	3.9	1.9	0.0044	112.47	HGL	-1.5
	ExDI BA		ExDMH B	170+99.78	1C-BA	0.85	0.8	F3A	50.0	0.8	400.0	0.0100	20	10.8	10.8	2.29	0.08	30%	1.93	0.015	112	107.4	107.18	12	0.0031	71	1.7	2.2	0.5	0.0039	110.91	HGL	-1.1
	STUB 1C-BBS		DI BB		1C-BBS	2.31	2.3	F2	100.0	2.3	0.0	0.0100	20	5.8	5.8	3.12	0.08	30%	7.15	0.015	113	108.13	108.09	18	0.0022	18	4.3	2.4	0.1	0.0062	110.59	HGL	-2.4
	DI BB		ExDMH B	170+99.78	1C-BB	1.00	3.3	F3	50.0	1.0	400.0	0.0100	20	10.5	10.5	2.32	0.08	30%	7.60	0.015	111.67	108.09	108.04	18	0.0022	23	4.2	2.4	0.2	0.0070	110.64	HGL	-1.0
	ExDMH B	170+99.78	ExDMH C	171+83.55	1C-4	0.00	16.4		0.0	0.0	0.0	0.0100	20	0.0	16.8	1.84	0.08	30%	29.75	0.015	112.58	105.88	105.48	30	0.0048	83.75	24.6	5.0	0.3	0.0070	110.48	HGL	-2.1
	ExDMH C	171+83.55	OUTFALL 1A	Directly to Ex 54" Culvert			16.4								17.1	1.82	0.08	30%	29.50		112.88										109.89	HGL	-3.0
																											Starting HGL assumed top of 54" Pipe				109.89	HGL	

Painted Desert Drive (East) and HP Way (North)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/26/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

0.08 0.3

25 Year Design Storm

							Node Area												Pipe Data									HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 25 Year (cfs/acre)	Fi	Pervious	Qp 25 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	25 Yr HGL Slope	U/S 25 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
1X-HP Way - Northern	DI 105A	27+50.00	DMH 105	27+50.00	P105A	0.31	0.3	C5	50.0	0.3	490.0	0.0100	20	14.8	14.8	1.96	0.08	30%	0.60	0.015	128.82	122.08	122.04	12	0.0029	14	1.6	2.1	0.1	0.0004	123.08	Soffit	-5.7
	DI 105B	27+50.00	DMH 105	27+50.00	P105B	0.68	0.7	C4	50.0	0.7	550.0	0.0100	20	13.9	13.9	2.02	0.08	30%	1.37	0.015	128.82	122.14	122.04	12	0.0026	39	1.6	2.0	0.3	0.0020	123.14	Soffit	-5.7
	DMH 105	27+50.00	DMH 104	22+50.00	HP-6	0.00	1.0							0.0	14.3	2.00	0.08	30%	1.96	0.015	129.26	122.04	119.00	12	0.0060	506	2.4	3.0	2.8	0.0040	123.04	Soffit	-6.2
	DI 104A	22+50.00	DMH 104	22+50.00	P104A	0.59	0.6	C6	50.0	0.6	350.0	0.0100	20	10.5	10.5	2.33	0.08	30%	1.36	0.015	126.42	119.02	119.00	12	0.0029	7	1.6	2.1	0.1	0.0019	120.94	HGL	-5.5
	DI 104B	22+50.00	DMH 104	22+50.00	P104B	0.83	0.8	C7, C9A	50.0	0.8	475.0	0.0100	20	12.2	12.2	2.16	0.08	30%	1.78	0.015	126.42	119.08	119.00	12	0.0025	32	1.5	2.0	0.3	0.0033	121.03	HGL	-5.4
	DMH 104	22+50.00	DMH 4-1	21+13.46	HP-7	0.00	2.4							0.0	17.0	1.83	0.08	30%	4.36	0.015	126.73	119.00	117.17	12	0.0133	138	3.6	4.5	0.5	0.0200	120.93	HGL	-5.8
1B-Painted Desert	DI 6A1	26+50	DMH 6-1	26+50	1B-6A	0.37	0.4	C3	50.0	0.4	250.0	0.0100	20	9.2	9.2	2.48	0.08	30%	0.90	0.015	125.10	121.23	121.15	12	0.0053	15	2.3	2.9	0.1	0.0008	124.23	HGL	-0.9
	STUB 6B	26+50	DI 6B1	26+50	1B-6BS	1.72	1.7	C1	250.0	1.7	0.0	0.0100	20	10.1	10.1	2.37	0.08	30%	4.04	0.015	125.66	121.32	121.23	12	0.0050	18	2.2	2.8	0.1	0.0171	125.27	HGL	-0.4
	DI 6B1	26+50	DMH 6-1	26+50	1B-6B	0.36	2.1	C2	50.0	0.4	250.0	0.0100	20	9.2	9.2	2.48	0.08	30%	5.10	0.015	125.10	121.23	121.09	12	0.0052	27	2.2	2.8	0.2	0.0273	124.96	HGL	-0.1
	DMH 6-1	26+50	DMH 5-1	23+00	1B-1	0.00	2.4							0.0	9.2	2.48	0.08	30%	6.00	0.015	125.66	121.09	119.34	18	0.0050	350	6.4	3.6	1.6	0.0043	124.22	HGL	-1.4
	DI 5A1	23+00	DMH 5-1	23+00	1B-4A	0.28	0.3	C10	50.0	0.3	135.0	0.0100	20	6.9	6.9	2.86	0.08	30%	0.80	0.015	125.72	121.85	121.77	12	0.0053	15	2.3	2.9	0.1	0.0007	122.85	Soffit	-2.9
	STUB 5B	23+00	DI 5B1	23+00	1B-4BS	2.59	2.6	C8	300.0	2.6	0.0	0.0100	20	11.3	11.3	2.25	0.08	30%	5.76	0.015	126.28	121.94	121.85	18	0.0050	10	6.4	3.6	0.0	0.0040	123.44	Soffit	-2.8
	DI 5B1	23+00	DMH 5-1	23+00	1B-4B	0.27	2.9	C9	50.0	0.3	135.0	0.0100	20	7.0	7.0	2.85	0.08	30%	8.10	0.015	125.72	121.85	121.71	18	0.0052	27	6.6	3.7	0.1	0.0079	123.35	Soffit	-2.4
	DMH 5-1	23+00	DMH 4-1	21+13.46	1B-2	0.00	5.6							0.0	10.8	2.29	0.08	30%	12.66	0.015	126.28	118.84	117.60	18	0.0053	234	6.6	3.7	1.0	0.0193	122.70	HGL	-3.6
1X-HP Way - Northern Portion	DMH 4-1	21+13.46	DMH 103	19+99.99	HP-1	0.00	8.0							0.0	17.5	1.80	0.08	30%	14.22	0.015	126.17	115.17	114.49	36	0.0060	113	44.8	6.3	0.3	0.0006	118.17	Soffit	-8.0
	DI 103A	19+99.99	DMH 103	19+99.99	P103A	0.13	0.1	C10B	50.0	0.1	50.0	0.0100	20	5.2	5.2	3.30	0.08	30%	0.43	0.015	124.35	117.54	117.49	12	0.0028	18	1.6	2.1	0.1	0.0002	118.54	Soffit	-5.8
	DI 103B	19+99.99	DMH 103	19+99.99	P103B	0.22	0.2	C10A	50.0	0.2	50.0	0.0100	20	5.1	5.1	3.35	0.08	30%	0.74	0.015	124.58	117.57	117.49	12	0.0025	32	1.5	2.0	0.3	0.0006	118.57	Soffit	-6.0
	DMH 103	19+99.99	DMH 102	16+02.61	HP-2	0.00	8.4							0.0	17.8	1.78	0.08	30%	14.72	0.015	125.05	114.49	112.12	36	0.0060	396	44.7	6.3	1.0	0.0006	117.49	Soffit	-7.6
	STUB 102A	16+02.61	DI 102A	16+02.61	S102A	0.71	0.7	C11	100.0	0.7	0.0	0.0100	20	5.8	5.8	3.12	0.08	30%	2.19	0.015	120.94	112.25	112.19	18	0.0030	20	5.0	2.8	0.1	0.0006	115.36	HGL	-5.6
	DI 102A	16+02.61	DMH 102	16+02.61	P102A	0.61	1.3	C12	50.0	0.6	400.0	0.0100	20	11.4	11.4	2.23	0.08	30%	2.91	0.015	120.23	112.19	112.12	12	0.0027	26	1.6	2.0	0.2	0.0089	115.35	HGL	-4.9
	STUB 102B	16+16.18	DI 102B	16+16.18	S102B	2.83	2.8	C14	100.0	2.8	0.0	0.0100	20	5.8	5.8	3.12	0.08	30%	8.78	0.015	120.94	112.31	112.25	18	0.0030	20	5.0	2.8	0.1	0.0093	118.33	HGL	-2.6
	DI 102B	16+16.18	DMH 102	16+02.61	P102B	0.58	3.4	C13	50.0	0.6	400.0	0.0100	20	11.5	11.5	2.22	0.08	30%	7.51	0.015	120.37	112.25	112.12	12	0.0026	51	1.6	2.0	0.4	0.0592	118.14	HGL	-2.2
	DMH 102	16+02.61	DMH 101	12+75.00	HP-3	0.00	13.1							0.0	18.9	1.73	0.08	30%	22.40	0.015	120.94	112.12	110.26	36	0.0057	327	43.6	6.2	0.9	0.0015	115.12	Soffit	-5.8
	STUB 101A	12+75.00	DMH 101	12+75.00	S101A	1.18	1.2	C15	100.0	1.2	0.0	0.0100	20	5.8	5.8	3.12	0.08	30%	3.65	0.015	117.60	110.41	110.26	18	0.0030	50	5.0	2.8	0.3	0.0016	113.34	HGL	-4.3
	STUB 101B	12+75.00	DMH 101	12+75.00	S101B	1.70	1.7	C18	100.0	1.7	0.0	0.0100	20	5.8	5.8	3.12	0.08	30%	5.28	0.015	117.60	110.48	110.26	18	0.0030	73	5.0	2.8	0.4	0.0034	113.51	HGL	-4.1
	DMH 101	12+75.00	DMH 100	11+70.00	HP-4	0.00	16.0							0.0	19.8	1.70	0.08	30%	26.70	0.015	117.60	110.26	109.66	36	0.0057	105	43.7	6.2	0.3	0.0021	113.26	Soffit	-4.3
	DI 100A	11+30.00	DMH 100A	11+30.00	P100A	0.61	0.6	C16	50.0	0.6	330.0	0.0100	20	10.1	10.1	2.38	0.08	30%	1.44	0.015	114.87	111.91	111.84	12	0.0027	26	1.6	2.0	0.2	0.0022	113.55	HGL	-1.3
	DI 100B	11+30.00	DMH 100A	11+30.00	P100B	1.30	1.3	C17, C20	70.0	1.3	430.0	0.0100	20	11.4	11.4	2.23	0.08	30%	2.88	0.015	114.68	111.99	111.84	12	0.0026	57	1.6	2.0	0.5	0.0087	113.99	HGL	-0.7
	DMH 100A	11+30.00	DMH 100	11+70.00	P100C	0.00	1.9							0.0	10.3	2.35	0.08	30%	4.46	0.015	115.85	111.84	111.66	12	0.0045	40	2.1	2.6	0.3	0.0208	113.49	HGL	-2.4
	DMH 100	11+70.00	OUTFALL 2		HP-5	0.00	17.9							0.0	20.1	1.70	0.08	30%	30.05	0.015	116.57	109.66	109.00	36	0.0084	79	52.8	7.5	0.2	0.0027	112.66	Soffit	-3.9
																														Starting HGL assumed top of Pipe	112.00		

Painted Desert Drive (West) and Woodcreek Oaks Blvd (North)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/27/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

100 Year Design Storm

						Node Area			Pipe Data																		HGL Data				
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 100 Year (cfs/acre)	Fi	Pervious	Qp 100 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	100 Yr HGL Slope	U/S 100 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
Painted Desert	DI 3A1	18+25.94	DMH 3-2	18+25.94	1B-3A	0.24	0.2	G3	50.0	0.2	200.0	0.0100	20	8.6	8.6	3.16	0.08	30%	0.76	0.015	123.35	116.93	116.23	12	0.0467	15	6.7	8.5	0.0	0.0006	118.47	HGL	-4.9
	DI 3B1	18+25.94	DMH 3-2	18+25.94	1B-3B	0.36	0.4	G2	50.0	0.4	200.0	0.0100	20	8.2	8.2	3.25	0.08	30%	1.16	0.015	123.35	116.98	116.23	12	0.0278	27	5.1	6.6	0.1	0.0014	118.50	HGL	-4.8
	DMH 3-2	18+25.94	DMH 2-2	17+57.54	1B-4	0.00	0.6		0.0	0.0	0.0	0.0100	20	0.0	8.6	3.16	0.08	30%	1.88	0.015	123.91	115.23	114.86	24	0.0054	68	14.5	4.6	0.2	0.0001	118.46	HGL	-5.4
	STUB 2A	17+57.54	DMH 2-2	17+57.54	1B-2A	2.12	2.1	G4	100.0	2.1	100.0	0.0100	20	7.2	7.2	3.46	0.08	30%	7.27	0.015	124	116.19	115.86	12	0.0100	33	3.1	3.9	0.1	0.0555	120.29	HGL	-3.7
	STUB 2B	17+57.54	DMH 2-2	17+57.54	1B-2B	1.14	1.1	G1	100.0	1.1	100.0	0.0100	20	7.4	7.4	3.40	0.08	30%	3.85	0.015	124	116.59	115.86	12	0.0100	73	3.1	3.9	0.3	0.0156	119.59	HGL	-4.4
	DMH 2-2	17+57.54	DMH 1	14+35.94	1B-5	0.00	3.9		0.0	0.0	0.0	0.0100	20	0.0	8.9	3.11	0.08	30%	11.92	0.015	123.3	114.86	113.12	24	0.0054	322	14.4	4.6	1.2	0.0037	118.46	HGL	-4.8
	DI 1A	14+35.94	DMH 1	14+35.94	1B-1A	0.42	0.4	G3A	50.0	0.4	390.0	0.0100	20	12.0	12.0	2.68	0.08	30%	1.11	0.015	120.1	114.3	114.12	12	0.0120	15	3.4	4.3	0.1	0.0013	117.28	HGL	-2.8
	DI 1B	14+35.94	DMH 1	14+35.94	1B-1B	0.46	0.5	G2A	50.0	0.5	390.0	0.0100	20	11.8	11.8	2.71	0.08	30%	1.23	0.015	120.1	115.47	114.12	12	0.0500	27	6.9	8.8	0.1	0.0016	117.31	HGL	-2.8
	DMH 1	14+35.94	DMH 7	13+67.54	1B-6	0.00	4.7		0.0	0.0	0.0	0.0100	20	0.0	12.0	2.68	0.08	30%	12.56	0.015	120.66	113.12	112.75	24	0.0054	68	14.5	4.6	0.2	0.0041	117.27	HGL	-3.4
	STUB 7A	13+67.54	DMH 7	13+67.54	1B-7A	2.28	2.3	G8	100.0	2.3	100.0	0.0100	20	7.2	7.2	3.46	0.08	30%	7.85	0.015	121	114.08	113.75	12	0.0100	33	3.1	3.9	0.1	0.0647	119.12	HGL	-1.9
	STUB 7B	13+67.54	DMH 7	13+67.54	1B-7B	1.06	1.1	G5	100.0	1.1	100.0	0.0100	20	7.5	7.5	3.39	0.08	30%	3.57	0.015	121	114.48	113.75	12	0.0100	73	3.1	3.9	0.3	0.0134	117.96	HGL	-3.0
	DMH 7	13+67.54	DMH 8-2	10+90.73	1B-7	0.00	8.1		0.0	0.0	0.0	0.0100	20	0.0	12.3	2.65	0.08	30%	21.21	0.015	120.16	112.25	111.56	30	0.0025	277	17.7	3.6	1.3	0.0036	116.99	HGL	-3.2
	DI 8A	10+90.73	DMH 8-2	10+90.73	1B-8A	0.45	0.4	G7	50.0	0.4	350.0	0.0100	20	11.0	11.0	2.80	0.08	30%	1.24	0.015	117.2	113.33	113.06	12	0.0180	15	4.1	5.3	0.0	0.0016	116.02	HGL	-1.2
	DI 8B	10+90.73	DMH 8-2	10+90.73	1B-8B	0.48	0.5	G6	50.0	0.5	350.0	0.0100	20	10.9	10.9	2.82	0.08	30%	1.35	0.015	117.59	113.72	113.06	12	0.0220	30	4.6	5.8	0.1	0.0019	116.06	HGL	-1.5
	DMH 8-2	10+90.73	DMH 9	162+03.13	1B-8	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.5	2.52	0.08	30%	22.51	0.015	118.04	111.56	111.39	30	0.0026	66	18.0	3.7	0.3	0.0040	116.00	HGL	-2.0
Woodcreek-North	STUB 1C-9		DMH 9	162+03.13	1C-9S	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.8	2.49	0.08	30%	22.26	0.015	118	111.65	111.47	30	0.0026	70	18.0	3.7	0.3	0.0039	114.61	HGL	-3.4
	DMH 9	162+03.13	DMH 10-2	165+70.41	1C-1	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.8	2.49	0.08	30%	22.26	0.015	118.48	111.47	107.80	30	0.0100	367	35.5	7.2	0.8	0.0039	115.73	HGL	-2.7
	STUB 10-2		DMH 10-2	165+70.41	1C-10S	2.62	2.6	F1	100.0	2.6	0.0	0.0100	20	5.8	5.8	3.84	0.08	30%	10.01	0.015	115	108.36	108.07	30	0.0060	48	27.6	5.6	0.1	0.0008	114.33	HGL	-0.7
	DMH 10-2	165+70.41	ExDMH A	166+49.22	1C-2	0.00	11.6		0.0	0.0	0.0	0.0100	20	0.0	14.7	2.42	0.08	30%	27.89	0.015	114.17	107.72	107.29	30	0.0055	78	26.4	5.4	0.2	0.0062	~~114.29~~	HGL	STREET FLOW
	DI AB		ExDMH A	166+49.22	1C-AB	0.62	0.6	G9	100.0	0.6	100.0	0.0100	20	7.7	7.7	3.34	0.08	30%	2.07	0.015	113.59	108.42	107.94	12	0.0436	11	6.4	8.2	0.0	0.0045	~~113.86~~	HGL	STREET FLOW
	ExDMH A	166+49.22	ExDMH B	170+99.78	1C-3	0.00	12.3		0.0	0.0	0.0	0.0100	20	0.0	14.9	2.40	0.08	30%	29.14	0.015	113.94	107.24	105.93	30	0.0029	450.56	19.2	3.9	1.9	0.0067	113.81	HGL	-0.1
	ExDI BA		ExDMH B	170+99.78	1C-BA	0.85	0.8	F3A	50.0	0.8	400.0	0.0100	20	10.8	10.8	2.82	0.08	30%	2.38	0.015	112	107.4	107.18	12	0.0031	71	1.7	2.2	0.5	0.0059	111.45	HGL	-0.6
	STUB 1C-BBS		DI BB		1C-BBS	2.31	2.3	F2	100.0	2.3	0.0	0.0100	20	5.8	5.8	3.84	0.08	30%	8.82	0.015	113	108.13	108.09	18	0.0022	18	4.3	2.4	0.1	0.0094	110.95	HGL	-2.0
	DI BB		ExDMH B	170+99.78	1C-BB	1.00	3.3	F3	50.0	1.0	400.0	0.0100	20	10.5	10.5	2.86	0.08	30%	9.38	0.015	111.67	108.09	108.04	18	0.0022	23	4.2	2.4	0.2	0.0106	111.03	HGL	-0.6
	ExDMH B	170+99.78	ExDMH C	171+83.55	1C-4	0.00	16.4		0.0	0.0	0.0	0.0100	20	0.0	16.8	2.26	0.08	30%	36.71	0.015	112.58	105.88	105.48	30	0.0048	83.75	24.6	5.0	0.3	0.0107	110.78	HGL	-1.8
	ExDMH C	171+83.55	OUTFALL 1A	Directly to Ex 54" Culvert			16.4								17.1	2.24	0.08	30%	36.40		112.88										109.89	HGL	-3.0
																											Starting HGL assumed top of 54" Pipe				109.89	HGL	

Painted Desert Drive (East) and HP Way (North)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/26/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

0.08 0.3

100 Year Design Storm

						Node Area			Pipe Data																	HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 100 Year (cfs/acre)	Fi	Pervious	Qp 100 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	100 Yr HGL Slope	U/S 100 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
1X-HP Way - Northern	DI 105A	27+50.00	DMH 105	27+50.00	P105A	0.31	0.3	C5	50.0	0.3	490.0	0.0100	20	14.8	14.8	2.41	0.08	30%	0.74	0.015	128.82	122.08	122.04	12	0.0029	14	1.6	2.1	0.1	0.0006	125.48	HGL	-3.3
	DI 105B	27+50.00	DMH 105	27+50.00	P105B	0.68	0.7	C4	50.0	0.7	550.0	0.0100	20	13.9	13.9	2.48	0.08	30%	1.69	0.015	128.82	122.14	122.04	12	0.0026	39	1.6	2.0	0.3	0.0030	125.59	HGL	-3.2
	DMH 105	27+50.00	DMH 104	22+50.00	HP-6	0.00	1.0							0.0	14.3	2.46	0.08	30%	2.42	0.015	129.26	122.04	119.00	12	0.0060	506	2.4	3.0	2.8	0.0061	125.47	HGL	-3.8
	DI 104A	22+50.00	DMH 104	22+50.00	P104A	0.59	0.6	C6	50.0	0.6	350.0	0.0100	20	10.5	10.5	2.86	0.08	30%	1.68	0.015	126.42	119.02	119.00	12	0.0029	7	1.6	2.1	0.1	0.0030	122.39	HGL	-4.0
	DI 104B	22+50.00	DMH 104	22+50.00	P104B	0.83	0.8	C7, C9A	50.0	0.8	475.0	0.0100	20	12.2	12.2	2.66	0.08	30%	2.20	0.015	126.42	119.08	119.00	12	0.0025	32	1.5	2.0	0.3	0.0051	122.53	HGL	-3.9
	DMH 104	22+50.00	DMH 4-1	21+13.46	HP-7	0.00	2.4							0.0	17.0	2.25	0.08	30%	5.38	0.015	126.73	119.00	117.17	12	0.0133	138	3.6	4.5	0.5	0.0304	122.36	HGL	-4.4
1B-Painted Desert	DI 6A1	26+50	DMH 6-1	26+50	1B-6A	0.37	0.4	C3	50.0	0.4	250.0	0.0100	20	9.2	9.2	3.06	0.08	30%	1.11	0.015	125.10	121.23	121.15	12	0.0053	15	2.3	2.9	0.1	0.0013	~~127.39~~	HGL	STREET FLOW
	STUB 6B	26+50	DI 6B1	26+50	1B-6BS	1.72	1.7	C1	250.0	1.7	0.0	0.0100	20	10.1	10.1	2.92	0.08	30%	4.98	0.015	125.66	121.32	121.23	12	0.0050	18	2.2	2.8	0.1	0.0260	~~126.96~~	HGL	STREET FLOW
	DI 6B1	26+50	DMH 6-1	26+50	1B-6B	0.36	2.1	C2	50.0	0.4	250.0	0.0100	20	9.2	9.2	3.05	0.08	30%	6.29	0.015	125.10	121.23	121.09	12	0.0052	27	2.2	2.8	0.2	0.0415	~~126.49~~	HGL	STREET FLOW
	DMH 6-1	26+50	DMH 5-1	23+00	1B-1	0.00	2.4							0.0	9.2	3.05	0.08	30%	7.40	0.015	125.66	121.09	119.34	18	0.0050	350	6.4	3.6	1.6	0.0066	~~127.97~~	HGL	STREET FLOW
	DI 5A1	23+00	DMH 5-1	23+00	1B-4A	0.28	0.3	C10	50.0	0.3	135.0	0.0100	20	6.9	6.9	3.52	0.08	30%	0.99	0.015	125.72	121.85	121.77	12	0.0053	15	2.3	2.9	0.1	0.0010	125.07	HGL	-0.6
	STUB 5B	23+00	DI 5B1	23+00	1B-4BS	2.59	2.6	C8	300.0	2.6	0.0	0.0100	20	11.3	11.3	2.76	0.08	30%	7.11	0.015	126.28	121.94	121.85	18	0.0050	10	6.4	3.6	0.0	0.0061	125.44	HGL	-0.8
	DI 5B1	23+00	DMH 5-1	23+00	1B-4B	0.27	2.9	C9	50.0	0.3	135.0	0.0100	20	7.0	7.0	3.51	0.08	30%	9.98	0.015	125.72	121.85	121.71	18	0.0052	27	6.6	3.7	0.1	0.0120	125.38	HGL	-0.3
	DMH 5-1	23+00	DMH 4-1	21+13.46	1B-2	0.00	5.6							0.0	10.8	2.82	0.08	30%	15.61	0.015	126.28	118.84	117.60	18	0.0053	234	6.6	3.7	1.0	0.0294	125.06	HGL	-1.2
1X-HP Way - Northern Portion	DMH 4-1	21+13.46	DMH 103	19+99.99	HP-1	0.00	8.0							0.0	17.5	2.22	0.08	30%	17.55	0.015	126.17	115.17	114.49	36	0.0060	113	44.8	6.3	0.3	0.0009	118.17	Soffit	-8.0
	DI 103A	19+99.99	DMH 103	19+99.99	P103A	0.13	0.1	C10B	50.0	0.1	50.0	0.0100	20	5.2	5.2	4.06	0.08	30%	0.53	0.015	124.35	117.54	117.49	12	0.0028	18	1.6	2.1	0.1	0.0003	118.54	Soffit	-5.8
	DI 103B	19+99.99	DMH 103	19+99.99	P103B	0.22	0.2	C10A	50.0	0.2	50.0	0.0100	20	5.1	5.1	4.12	0.08	30%	0.91	0.015	124.58	117.57	117.49	12	0.0025	32	1.5	2.0	0.3	0.0009	118.57	Soffit	-6.0
	DMH 103	19+99.99	DMH 102	16+02.61	HP-2	0.00	8.4							0.0	17.8	2.20	0.08	30%	18.17	0.015	125.05	114.49	112.12	36	0.0060	396	44.7	6.3	1.0	0.0010	117.49	Soffit	-7.6
	STUB 102A	16+02.61	DI 102A	16+02.61	S102A	0.71	0.7	C11	100.0	0.7	0.0	0.0100	20	5.8	5.8	3.84	0.08	30%	2.70	0.015	120.94	112.25	112.19	18	0.0030	20	5.0	2.8	0.1	0.0009	115.49	HGL	-5.5
	DI 102A	16+02.61	DMH 102	16+02.61	P102A	0.61	1.3	C12	50.0	0.6	400.0	0.0100	20	11.4	11.4	2.75	0.08	30%	3.59	0.015	120.23	112.19	112.12	12	0.0027	26	1.6	2.0	0.2	0.0135	115.47	HGL	-4.8
	STUB 102B	16+16.18	DI 102B	16+16.18	S102B	2.83	2.8	C14	100.0	2.8	0.0	0.0100	20	5.8	5.8	3.84	0.08	30%	10.82	0.015	120.94	112.31	112.25	18	0.0030	20	5.0	2.8	0.1	0.0141	120.00	HGL	-0.9
	DI 102B	16+16.18	DMH 102	16+02.61	P102B	0.58	3.4	C13	50.0	0.6	400.0	0.0100	20	11.5	11.5	2.74	0.08	30%	9.26	0.015	120.37	112.25	112.12	12	0.0026	51	1.6	2.0	0.4	0.0901	119.71	HGL	-0.7
	DMH 102	16+02.61	DMH 101	12+75.00	HP-3	0.00	13.1							0.0	18.9	2.14	0.08	30%	27.64	0.015	120.94	112.12	110.26	36	0.0057	327	43.6	6.2	0.9	0.0023	115.12	Soffit	-5.8
	STUB 101A	12+75.00	DMH 101	12+75.00	S101A	1.18	1.2	C15	100.0	1.2	0.0	0.0100	20	5.8	5.8	3.84	0.08	30%	4.49	0.015	117.60	110.41	110.26	18	0.0030	50	5.0	2.8	0.3	0.0024	113.38	HGL	-4.2
	STUB 101B	12+75.00	DMH 101	12+75.00	S101B	1.70	1.7	C18	100.0	1.7	0.0	0.0100	20	5.8	5.8	3.84	0.08	30%	6.51	0.015	117.60	110.48	110.26	18	0.0030	73	5.0	2.8	0.4	0.0051	113.63	HGL	-4.0
	DMH 101	12+75.00	DMH 100	11+70.00	HP-4	0.00	16.0							0.0	19.8	2.09	0.08	30%	32.96	0.015	117.60	110.26	109.66	36	0.0057	105	43.7	6.2	0.3	0.0033	113.26	Soffit	-4.3
	DI 100A	11+30.00	DMH 100A	11+30.00	P100A	0.61	0.6	C16	50.0	0.6	330.0	0.0100	20	10.1	10.1	2.92	0.08	30%	1.77	0.015	114.87	111.91	111.84	12	0.0027	26	1.6	2.0	0.2	0.0033	114.01	HGL	-0.9
	DI 100B	11+30.00	DMH 100A	11+30.00	P100B	1.30	1.3	C17, C20	70.0	1.3	430.0	0.0100	20	11.4	11.4	2.75	0.08	30%	3.55	0.015	114.68	111.99	111.84	12	0.0026	57	1.6	2.0	0.5	0.0132	~~114.68~~	HGL	STREET FLOW
	DMH 100A	11+30.00	DMH 100	11+70.00	P100C	0.00	1.9							0.0	10.3	2.89	0.08	30%	5.50	0.015	115.85	111.84	111.66	12	0.0045	40	2.1	2.6	0.3	0.0317	113.93	HGL	-1.9
	DMH 100	11+70.00	OUTFALL 2		HP-5	0.00	17.9							0.0	20.1	2.10	0.08	30%	37.08	0.015	116.57	109.66	109.00	36	0.0084	79	52.8	7.5	0.2	0.0041	112.66	Soffit	-3.9

Starting HGL assumed top of Pipe 112.00

Appendix E

Woodcreek Oaks Blvd.

HYDRAULIC MODEL RESULTS

FOR THE

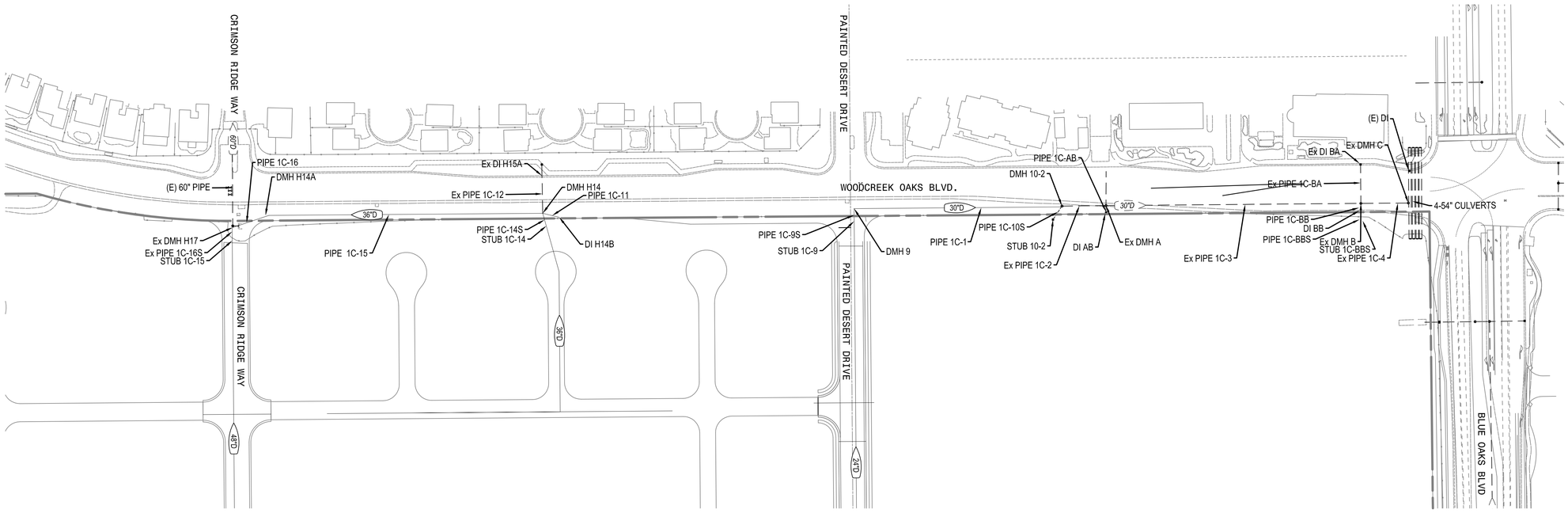
10-, 25-, AND 100-YEAR STORM EVENTS

WOODCREEK OAKS BLVD
STORM DRAIN EXHIBIT

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA
DATE: 5.26.2015



GRAPHIC SCALE
100 50 0 100 200
1 in = 100 ft

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Dwg: X:\2013\13-0076-00\DWG\ENGR\DESIGN\DRAINAGE STUDY ATTACHMENTS\130076-APPE-WOODCREEK OAKS-SDE.DWG | Saved: 01-28-15 09:23am MHAUGE | Plotted: 05-28-15 05:16pm MHAUGE

Painted Desert Drive (West) and Woodcreek Oaks Blvd (North)

DRAINAGE INLET CALCULATION

Road Name	Node Name	Cum. Ac.	RUN (min)	Inlet Location Condition	Fi & Pervious	10-Year Peak Flow (cfs)	10-Year Depth at DI (inch)	25-Year Peak Flow (cfs)	25-Year Depth at DI (inch)	100-Year Peak Flow (cfs)	100-Year Depth at DI (inch)
Painted Desert Drive	DI 3A1	0.2	8.6	Grade	0.08 / 30%	0.5	1.3	0.6	1.4	0.8	1.5
Painted Desert Drive	DI 3B1	0.4	8.2	Grade	0.08 / 30%	0.7	1.5	0.9	1.6	1.2	1.8
Painted Desert Drive	DI 1A	0.4	12.0	Grade	0.08 / 30%	0.7	1.5	0.9	1.6	1.1	1.7
Painted Desert Drive	DI 1B	0.5	11.8	Grade	0.08 / 30%	0.8	1.5	1.0	1.7	1.2	1.8
Painted Desert Drive	DI 8A	0.4	11.0	Sag	0.08 / 30%	0.8	1.5	1.0	1.7	1.2	1.8
Painted Desert Drive	DI 8B	0.5	10.9	Sag	0.08 / 30%	0.8	1.5	1.1	1.7	1.4	1.9
Woodcreek Oaks Blvd	DI AB	0.6	7.7	Grade	0.08 / 30%	1.3	1.8	1.7	2.0	2.1	2.2
Woodcreek Oaks Blvd	EXDI BA	0.8	10.8	Sag	0.08 / 30%	1.5	1.9	1.9	2.1	2.4	2.4
Woodcreek Oaks Blvd	DI BB	1.0	10.5	Sag	0.08 / 30%	1.8	2.1	2.3	2.3	2.8	2.9

Woodcreek Oaks Blvd (South)

DRAINAGE INLET CALCULATION

Road Name	Node Name	Inlet Location Condition	***Cum. Ac.***	RUN (min)	10-Year Peak Flow (cfs)	10-Year Depth at DI (inch)	25-Year Peak Flow (cfs)	25-Year Depth at DI (inch)	100-Year Peak Flow (cfs)	100-Year Depth at DI (inch)
Woodcreek Oaks Blvd	ExDI H15A	Grade	0.9	10.7	1.6	2.0	2.1	2.2	2.6	2.6
Woodcreek Oaks Blvd	DI H14B	Grade	0.6	11.4	1.0	1.7	1.3	1.8	1.7	2.0

Painted Desert Drive (West) and Woodcreek Oaks Blvd (North)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/27/2015
Revised:

10 Year Design Storm

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

						Node Area													Pipe Data										HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 10 Year (cfs/acre)	Fi	Pervious	Qp 10 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	10 Yr HGL Slope	U/S 10 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
Painted Desert	DI 3A1	18+25.94	DMH 3-2	18+25.94	1B-3A	0.24	0.2	G3	50.0	0.2	200.0	0.0100	20	8.6	8.6	1.98	0.08	30%	0.47	0.015	123.35	116.93	116.23	12	0.0467	15	6.7	8.5	0.0	0.0002	117.93	Soffit	-5.4
	DI 3B1	18+25.94	DMH 3-2	18+25.94	1B-3B	0.36	0.4	G2	50.0	0.4	200.0	0.0100	20	8.2	8.2	2.03	0.08	30%	0.72	0.015	123.35	116.98	116.23	12	0.0278	27	5.1	6.6	0.1	0.0005	117.98	Soffit	-5.4
	DMH 3-2	18+25.94	DMH 2-2	17+57.54	1B-4	0.00	0.6		0.0	0.0	0.0	0.0100	20	0.0	8.6	1.97	0.08	30%	1.17	0.015	123.91	115.23	114.86	24	0.0054	68	14.5	4.6	0.2	0.0000	117.23	Soffit	-6.7
	STUB 2A	17+57.54	DMH 2-2	17+57.54	1B-2A	2.12	2.1	G4	100.0	2.1	100.0	0.0100	20	7.2	7.2	2.16	0.08	30%	4.53	0.015	124	116.19	115.86	12	0.0100	33	3.1	3.9	0.1	0.0215	117.57	HGL	-6.4
	STUB 2B	17+57.54	DMH 2-2	17+57.54	1B-2B	1.14	1.1	G1	100.0	1.1	100.0	0.0100	20	7.4	7.4	2.13	0.08	30%	2.40	0.015	124	116.59	115.86	12	0.0100	73	3.1	3.9	0.3	0.0060	117.59	Soffit	-6.4
	DMH 2-2	17+57.54	DMH 1	14+35.94	1B-5	0.00	3.9		0.0	0.0	0.0	0.0100	20	0.0	8.9	1.95	0.08	30%	7.42	0.015	123.3	114.86	113.12	24	0.0054	322	14.4	4.6	1.2	0.0014	116.86	Soffit	-6.4
	DI 1A	14+35.94	DMH 1	14+35.94	1B-1A	0.42	0.4	G3A	50.0	0.4	390.0	0.0100	20	12.0	12.0	1.68	0.08	30%	0.69	0.015	120.1	114.3	114.12	12	0.0120	15	3.4	4.3	0.1	0.0005	115.30	Soffit	-4.8
	DI 1B	14+35.94	DMH 1	14+35.94	1B-1B	0.46	0.5	G2A	50.0	0.5	390.0	0.0100	20	11.8	11.8	1.69	0.08	30%	0.76	0.015	120.1	115.47	114.12	12	0.0500	27	6.9	8.8	0.1	0.0006	116.47	Soffit	-3.6
	DMH 1	14+35.94	DMH 7	13+67.54	1B-6	0.00	4.7		0.0	0.0	0.0	0.0100	20	0.0	12.0	1.67	0.08	30%	7.81	0.015	120.66	113.12	112.75	24	0.0054	68	14.5	4.6	0.2	0.0016	115.12	Soffit	-5.5
	STUB 7A	13+67.54	DMH 7	13+67.54	1B-7A	2.28	2.3	G8	100.0	2.3	100.0	0.0100	20	7.2	7.2	2.16	0.08	30%	4.88	0.015	121	114.08	113.75	12	0.0100	33	3.1	3.9	0.1	0.0250	115.58	HGL	-5.4
	STUB 7B	13+67.54	DMH 7	13+67.54	1B-7B	1.06	1.1	G5	100.0	1.1	100.0	0.0100	20	7.5	7.5	2.12	0.08	30%	2.22	0.015	121	114.48	113.75	12	0.0100	73	3.1	3.9	0.3	0.0052	115.48	Soffit	-5.5
	DMH 7	13+67.54	DMH 8-2	10+90.73	1B-7	0.00	8.1		0.0	0.0	0.0	0.0100	20	0.0	12.3	1.66	0.08	30%	13.19	0.015	120.16	112.25	111.56	30	0.0025	277	17.7	3.6	1.3	0.0014	114.75	Soffit	-5.4
	DI 8A	10+90.73	DMH 8-2	10+90.73	1B-8A	0.45	0.4	G7	50.0	0.4	350.0	0.0100	20	11.0	11.0	1.75	0.08	30%	0.77	0.015	117.2	113.33	113.06	12	0.0180	15	4.1	5.3	0.0	0.0006	114.33	Soffit	-2.9
	DI 8B	10+90.73	DMH 8-2	10+90.73	1B-8B	0.48	0.5	G6	50.0	0.5	350.0	0.0100	20	10.9	10.9	1.76	0.08	30%	0.84	0.015	117.59	113.72	113.06	12	0.0220	30	4.6	5.8	0.1	0.0007	114.72	Soffit	-2.9
	DMH 8-2	10+90.73	DMH 9	162+03.13	1B-8	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.5	1.58	0.08	30%	13.99	0.015	118.04	111.56	111.39	30	0.0026	66	18.0	3.7	0.3	0.0015	114.07	HGL	-4.0
Woodcreek-North	STUB 1C-9		DMH 9	162+03.13	1C-9S	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.8	1.56	0.08	30%	13.83	0.015	118	111.65	111.47	30	0.0026	70	18.0	3.7	0.3	0.0015	114.15	Soffit	-3.8
	DMH 9	162+03.13	DMH 10-2	165+70.41	1C-1	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.8	1.56	0.08	30%	13.83	0.015	118.48	111.47	107.80	30	0.0100	367	35.5	7.2	0.8	0.0015	113.97	Soffit	-4.5
	STUB 10-2		DMH 10-2	165+70.41	1C-10S	2.62	2.6	F1	100.0	2.6	0.0	0.0100	20	5.8	5.8	2.40	0.08	30%	6.23	0.015	115	108.36	108.07	30	0.0060	48	27.6	5.6	0.1	0.0003	111.60	HGL	-3.4
	DMH 10-2	165+70.41	ExDMH A	166+49.22	1C-2	0.00	11.6		0.0	0.0	0.0	0.0100	20	0.0	14.7	1.51	0.08	30%	17.33	0.015	114.17	107.72	107.29	30	0.0055	78	26.4	5.4	0.2	0.0024	111.59	HGL	-2.6
	DI AB		ExDMH A	166+49.22	1C-AB	0.62	0.6	G9	100.0	0.6	100.0	0.0100	20	7.7	7.7	2.09	0.08	30%	1.29	0.015	113.59	108.42	107.94	12	0.0436	11	6.4	8.2	0.0	0.0017	111.42	HGL	-2.2
	ExDMH A	166+49.22	ExDMH B	170+99.78	1C-3	0.00	12.3		0.0	0.0	0.0	0.0100	20	0.0	14.9	1.50	0.08	30%	18.10	0.015	113.94	107.24	105.93	30	0.0029	450.56	19.2	3.9	1.9	0.0026	111.40	HGL	-2.5
	ExDI BA		ExDMH B	170+99.78	1C-BA	0.85	0.8	F3A	50.0	0.8	400.0	0.0100	20	10.8	10.8	1.76	0.08	30%	1.48	0.015	112	107.4	107.18	12	0.0031	71	1.7	2.2	0.5	0.0023	110.49	HGL	-1.5
	STUB 1C-BBS		DI BB		1C-BBS	2.31	2.3	F2	100.0	2.3	0.0	0.0100	20	5.8	5.8	2.40	0.08	30%	5.49	0.015	113	108.13	108.09	18	0.0022	18	4.3	2.4	0.1	0.0036	110.30	HGL	-2.7
	DI BB		ExDMH B	170+99.78	1C-BB	1.00	3.3	F3	50.0	1.0	400.0	0.0100	20	10.5	10.5	1.79	0.08	30%	5.83	0.015	111.67	108.09	108.04	18	0.0022	23	4.2	2.4	0.2	0.0041	110.33	HGL	-1.3
	ExDMH B	170+99.78	ExDMH C	171+83.55	1C-4	0.00	16.4		0.0	0.0	0.0	0.0100	20	0.0	16.8	1.41	0.08	30%	22.79	0.015	112.58	105.88	105.48	30	0.0048	83.75	24.6	5.0	0.3	0.0041	110.23	HGL	-2.3
	ExDMH C	171+83.55	OUTFALL 1A	Directly to Ex 54" Culvert			16.4								17.1	1.40	0.08	30%	22.60		112.88										109.89	HGL	-3.0
																											Starting HGL assumed top of 54" Pipe				109.89	HGL	

Woodcreek Oaks Blvd (South)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/27/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

10 Year Design Storm

						Node Area			Pipe Data																		HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 10 Year (cfs/acre)	Fi	Pervious	Qp 10 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	10 Yr HGL Slope	U/S 10 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
1C-Woodcreek-South	STUB 1C-14		DMH H14		1C-14S	1.87	11.9	H13	150.0	1.9	200.0	0.0100	20	10.29	13.3	1.59	0.08	30.0%	18.66	0.015	119	107.60	107.55	36	0.0020	25	25.84	3.66	0.1	0.0010	111.30	HGL	-7.7
	ExDI H15A		DMH H14		1C-12	0.91	0.9	H15	50.0	0.9	400.0	0.0100	20	10.69	10.7	1.77	0.08	30.0%	1.59	0.015	116.01	112.61	112.56	18	0.0008	63	2.56	1.45	0.7	0.0003	114.11	Soffit	-1.9
	DI H14B		DMH H14		1C-11	0.61	0.6	H14	50.0	0.6	400.0	0.0100	20	11.42	11.4	1.72	0.08	30.0%	1.03	0.015	116.37	112.53	110.27	12	0.0779	29	8.62	10.97	0.0	0.0011	113.53	Soffit	-2.8
	DMH H14		DMH H14A		1C-15	0.00	13.4	0.0	0.0	0.0	0.0	0.0100	20	0.00	13.5	1.58	0.08	30.0%	20.94	0.015	116.82	108.27	107.55	36	0.0015	482	22.33	3.16	2.5	0.0013	111.27	Soffit	-5.6
	DMH H14A		ExDMH H17		1C-16	0.00	13.4	0.0	0.0	0.0	0.0	0.0100	20	0.00	16.0	1.45	0.08	30.0%	19.18	0.015	114.91	107.55	107.45	36	0.0015	68	22.16	3.14	0.4	0.0011	110.55	Soffit	-4.4
	STUB 1C-15		ExDMH H17		1C-16S	1.82	21.7	H16,H17,H18	50.0	1.8	300.0	0.0100	20	8.16	18.5	1.35	0.08	30.0%	28.80	0.015	119	105.47	105.45	60	0.0006	36	53.18	2.71	0.2	0.0002	110.47	Soffit	-8.5
	ExDMH H17		OUT4			0.00	35.2	0.0	0.0	0.0	0.0	0.0100	20	0.00	18.7	1.34	0.08	30.0%	46.34														
																											Starting HGL assumed top of Pipe			110.45	Soffit	

10-YR

Painted Desert Drive (West) and Woodcreek Oaks Blvd (North)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/27/2015
Revised:

25 Year Design Storm

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

						Node Area													Pipe Data										HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 25 Year (cfs/acre)	Fi	Pervious	Qp 25 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	25 Yr HGL Slope	U/S 25 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
Painted Desert	DI 3A1	18+25.94	DMH 3-2	18+25.94	1B-3A	0.24	0.2	G3	50.0	0.2	200.0	0.0100	20	8.6	8.6	2.57	0.08	30%	0.61	0.015	123.35	116.93	116.23	12	0.0467	15	6.7	8.5	0.0	0.0004	117.93	Soffit	-5.4
	DI 3B1	18+25.94	DMH 3-2	18+25.94	1B-3B	0.36	0.4	G2	50.0	0.4	200.0	0.0100	20	8.2	8.2	2.64	0.08	30%	0.94	0.015	123.35	116.98	116.23	12	0.0278	27	5.1	6.6	0.1	0.0009	117.98	Soffit	-5.4
	DMH 3-2	18+25.94	DMH 2-2	17+57.54	1B-4	0.00	0.6		0.0	0.0	0.0	0.0100	20	0.0	8.6	2.56	0.08	30%	1.52	0.015	123.91	115.23	114.86	24	0.0054	68	14.5	4.6	0.2	0.0001	117.23	Soffit	-6.7
	STUB 2A	17+57.54	DMH 2-2	17+57.54	1B-2A	2.12	2.1	G4	100.0	2.1	100.0	0.0100	20	7.2	7.2	2.81	0.08	30%	5.90	0.015	124	116.19	115.86	12	0.0100	33	3.1	3.9	0.1	0.0365	118.07	HGL	-5.9
	STUB 2B	17+57.54	DMH 2-2	17+57.54	1B-2B	1.14	1.1	G1	100.0	1.1	100.0	0.0100	20	7.4	7.4	2.76	0.08	30%	3.12	0.015	124	116.59	115.86	12	0.0100	73	3.1	3.9	0.3	0.0102	117.61	HGL	-6.4
	DMH 2-2	17+57.54	DMH 1	14+35.94	1B-5	0.00	3.9		0.0	0.0	0.0	0.0100	20	0.0	8.9	2.53	0.08	30%	9.67	0.015	123.3	114.86	113.12	24	0.0054	322	14.4	4.6	1.2	0.0024	116.86	Soffit	-6.4
	DI 1A	14+35.94	DMH 1	14+35.94	1B-1A	0.42	0.4	G3A	50.0	0.4	390.0	0.0100	20	12.0	12.0	2.18	0.08	30%	0.90	0.015	120.1	114.3	114.12	12	0.0120	15	3.4	4.3	0.1	0.0008	115.30	Soffit	-4.8
	DI 1B	14+35.94	DMH 1	14+35.94	1B-1B	0.46	0.5	G2A	50.0	0.5	390.0	0.0100	20	11.8	11.8	2.20	0.08	30%	0.99	0.015	120.1	115.47	114.12	12	0.0500	27	6.9	8.8	0.1	0.0010	116.47	Soffit	-3.6
	DMH 1	14+35.94	DMH 7	13+67.54	1B-6	0.00	4.7		0.0	0.0	0.0	0.0100	20	0.0	12.0	2.18	0.08	30%	10.18	0.015	120.66	113.12	112.75	24	0.0054	68	14.5	4.6	0.2	0.0027	115.12	Soffit	-5.5
	STUB 7A	13+67.54	DMH 7	13+67.54	1B-7A	2.28	2.3	G8	100.0	2.3	100.0	0.0100	20	7.2	7.2	2.81	0.08	30%	6.37	0.015	121	114.08	113.75	12	0.0100	33	3.1	3.9	0.1	0.0425	116.20	HGL	-4.8
	STUB 7B	13+67.54	DMH 7	13+67.54	1B-7B	1.06	1.1	G5	100.0	1.1	100.0	0.0100	20	7.5	7.5	2.76	0.08	30%	2.90	0.015	121	114.48	113.75	12	0.0100	73	3.1	3.9	0.3	0.0088	115.48	Soffit	-5.5
	DMH 7	13+67.54	DMH 8-2	10+90.73	1B-7	0.00	8.1		0.0	0.0	0.0	0.0100	20	0.0	12.3	2.15	0.08	30%	17.20	0.015	120.16	112.25	111.56	30	0.0025	277	17.7	3.6	1.3	0.0023	114.79	HGL	-5.4
	DI 8A	10+90.73	DMH 8-2	10+90.73	1B-8A	0.45	0.4	G7	50.0	0.4	350.0	0.0100	20	11.0	11.0	2.27	0.08	30%	1.01	0.015	117.2	113.33	113.06	12	0.0180	15	4.1	5.3	0.0	0.0011	114.33	Soffit	-2.9
	DI 8B	10+90.73	DMH 8-2	10+90.73	1B-8B	0.48	0.5	G6	50.0	0.5	350.0	0.0100	20	10.9	10.9	2.29	0.08	30%	1.10	0.015	117.59	113.72	113.06	12	0.0220	30	4.6	5.8	0.1	0.0013	114.72	Soffit	-2.9
	DMH 8-2	10+90.73	DMH 9	162+03.13	1B-8	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.5	2.05	0.08	30%	18.25	0.015	118.04	111.56	111.39	30	0.0026	66	18.0	3.7	0.3	0.0026	114.14	HGL	-3.9
Woodcreek-North	STUB 1C-9		DMH 9	162+03.13	1C-9S	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.8	2.03	0.08	30%	18.05	0.015	118	111.65	111.47	30	0.0026	70	18.0	3.7	0.3	0.0026	114.15	Soffit	-3.8
	DMH 9	162+03.13	DMH 10-2	165+70.41	1C-1	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.8	2.03	0.08	30%	18.05	0.015	118.48	111.47	107.80	30	0.0100	367	35.5	7.2	0.8	0.0026	113.97	Soffit	-4.5
	STUB 10-2		DMH 10-2	165+70.41	1C-10S	2.62	2.6	F1	100.0	2.6	0.0	0.0100	20	5.8	5.8	3.12	0.08	30%	8.12	0.015	115	108.36	108.07	30	0.0060	48	27.6	5.6	0.1	0.0005	112.81	HGL	-2.2
	DMH 10-2	165+70.41	ExDMH A	166+49.22	1C-2	0.00	11.6		0.0	0.0	0.0	0.0100	20	0.0	14.7	1.97	0.08	30%	22.61	0.015	114.17	107.72	107.29	30	0.0055	78	26.4	5.4	0.2	0.0040	112.78	HGL	-1.4
	DI AB		ExDMH A	166+49.22	1C-AB	0.62	0.6	G9	100.0	0.6	100.0	0.0100	20	7.7	7.7	2.72	0.08	30%	1.68	0.015	113.59	108.42	107.94	12	0.0436	11	6.4	8.2	0.0	0.0030	112.50	HGL	-1.1
	ExDMH A	166+49.22	ExDMH B	170+99.78	1C-3	0.00	12.3		0.0	0.0	0.0	0.0100	20	0.0	14.9	1.95	0.08	30%	23.62	0.015	113.94	107.24	105.93	30	0.0029	450.56	19.2	3.9	1.9	0.0044	112.47	HGL	-1.5
	ExDI BA		ExDMH B	170+99.78	1C-BA	0.85	0.8	F3A	50.0	0.8	400.0	0.0100	20	10.8	10.8	2.29	0.08	30%	1.93	0.015	112	107.4	107.18	12	0.0031	71	1.7	2.2	0.5	0.0039	110.91	HGL	-1.1
	STUB 1C-BBS		DI BB		1C-BBS	2.31	2.3	F2	100.0	2.3	0.0	0.0100	20	5.8	5.8	3.12	0.08	30%	7.15	0.015	113	108.13	108.09	18	0.0022	18	4.3	2.4	0.1	0.0062	110.59	HGL	-2.4
	DI BB		ExDMH B	170+99.78	1C-BB	1.00	3.3	F3	50.0	1.0	400.0	0.0100	20	10.5	10.5	2.32	0.08	30%	7.60	0.015	111.67	108.09	108.04	18	0.0022	23	4.2	2.4	0.2	0.0070	110.64	HGL	-1.0
	ExDMH B	170+99.78	ExDMH C	171+83.55	1C-4	0.00	16.4		0.0	0.0	0.0	0.0100	20	0.0	16.8	1.84	0.08	30%	29.75	0.015	112.58	105.88	105.48	30	0.0048	83.75	24.6	5.0	0.3	0.0070	110.48	HGL	-2.1
	ExDMH C	171+83.55	OUTFALL 1A	Directly to Ex 54" Culvert			16.4								17.1	1.82	0.08	30%	29.50		112.88										109.89	HGL	-3.0
																											Starting HGL assumed top of 54" Pipe				109.89	HGL	

Woodcreek Oaks Blvd (South)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/27/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

25 Year Design Storm

						Node Area			Pipe Data																	HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 25 Year (cfs/acre)	Fi	Pervious	Qp 25 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	25 Yr HGL Slope	U/S 25 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
1C-Woodcreek-South	STUB 1C-14		DMH H14		1C-14S	1.87	11.9	H13	150.0	1.9	200.0	0.0100	20	10.29	13.3	2.06	0.08	30.0%	24.35	0.015	119	107.60	107.55	36	0.0020	25	25.84	3.66	0.1	0.0018	111.70	HGL	-7.3
	ExDI H15A		DMH H14		1C-12	0.91	0.9	H15	50.0	0.9	400.0	0.0100	20	10.69	10.7	2.31	0.08	30.0%	2.07	0.015	116.01	112.61	112.56	18	0.0008	63	2.56	1.45	0.7	0.0005	114.11	Soffit	-1.9
	DI H14B		DMH H14		1C-11	0.61	0.6	H14	50.0	0.6	400.0	0.0100	20	11.42	11.4	2.23	0.08	30.0%	1.34	0.015	116.37	112.53	110.27	12	0.0779	29	8.62	10.97	0.0	0.0019	113.53	Soffit	-2.8
	DMH H14		DMH H14A		1C-15	0.00	13.4	0.0	0.0	0.0	0.0	0.0100	20	0.00	13.5	2.06	0.08	30.0%	27.32	0.015	116.82	108.27	107.55	36	0.0015	482	22.33	3.16	2.5	0.0022	111.65	HGL	-5.2
	DMH H14A		ExDMH H17		1C-16	0.00	13.4	0.0	0.0	0.0	0.0	0.0100	20	0.00	16.0	1.89	0.08	30.0%	25.03	0.015	114.91	107.55	107.45	36	0.0015	68	22.16	3.14	0.4	0.0019	110.58	HGL	-4.3
	STUB 1C-15		ExDMH H17		1C-16S	1.82	21.7	H16,H17,H18	50.0	1.8	300.0	0.0100	20	8.16	18.5	1.75	0.08	30.0%	37.60	0.015	119	105.47	105.45	60	0.0006	36	53.18	2.71	0.2	0.0003	110.47	Soffit	-8.5
	ExDMH H17		OUT4			0.00	35.2	0.0	0.0	0.0	0.0	0.0100	20	0.00	18.7	1.74	0.08	30.0%	60.50														
																											Starting HGL assumed top of Pipe			110.45	Soffit	

Painted Desert Drive (West) and Woodcreek Oaks Blvd (North)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/27/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

100 Year Design Storm

						Node Area			Pipe Data																		HGL Data				
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 100 Year (cfs/acre)	Fi	Pervious	Qp 100 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	100 Yr HGL Slope	U/S 100 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
Painted Desert	DI 3A1	18+25.94	DMH 3-2	18+25.94	1B-3A	0.24	0.2	G3	50.0	0.2	200.0	0.0100	20	8.6	8.6	3.16	0.08	30%	0.76	0.015	123.35	116.93	116.23	12	0.0467	15	6.7	8.5	0.0	0.0006	118.47	HGL	-4.9
	DI 3B1	18+25.94	DMH 3-2	18+25.94	1B-3B	0.36	0.4	G2	50.0	0.4	200.0	0.0100	20	8.2	8.2	3.25	0.08	30%	1.16	0.015	123.35	116.98	116.23	12	0.0278	27	5.1	6.6	0.1	0.0014	118.50	HGL	-4.8
	DMH 3-2	18+25.94	DMH 2-2	17+57.54	1B-4	0.00	0.6		0.0	0.0	0.0	0.0100	20	0.0	8.6	3.16	0.08	30%	1.88	0.015	123.91	115.23	114.86	24	0.0054	68	14.5	4.6	0.2	0.0001	118.46	HGL	-5.4
	STUB 2A	17+57.54	DMH 2-2	17+57.54	1B-2A	2.12	2.1	G4	100.0	2.1	100.0	0.0100	20	7.2	7.2	3.46	0.08	30%	7.27	0.015	124	116.19	115.86	12	0.0100	33	3.1	3.9	0.1	0.0555	120.29	HGL	-3.7
	STUB 2B	17+57.54	DMH 2-2	17+57.54	1B-2B	1.14	1.1	G1	100.0	1.1	100.0	0.0100	20	7.4	7.4	3.40	0.08	30%	3.85	0.015	124	116.59	115.86	12	0.0100	73	3.1	3.9	0.3	0.0156	119.59	HGL	-4.4
	DMH 2-2	17+57.54	DMH 1	14+35.94	1B-5	0.00	3.9		0.0	0.0	0.0	0.0100	20	0.0	8.9	3.11	0.08	30%	11.92	0.015	123.3	114.86	113.12	24	0.0054	322	14.4	4.6	1.2	0.0037	118.46	HGL	-4.8
	DI 1A	14+35.94	DMH 1	14+35.94	1B-1A	0.42	0.4	G3A	50.0	0.4	390.0	0.0100	20	12.0	12.0	2.68	0.08	30%	1.11	0.015	120.1	114.3	114.12	12	0.0120	15	3.4	4.3	0.1	0.0013	117.28	HGL	-2.8
	DI 1B	14+35.94	DMH 1	14+35.94	1B-1B	0.46	0.5	G2A	50.0	0.5	390.0	0.0100	20	11.8	11.8	2.71	0.08	30%	1.23	0.015	120.1	115.47	114.12	12	0.0500	27	6.9	8.8	0.1	0.0016	117.31	HGL	-2.8
	DMH 1	14+35.94	DMH 7	13+67.54	1B-6	0.00	4.7		0.0	0.0	0.0	0.0100	20	0.0	12.0	2.68	0.08	30%	12.56	0.015	120.66	113.12	112.75	24	0.0054	68	14.5	4.6	0.2	0.0041	117.27	HGL	-3.4
	STUB 7A	13+67.54	DMH 7	13+67.54	1B-7A	2.28	2.3	G8	100.0	2.3	100.0	0.0100	20	7.2	7.2	3.46	0.08	30%	7.85	0.015	121	114.08	113.75	12	0.0100	33	3.1	3.9	0.1	0.0647	119.12	HGL	-1.9
	STUB 7B	13+67.54	DMH 7	13+67.54	1B-7B	1.06	1.1	G5	100.0	1.1	100.0	0.0100	20	7.5	7.5	3.39	0.08	30%	3.57	0.015	121	114.48	113.75	12	0.0100	73	3.1	3.9	0.3	0.0134	117.96	HGL	-3.0
	DMH 7	13+67.54	DMH 8-2	10+90.73	1B-7	0.00	8.1		0.0	0.0	0.0	0.0100	20	0.0	12.3	2.65	0.08	30%	21.21	0.015	120.16	112.25	111.56	30	0.0025	277	17.7	3.6	1.3	0.0036	116.99	HGL	-3.2
	DI 8A	10+90.73	DMH 8-2	10+90.73	1B-8A	0.45	0.4	G7	50.0	0.4	350.0	0.0100	20	11.0	11.0	2.80	0.08	30%	1.24	0.015	117.2	113.33	113.06	12	0.0180	15	4.1	5.3	0.0	0.0016	116.02	HGL	-1.2
	DI 8B	10+90.73	DMH 8-2	10+90.73	1B-8B	0.48	0.5	G6	50.0	0.5	350.0	0.0100	20	10.9	10.9	2.82	0.08	30%	1.35	0.015	117.59	113.72	113.06	12	0.0220	30	4.6	5.8	0.1	0.0019	116.06	HGL	-1.5
	DMH 8-2	10+90.73	DMH 9	162+03.13	1B-8	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.5	2.52	0.08	30%	22.51	0.015	118.04	111.56	111.39	30	0.0026	66	18.0	3.7	0.3	0.0040	116.00	HGL	-2.0
Woodcreek-North	STUB 1C-9		DMH 9	162+03.13	1C-9S	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.8	2.49	0.08	30%	22.26	0.015	118	111.65	111.47	30	0.0026	70	18.0	3.7	0.3	0.0039	114.61	HGL	-3.4
	DMH 9	162+03.13	DMH 10-2	165+70.41	1C-1	0.00	9.0		0.0	0.0	0.0	0.0100	20	0.0	13.8	2.49	0.08	30%	22.26	0.015	118.48	111.47	107.80	30	0.0100	367	35.5	7.2	0.8	0.0039	115.73	HGL	-2.7
	STUB 10-2		DMH 10-2	165+70.41	1C-10S	2.62	2.6	F1	100.0	2.6	0.0	0.0100	20	5.8	5.8	3.84	0.08	30%	10.01	0.015	115	108.36	108.07	30	0.0060	48	27.6	5.6	0.1	0.0008	114.33	HGL	-0.7
	DMH 10-2	165+70.41	ExDMH A	166+49.22	1C-2	0.00	11.6		0.0	0.0	0.0	0.0100	20	0.0	14.7	2.42	0.08	30%	27.89	0.015	114.17	107.72	107.29	30	0.0055	78	26.4	5.4	0.2	0.0062	~~114.29~~	HGL	STREET FLOW
	DI AB		ExDMH A	166+49.22	1C-AB	0.62	0.6	G9	100.0	0.6	100.0	0.0100	20	7.7	7.7	3.34	0.08	30%	2.07	0.015	113.59	108.42	107.94	12	0.0436	11	6.4	8.2	0.0	0.0045	~~113.86~~	HGL	STREET FLOW
	ExDMH A	166+49.22	ExDMH B	170+99.78	1C-3	0.00	12.3		0.0	0.0	0.0	0.0100	20	0.0	14.9	2.40	0.08	30%	29.14	0.015	113.94	107.24	105.93	30	0.0029	450.56	19.2	3.9	1.9	0.0067	113.81	HGL	-0.1
	ExDI BA		ExDMH B	170+99.78	1C-BA	0.85	0.8	F3A	50.0	0.8	400.0	0.0100	20	10.8	10.8	2.82	0.08	30%	2.38	0.015	112	107.4	107.18	12	0.0031	71	1.7	2.2	0.5	0.0059	111.45	HGL	-0.6
	STUB 1C-BBS		DI BB		1C-BBS	2.31	2.3	F2	100.0	2.3	0.0	0.0100	20	5.8	5.8	3.84	0.08	30%	8.82	0.015	113	108.13	108.09	18	0.0022	18	4.3	2.4	0.1	0.0094	110.95	HGL	-2.0
	DI BB		ExDMH B	170+99.78	1C-BB	1.00	3.3	F3	50.0	1.0	400.0	0.0100	20	10.5	10.5	2.86	0.08	30%	9.38	0.015	111.67	108.09	108.04	18	0.0022	23	4.2	2.4	0.2	0.0106	111.03	HGL	-0.6
	ExDMH B	170+99.78	ExDMH C	171+83.55	1C-4	0.00	16.4		0.0	0.0	0.0	0.0100	20	0.0	16.8	2.26	0.08	30%	36.71	0.015	112.58	105.88	105.48	30	0.0048	83.75	24.6	5.0	0.3	0.0107	110.78	HGL	-1.8
	ExDMH C	171+83.55	OUTFALL 1A	Directly to Ex 54" Culvert			16.4								17.1	2.24	0.08	30%	36.40		112.88										109.89	HGL	-3.0
																											Starting HGL assumed top of 54" Pipe				109.89	HGL	

Woodcreek Oaks Blvd (South)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/27/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

100 Year Design Storm

						Node Area			Pipe Data																	HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 100 Year (cfs/acre)	Fi	Pervious	Qp 100 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	100 Yr HGL Slope	U/S 100 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
1C-Woodcreek-South	STUB 1C-14		DMH H14		1C-14S	1.87	11.9	H13	150.0	1.9	200.0	0.0100	20	10.29	13.3	2.54	0.08	30.0%	30.03	0.015	119	107.60	107.55	36	0.0020	25	25.84	3.66	0.1	0.0027	112.35	HGL	-6.6
	ExDI H15A		DMH H14		1C-12	0.91	0.9	H15	50.0	0.9	400.0	0.0100	20	10.69	10.7	2.84	0.08	30.0%	2.56	0.015	116.01	112.61	112.56	18	0.0008	63	2.56	1.45	0.7	0.0008	114.11	Soffit	-1.9
	DI H14B		DMH H14		1C-11	0.61	0.6	H14	50.0	0.6	400.0	0.0100	20	11.42	11.4	2.75	0.08	30.0%	1.65	0.015	116.37	112.53	110.27	12	0.0779	29	8.62	10.97	0.0	0.0029	113.53	Soffit	-2.8
	DMH H14		DMH H14A		1C-15	0.00	13.4	0.0	0.0	0.0	0.0	0.0100	20	0.00	13.5	2.53	0.08	30.0%	33.70	0.015	116.82	108.27	107.55	36	0.0015	482	22.33	3.16	2.5	0.0034	112.28	HGL	-4.5
	DMH H14A		ExDMH H17		1C-16	0.00	13.4	0.0	0.0	0.0	0.0	0.0100	20	0.00	16.0	2.32	0.08	30.0%	30.88	0.015	114.91	107.55	107.45	36	0.0015	68	22.16	3.14	0.4	0.0029	110.64	HGL	-4.3
	STUB 1C-15		ExDMH H17		1C-16S	1.82	21.7	H16,H17,H18	50.0	1.8	300.0	0.0100	20	8.16	18.5	2.16	0.08	30.0%	46.40	0.015	119	105.47	105.45	60	0.0006	36	53.18	2.71	0.2	0.0004	110.47	Soffit	-8.5
	ExDMH H17		OUT4			0.00	35.2	0.0	0.0	0.0	0.0	0.0100	20	0.00	18.7	2.15	0.08	30.0%	74.66														
																											Starting HGL assumed top of Pipe			110.45	Soffit	

100-YR

Appendix F

HP Way

HYDRAULIC MODEL RESULTS

FOR THE

10-, 25-, AND 100-YEAR STORM EVENTS

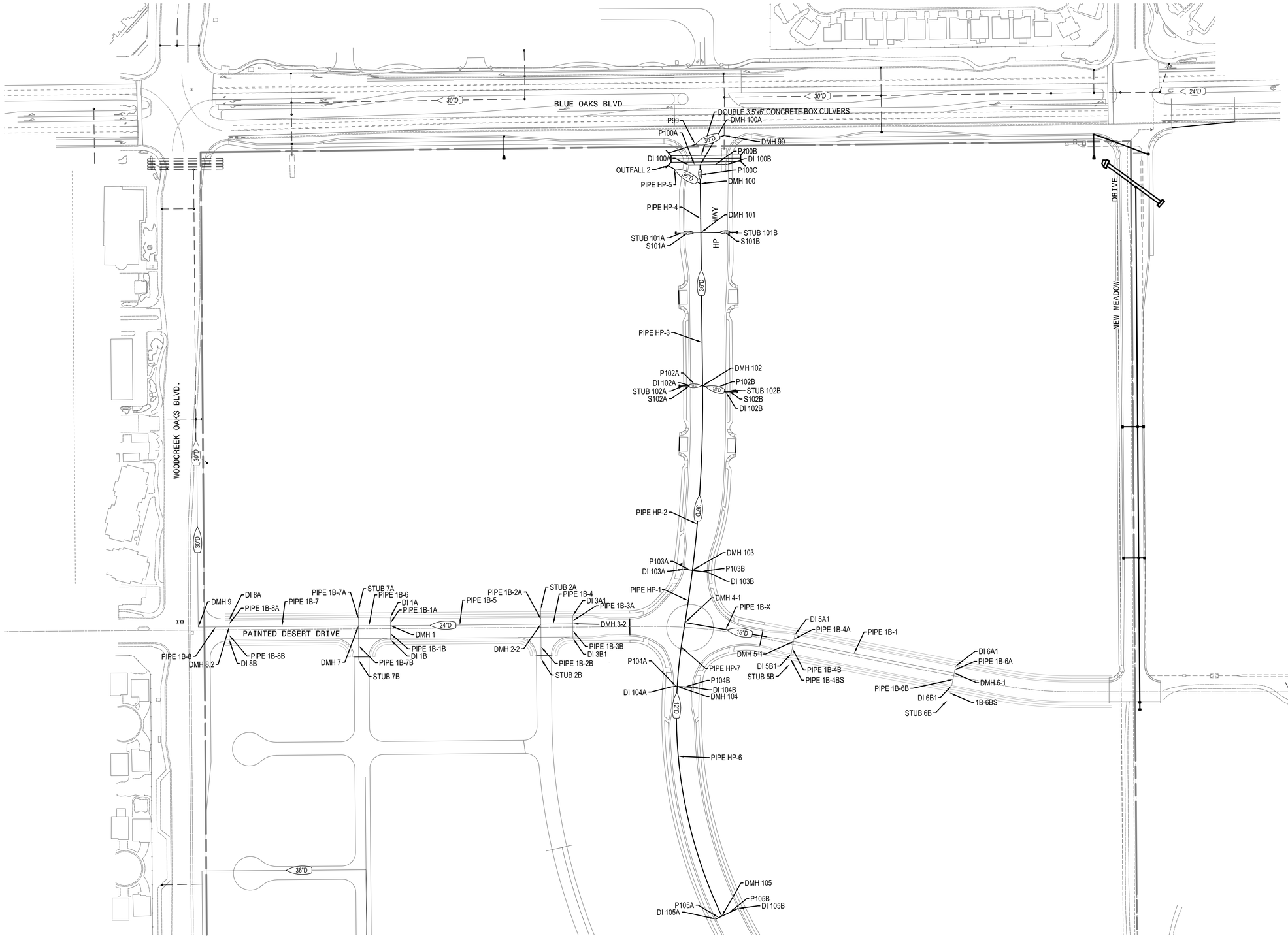
PAINTED DESERT DRIVE & HP WAY STORM DRAIN EXHIBIT

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA

DATE: 6.03.2015



GRAPHIC SCALE

100 50 0 100 200

1 in = 100 ft

MORTON & PITALO, INC.

CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING
LANDSCAPE ARCHITECTURE • TRAFFIC ENGINEERING

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survey email: staking@mpengr.com • web: www.mpengr.com

Dwg: X:\2013\13-0076-00\DWG\ENGR\DESIGN\DRAINAGE STUDY ATTACHMENTS\130076-APPF-HP WAY NORTH -SDE.DWG | Saved: 06-03-15 05:34pm MHAUGE | Plotted: 06-03-15 05:37pm MHAUGE

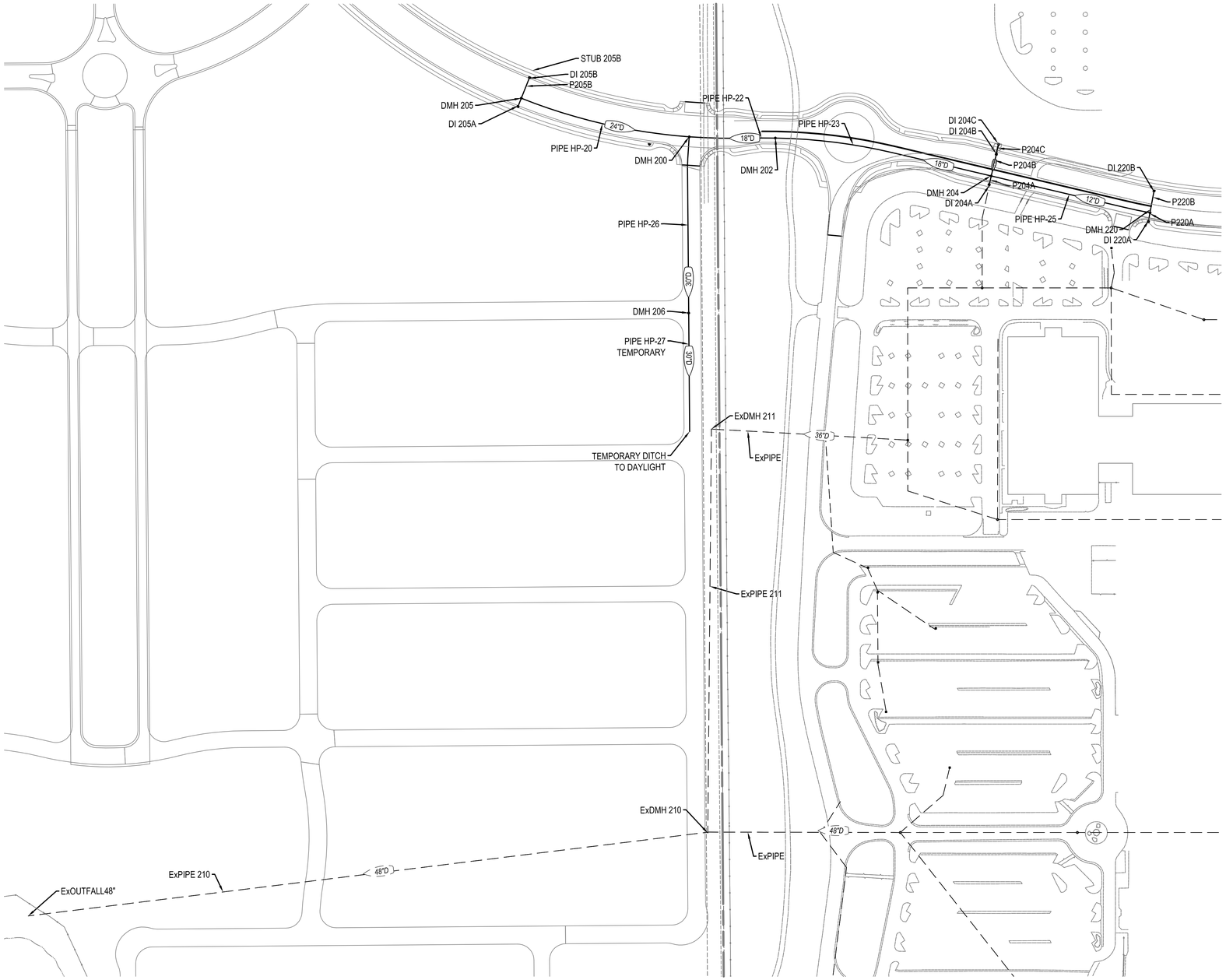
HP WAY
STORM DRAIN EXHIBIT

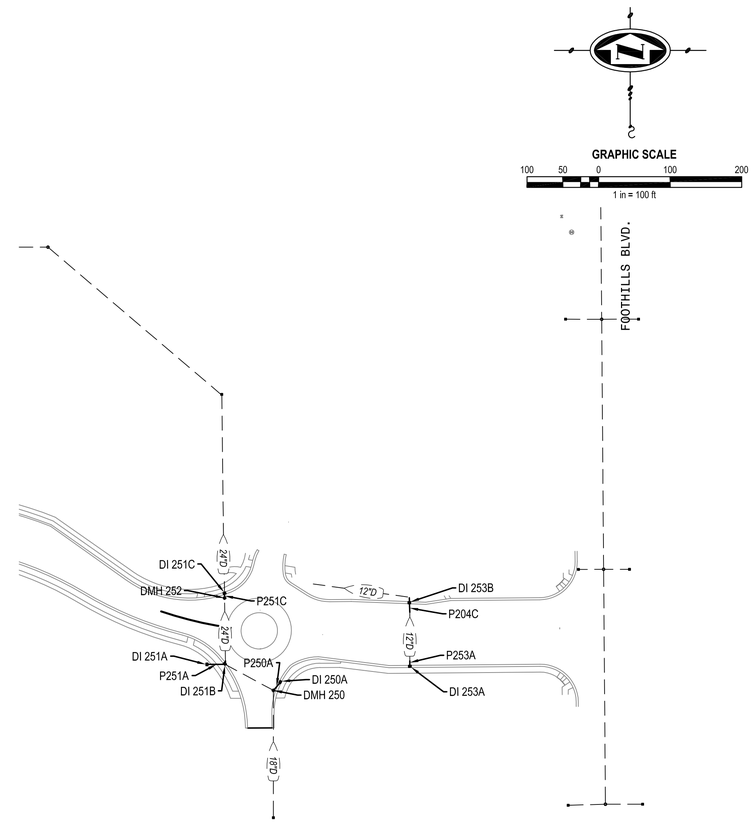
FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA

DATE: 6.02.2015





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Dwg: X:\2013\13-0076-00\DWG\ENGR\DESIGN\DRAINAGE STUDY ATTACHMENTS\130076-APPF-PH HP WAY SOUTH-SDE.DWG | Saved: 06-03-15 05:24pm MHAUGE | Plotted: 06-03-15 06:09pm MHAUGE

Painted Desert Drive (East) and HP Way (North)

DRAINAGE INLET CALCULATION

Road Name	Node Name	Cum. Ac.	RUN (min)	Inlet Location Condition	Fi & Pervious	10-Year Peak Flow at DI (cfs)	10-Year Depth at DI (inch)	25-Year Peak Flow at DI (cfs)	25-Year Depth at DI (inch)	100-Year Peak Flow at DI (cfs)	100-Year Depth at DI (inch)
HP Way	DI 105A	0.3	14.8	Sag	0.08 / 30%	0.5	1.3	0.6	1.4	0.7	1.5
HP Way	DI 105B	0.7	13.9	Sag	0.08 / 30%	1.0	1.7	1.4	1.9	1.7	2.0
HP Way	DI 104A	0.6	10.5	Sag	0.08 / 30%	1.0	1.7	1.4	1.9	1.7	2.0
HP Way	DI 104B	0.8	12.2	Sag	0.08 / 30%	1.4	1.9	1.8	2.1	2.2	2.3
HP Way	DI 103A	0.1	5.2	Sag	0.08 / 30%	0.3	0.9	0.4	1.2	0.5	1.3
HP Way	DI 103B	0.2	5.1	Sag	0.08 / 30%	0.6	1.4	0.7	1.5	0.9	1.6
HP Way	DI 102A	1.3	11.4	Sag	0.08 / 30%	1.0	1.7	1.4	1.9	1.7	2.0
HP Way	DI 102B	3.4	11.5	Sag	0.08 / 30%	1.0	1.7	1.3	1.8	1.6	2.0
HP Way	DI 100A	0.6	10.1	Sag	0.08 / 30%	1.1	1.7	1.4	1.9	1.8	2.1
HP Way	DI 100B	1.3	11.4	Sag	0.08 / 30%	2.2	2.3	2.9	3.0	3.5	4.3
Painted Desert Drive	DI 6A1	0.4	9.2	Sag	0.08 / 30%	0.7	1.5	0.9	1.6	1.1	1.7
Painted Desert Drive	DI 6B1	2.1	9.2	Sag	0.08 / 30%	0.7	1.5	0.9	1.6	1.1	1.7
Painted Desert Drive	DI 5A1	0.3	6.9	Sag	0.08 / 30%	0.6	1.4	0.8	1.5	1.0	1.7
Painted Desert Drive	DI 5B1	2.9	7.0	Sag	0.08 / 30%	0.6	1.4	0.8	1.5	0.9	1.6

HP Way (South)

DRAINAGE INLET CALCULATION

Road Name	Node Name	Inlet Location Condition	Cum. Ac.	RUN (min)	Fi & Pervious	10-Year Peak Flow (cfs)	10-Year Depth at DI (inch)	25-Year Peak Flow (cfs)	25-Year Depth at DI (inch)	100-Year Peak Flow (cfs)	100-Year Depth at DI (inch)
HP Way	DI 204C	Sag	0.4	8.8	0.08 / 30%	0.7	1.5	1.0	1.7	1.2	1.8
HP Way	DI 204B	Sag	2.6	15.0	0.08 / 30%	3.2	3.6	4.2	5.8	5.2	7.7
HP Way	DI 204A	Sag	1.1	15.0	0.08 / 30%	1.6	2.0	2.0	2.2	2.5	2.4
HP Way	DI 205B	Sag	5.9	13.4	0.08 / 30%	1.5	1.9	1.9	2.1	2.4	2.4
HP Way	DI 205A	Sag	0.6	5.3	0.08 / 30%	1.5	1.9	1.9	2.1	2.3	2.3

Painted Desert Drive (East) and HP Way (North)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/27/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

0.08 0.3

10 Year Design Storm

							Node Area											Pipe Data										HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 10 Year (cfs/acre)	Fi	Pervious	Qp 10 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	10 Yr HGL Slope	U/S 10 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
1X-HP Way - Northern	DI 105A	27+50.00	DMH 105	27+50.00	P105A	0.31	0.3	C5	50.0	0.3	490.0	0.0100	20	14.8	14.8	1.51	0.08	30%	0.46	0.015	128.82	122.08	122.04	12	0.0029	14	1.6	2.1	0.1	0.0002	123.08	Soffit	-5.7
	DI 105B	27+50.00	DMH 105	27+50.00	P105B	0.68	0.7	C4	50.0	0.7	550.0	0.0100	20	13.9	13.9	1.55	0.08	30%	1.05	0.015	128.82	122.14	122.04	12	0.0026	39	1.6	2.0	0.3	0.0012	123.14	Soffit	-5.7
	DMH 105	27+50.00	DMH 104	22+50.00	HP-6	0.00	1.0							0.0	14.3	1.54	0.08	30%	1.50	0.015	129.26	122.04	119.00	12	0.0060	506	2.4	3.0	2.8	0.0024	123.04	Soffit	-6.2
	DI 104A	22+50.00	DMH 104	22+50.00	P104A	0.59	0.6	C6	50.0	0.6	350.0	0.0100	20	10.5	10.5	1.79	0.08	30%	1.04	0.015	126.42	119.02	119.00	12	0.0029	7	1.6	2.1	0.1	0.0011	120.02	Soffit	-6.4
	DI 104B	22+50.00	DMH 104	22+50.00	P104B	0.83	0.8	C7, C9A	50.0	0.8	475.0	0.0100	20	12.2	12.2	1.66	0.08	30%	1.37	0.015	126.42	119.08	119.00	12	0.0025	32	1.5	2.0	0.3	0.0020	120.08	Soffit	-6.3
	DMH 104	22+50.00	DMH 4-1	21+13.46	HP-7	0.00	2.4							0.0	17.0	1.41	0.08	30%	3.34	0.015	126.73	119.00	117.17	12	0.0133	138	3.6	4.5	0.5	0.0117	120.00	Soffit	-6.7
1B-Painted Desert	DI 6A1	26+50	DMH 6-1	26+50	1B-6A	0.37	0.4	C3	50.0	0.4	250.0	0.0100	20	9.2	9.2	1.91	0.08	30%	0.69	0.015	125.10	121.23	121.15	12	0.0053	15	2.3	2.9	0.1	0.0005	122.60	HGL	-2.5
	STUB 6B	26+50	DI 6B1	26+50	1B-6BS	1.72	1.7	C1	250.0	1.7	0.0	0.0100	20	10.1	10.1	1.82	0.08	30%	3.10	0.015	125.66	121.32	121.23	12	0.0050	18	2.2	2.8	0.1	0.0101	123.21	HGL	-2.5
	DI 6B1	26+50	DMH 6-1	26+50	1B-6B	0.36	2.1	C2	50.0	0.4	250.0	0.0100	20	9.2	9.2	1.91	0.08	30%	3.91	0.015	125.10	121.23	121.09	12	0.0052	27	2.2	2.8	0.2	0.0161	123.02	HGL	-2.1
	DMH 6-1	26+50	DMH 5-1	23+00	1B-1	0.00	2.4							0.0	9.2	1.91	0.08	30%	4.60	0.015	125.66	121.09	119.34	18	0.0050	350	6.4	3.6	1.6	0.0026	122.59	Soffit	-3.1
	DI 5A1	23+00	DMH 5-1	23+00	1B-4A	0.28	0.3	C10	50.0	0.3	135.0	0.0100	20	6.9	6.9	2.20	0.08	30%	0.62	0.015	125.72	121.85	121.77	12	0.0053	15	2.3	2.9	0.1	0.0004	122.85	Soffit	-2.9
	STUB 5B	23+00	DI 5B1	23+00	1B-4BS	2.59	2.6	C8	300.0	2.6	0.0	0.0100	20	11.3	11.3	1.73	0.08	30%	4.42	0.015	126.28	121.94	121.85	18	0.0050	10	6.4	3.6	0.0	0.0024	123.44	Soffit	-2.8
	DI 5B1	23+00	DMH 5-1	23+00	1B-4B	0.27	2.9	C9	50.0	0.3	135.0	0.0100	20	7.0	7.0	2.20	0.08	30%	6.21	0.015	125.72	121.85	121.71	18	0.0052	27	6.6	3.7	0.1	0.0047	123.35	Soffit	-2.4
	DMH 5-1	23+00	DMH 4-1	21+13.46	1B-2	0.00	5.6							0.0	10.8	1.76	0.08	30%	9.71	0.015	126.28	118.84	117.60	18	0.0053	234	6.6	3.7	1.0	0.0114	120.83	HGL	-5.4
1X-HP Way - Northern Portion	DMH 4-1	21+13.46	DMH 103	19+99.99	HP-1	0.00	8.0							0.0	17.5	1.38	0.08	30%	10.89	0.015	126.17	115.17	114.49	36	0.0060	113	44.8	6.3	0.3	0.0004	118.17	Soffit	-8.0
	DI 103A	19+99.99	DMH 103	19+99.99	P103A	0.13	0.1	C10B	50.0	0.1	50.0	0.0100	20	5.2	5.2	2.54	0.08	30%	0.33	0.015	124.35	117.54	117.49	12	0.0028	18	1.6	2.1	0.1	0.0001	118.54	Soffit	-5.8
	DI 103B	19+99.99	DMH 103	19+99.99	P103B	0.22	0.2	C10A	50.0	0.2	50.0	0.0100	20	5.1	5.1	2.58	0.08	30%	0.57	0.015	124.58	117.57	117.49	12	0.0025	32	1.5	2.0	0.3	0.0003	118.57	Soffit	-6.0
	DMH 103	19+99.99	DMH 102	16+02.61	HP-2	0.00	8.4							0.0	17.8	1.37	0.08	30%	11.28	0.015	125.05	114.49	112.12	36	0.0060	396	44.7	6.3	1.0	0.0004	117.49	Soffit	-7.6
	STUB 102A	16+02.61	DI 102A	16+02.61	S102A	0.71	0.7	C11	100.0	0.7	0.0	0.0100	20	5.8	5.8	2.40	0.08	30%	1.68	0.015	120.94	112.25	112.19	18	0.0030	20	5.0	2.8	0.1	0.0003	115.26	HGL	-5.7
	DI 102A	16+02.61	DMH 102	16+02.61	P102A	0.61	1.3	C12	50.0	0.6	400.0	0.0100	20	11.4	11.4	1.72	0.08	30%	2.23	0.015	120.23	112.19	112.12	12	0.0027	26	1.6	2.0	0.2	0.0052	115.26	HGL	-5.0
	STUB 102B	16+16.18	DI 102B	16+16.18	S102B	2.83	2.8	C14	100.0	2.8	0.0	0.0100	20	5.8	5.8	2.40	0.08	30%	6.74	0.015	120.94	112.31	112.25	18	0.0030	20	5.0	2.8	0.1	0.0055	117.00	HGL	-3.9
	DI 102B	16+16.18	DMH 102	16+02.61	P102B	0.58	3.4	C13	50.0	0.6	400.0	0.0100	20	11.5	11.5	1.71	0.08	30%	5.76	0.015	120.37	112.25	112.12	12	0.0026	51	1.6	2.0	0.4	0.0348	116.90	HGL	-3.5
	DMH 102	16+02.61	DMH 101	12+75.00	HP-3	0.00	13.1							0.0	18.9	1.33	0.08	30%	17.16	0.015	120.94	112.12	110.26	36	0.0057	327	43.6	6.2	0.9	0.0009	115.12	Soffit	-5.8
	STUB 101A	12+75.00	DMH 101	12+75.00	S101A	1.18	1.2	C15	100.0	1.2	0.0	0.0100	20	5.8	5.8	2.40	0.08	30%	2.80	0.015	117.60	110.41	110.26	18	0.0030	50	5.0	2.8	0.3	0.0009	113.31	HGL	-4.3
	STUB 101B	12+75.00	DMH 101	12+75.00	S101B	1.70	1.7	C18	100.0	1.7	0.0	0.0100	20	5.8	5.8	2.40	0.08	30%	4.05	0.015	117.60	110.48	110.26	18	0.0030	73	5.0	2.8	0.4	0.0020	113.40	HGL	-4.2
	DMH 101	12+75.00	DMH 100	11+70.00	HP-4	0.00	16.0							0.0	19.8	1.30	0.08	30%	20.45	0.015	117.60	110.26	109.66	36	0.0057	105	43.7	6.2	0.3	0.0013	113.26	Soffit	-4.3
	DI 100A	11+30.00	DMH 100A	11+30.00	P100A	0.61	0.6	C16	50.0	0.6	330.0	0.0100	20	10.1	10.1	1.83	0.08	30%	1.10	0.015	114.87	111.91	111.84	12	0.0027	26	1.6	2.0	0.2	0.0013	113.18	HGL	-1.7
	DI 100B	11+30.00	DMH 100A	11+30.00	P100B	1.30	1.3	C17, C20	70.0	1.3	430.0	0.0100	20	11.4	11.4	1.72	0.08	30%	2.20	0.015	114.68	111.99	111.84	12	0.0026	57	1.6	2.0	0.5	0.0051	113.44	HGL	-1.2
	DMH 100A	11+30.00	DMH 100	11+70.00	P100C	0.00	1.9							0.0	10.3	1.81	0.08	30%	3.42	0.015	115.85	111.84	111.66	12	0.0045	40	2.1	2.6	0.3	0.0123	113.15	HGL	-2.7
	DMH 100	11+70.00	OUTFALL 2		HP-5	0.00	17.9							0.0	20.1	1.31	0.08	30%	23.02	0.015	116.57	109.66	109.00	36	0.0084	79	52.8	7.5	0.2	0.0016	112.66	Soffit	-3.9
																															Starting HGL assumed top of Pipe	112.00	

HP Way (South)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/27/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

0.08 0.3

10 Year Design Storm

						Node Area			Pipe Data																HGL Data			
	From (Upper)	*From (Upper Sta)*	*To (Lower)*	*To (Lower Sta)*	*Pipe Name*	*Node Ac*	*Cum. Ac.*	*Inlet Watershed Node Location*	*L (Yard)*	*A (Collector)*	*L (Collector)*	*S (Collector)*	*Z*	RUN (min)	*Cum. Tr (min)*	*qu 10 Year (cfs/acre)*	*Fi*	*Pervious*	*Qp 10 Year (cfs)*	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	*Full Flow Q (cfs)*	*Full Flow V (fps)*	*Pipe Travel Time (min)*	*10 Yr HGL Slope*	*U/S 10 Yr HGL*	*U/S HGL Design Control*	*HGL to Rim/Grate*
1X-HP Way - Central Portion	DI 204C	43+57.89	DMH 204	43+57.89	P204C	0.38	0.38	J50	200.0	0.4	0.0	0.0100	20	8.8	8.8	1.95	0.08	30%	0.73	0.015	131.33	128.15	128.10	12	0.0026	19	1.6	2.0	0.2	0.0006	129.86	HGL	-1.5
	DI 204B	43+57.89	DMH 204	43+57.89	P204B	2.20	2.58	J51	170.0	2.2	675.0	0.0100	20	15.0	15.0	1.50	0.08	30%	3.80	0.015	131.59	128.10	128.00	18	0.0026	38	4.7	2.6	0.2	0.0017	129.85	HGL	-1.7
	DI 204A	43+57.89	DMH 204	43+57.89	P204A	1.06	1.06	J52	50.0	1.1	675.0	0.0100	20	15.0	15.0	1.50	0.08	30%	1.57	0.015	131.82	128.04	128.00	12	0.0027	15	1.6	2.0	0.1	0.0026	129.82	HGL	-2.0
	DMH 204	43+57.89	DMH 203	42+02.31	HP-24	0.00	3.6							0.0	15.2	1.49	0.08	30%	5.32	0.015	132.29	128.00	127.60	18	0.0026	156	4.6	2.6	1.0	0.0034	129.78	HGL	-2.5
	DMH 203	42+02.31	DMH 202	39+60.95	HP-23	0.00	3.6							0.0	16.2	1.44	0.08	30%	5.15	0.015	134.12	127.60	126.98	18	0.0026	239	4.6	2.6	1.5	0.0032	129.25	HGL	-4.9
	DMH 202	39+60.95	DMH 201	38+87.11	HP-22	0.00	3.6							0.0	17.8	1.38	0.08	30%	4.92	0.015	136.89	126.98	126.54	18	0.0059	74	7.0	4.0	0.3	0.0029	128.48	Soffit	-8.4
	DMH 201	38+87.11	DMH 200	38+06.86	HP-21	0.00	3.6							0.0	18.1	1.36	0.08	30%	4.88	0.015	137.51	126.54	126.05	18	0.0060	81	7.1	4.0	0.3	0.0029	128.04	Soffit	-9.5
	STUB 205B	35+00.02	DMH 205	35+00.02	S205B	5.11	5.11	J0	200.0	5.1	400.0	0.0100	20	13.3	13.3	1.59	0.08	30%	8.01	0.015	131.93	127.76	127.70	30	0.0030	20	19.5	4.0	0.1	0.0005	130.26	Soffit	-1.7
	DI 205B	35+00.02	DMH 205	35+00.02	P205B	0.78	5.89	J1	50.0	0.8	300.0	0.0100	20	9.2	13.4	1.59	0.08	30%	9.20	0.015	131.50	127.70	127.60	30	0.0026	39	18.0	3.7	0.2	0.0007	130.20	Soffit	-1.3
	DI 205A	35+00.02	DMH 205	35+00.02	P205A	0.58	0.58	J2	50.0	0.6	75.0	0.0100	20	5.3	5.3	2.52	0.08	30%	1.46	0.015	131.50	127.64	127.60	12	0.0029	14	1.6	2.1	0.1	0.0022	130.13	HGL	-1.4
	DMH 205	35+00.02	DMH 200	38+06.86	HP-20	0.00	6.5							0.0	13.5	1.58	0.08	30%	10.04	0.015	131.93	127.60	126.05	30	0.0050	311	25.1	5.1	1.0	0.0008	130.10	Soffit	-1.8
	DMH 200	38+06.86	DMH 206	0+00.00	HP-25	0.00	10.1							0.0	18.4	1.35	0.08	30%	13.43	0.015	136.70	124.55	115.94	30	0.0272	317	58.6	11.9	0.4	0.0014	127.05	Soffit	-9.6
	DMH 206	0+00.00	ExDMH 211	0+00.00	HP-26	0.00	10.1							0.0	18.8	1.34	0.08	30%	13.27	0.015	128.09	115.94	115.61	30	0.0015	213	14.0	2.8	1.2	0.0014	125.62	HGL	-2.5
	ExDMH 211	0+00.00	ExDMH 210	0+00.00	ExP211	35.78	45.9	HP1	300.0	35.8	0.0	0.0100	20	19.7	20.1	1.31	0.08	30%	58.95	0.015	122.31	115.11	112.00	36	0.0043	725	37.8	5.4	2.3	0.0104	125.32	HGL	STREET FLOW
	ExDMH 210	0+00.00	EX OUTFALL 48"		ExP210	36.58	82.5	HP2	150.0	36.6	0.0	0.0100	20	19.8	22.3	1.19	0.08	30%	96.40	0.015	123.40	111.30	106.38	48	0.0040	1233	78.6	6.3	3.3	0.0060	117.78	HGL	-5.6

Starting HGL assumed Top of Pipe 110.38

Painted Desert Drive (East) and HP Way (North)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/26/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

0.08 0.3

25 Year Design Storm

							Node Area												Pipe Data									HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 25 Year (cfs/acre)	Fi	Pervious	Qp 25 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	25 Yr HGL Slope	U/S 25 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
1X-HP Way - Northern	DI 105A	27+50.00	DMH 105	27+50.00	P105A	0.31	0.3	C5	50.0	0.3	490.0	0.0100	20	14.8	14.8	1.96	0.08	30%	0.60	0.015	128.82	122.08	122.04	12	0.0029	14	1.6	2.1	0.1	0.0004	123.08	Soffit	-5.7
	DI 105B	27+50.00	DMH 105	27+50.00	P105B	0.68	0.7	C4	50.0	0.7	550.0	0.0100	20	13.9	13.9	2.02	0.08	30%	1.37	0.015	128.82	122.14	122.04	12	0.0026	39	1.6	2.0	0.3	0.0020	123.14	Soffit	-5.7
	DMH 105	27+50.00	DMH 104	22+50.00	HP-6	0.00	1.0							0.0	14.3	2.00	0.08	30%	1.96	0.015	129.26	122.04	119.00	12	0.0060	506	2.4	3.0	2.8	0.0040	123.04	Soffit	-6.2
	DI 104A	22+50.00	DMH 104	22+50.00	P104A	0.59	0.6	C6	50.0	0.6	350.0	0.0100	20	10.5	10.5	2.33	0.08	30%	1.36	0.015	126.42	119.02	119.00	12	0.0029	7	1.6	2.1	0.1	0.0019	120.94	HGL	-5.5
	DI 104B	22+50.00	DMH 104	22+50.00	P104B	0.83	0.8	C7, C9A	50.0	0.8	475.0	0.0100	20	12.2	12.2	2.16	0.08	30%	1.78	0.015	126.42	119.08	119.00	12	0.0025	32	1.5	2.0	0.3	0.0033	121.03	HGL	-5.4
	DMH 104	22+50.00	DMH 4-1	21+13.46	HP-7	0.00	2.4							0.0	17.0	1.83	0.08	30%	4.36	0.015	126.73	119.00	117.17	12	0.0133	138	3.6	4.5	0.5	0.0200	120.93	HGL	-5.8
1B-Painted Desert	DI 6A1	26+50	DMH 6-1	26+50	1B-6A	0.37	0.4	C3	50.0	0.4	250.0	0.0100	20	9.2	9.2	2.48	0.08	30%	0.90	0.015	125.10	121.23	121.15	12	0.0053	15	2.3	2.9	0.1	0.0008	124.23	HGL	-0.9
	STUB 6B	26+50	DI 6B1	26+50	1B-6BS	1.72	1.7	C1	250.0	1.7	0.0	0.0100	20	10.1	10.1	2.37	0.08	30%	4.04	0.015	125.66	121.32	121.23	12	0.0050	18	2.2	2.8	0.1	0.0171	125.27	HGL	-0.4
	DI 6B1	26+50	DMH 6-1	26+50	1B-6B	0.36	2.1	C2	50.0	0.4	250.0	0.0100	20	9.2	9.2	2.48	0.08	30%	5.10	0.015	125.10	121.23	121.09	12	0.0052	27	2.2	2.8	0.2	0.0273	124.96	HGL	-0.1
	DMH 6-1	26+50	DMH 5-1	23+00	1B-1	0.00	2.4							0.0	9.2	2.48	0.08	30%	6.00	0.015	125.66	121.09	119.34	18	0.0050	350	6.4	3.6	1.6	0.0043	124.22	HGL	-1.4
	DI 5A1	23+00	DMH 5-1	23+00	1B-4A	0.28	0.3	C10	50.0	0.3	135.0	0.0100	20	6.9	6.9	2.86	0.08	30%	0.80	0.015	125.72	121.85	121.77	12	0.0053	15	2.3	2.9	0.1	0.0007	122.85	Soffit	-2.9
	STUB 5B	23+00	DI 5B1	23+00	1B-4BS	2.59	2.6	C8	300.0	2.6	0.0	0.0100	20	11.3	11.3	2.25	0.08	30%	5.76	0.015	126.28	121.94	121.85	18	0.0050	10	6.4	3.6	0.0	0.0040	123.44	Soffit	-2.8
	DI 5B1	23+00	DMH 5-1	23+00	1B-4B	0.27	2.9	C9	50.0	0.3	135.0	0.0100	20	7.0	7.0	2.85	0.08	30%	8.10	0.015	125.72	121.85	121.71	18	0.0052	27	6.6	3.7	0.1	0.0079	123.35	Soffit	-2.4
	DMH 5-1	23+00	DMH 4-1	21+13.46	1B-2	0.00	5.6							0.0	10.8	2.29	0.08	30%	12.66	0.015	126.28	118.84	117.60	18	0.0053	234	6.6	3.7	1.0	0.0193	122.70	HGL	-3.6
1X-HP Way - Northern Portion	DMH 4-1	21+13.46	DMH 103	19+99.99	HP-1	0.00	8.0							0.0	17.5	1.80	0.08	30%	14.22	0.015	126.17	115.17	114.49	36	0.0060	113	44.8	6.3	0.3	0.0006	118.17	Soffit	-8.0
	DI 103A	19+99.99	DMH 103	19+99.99	P103A	0.13	0.1	C10B	50.0	0.1	50.0	0.0100	20	5.2	5.2	3.30	0.08	30%	0.43	0.015	124.35	117.54	117.49	12	0.0028	18	1.6	2.1	0.1	0.0002	118.54	Soffit	-5.8
	DI 103B	19+99.99	DMH 103	19+99.99	P103B	0.22	0.2	C10A	50.0	0.2	50.0	0.0100	20	5.1	5.1	3.35	0.08	30%	0.74	0.015	124.58	117.57	117.49	12	0.0025	32	1.5	2.0	0.3	0.0006	118.57	Soffit	-6.0
	DMH 103	19+99.99	DMH 102	16+02.61	HP-2	0.00	8.4							0.0	17.8	1.78	0.08	30%	14.72	0.015	125.05	114.49	112.12	36	0.0060	396	44.7	6.3	1.0	0.0006	117.49	Soffit	-7.6
	STUB 102A	16+02.61	DI 102A	16+02.61	S102A	0.71	0.7	C11	100.0	0.7	0.0	0.0100	20	5.8	5.8	3.12	0.08	30%	2.19	0.015	120.94	112.25	112.19	18	0.0030	20	5.0	2.8	0.1	0.0006	115.36	HGL	-5.6
	DI 102A	16+02.61	DMH 102	16+02.61	P102A	0.61	1.3	C12	50.0	0.6	400.0	0.0100	20	11.4	11.4	2.23	0.08	30%	2.91	0.015	120.23	112.19	112.12	12	0.0027	26	1.6	2.0	0.2	0.0089	115.35	HGL	-4.9
	STUB 102B	16+16.18	DI 102B	16+16.18	S102B	2.83	2.8	C14	100.0	2.8	0.0	0.0100	20	5.8	5.8	3.12	0.08	30%	8.78	0.015	120.94	112.31	112.25	18	0.0030	20	5.0	2.8	0.1	0.0093	118.33	HGL	-2.6
	DI 102B	16+16.18	DMH 102	16+02.61	P102B	0.58	3.4	C13	50.0	0.6	400.0	0.0100	20	11.5	11.5	2.22	0.08	30%	7.51	0.015	120.37	112.25	112.12	12	0.0026	51	1.6	2.0	0.4	0.0592	118.14	HGL	-2.2
	DMH 102	16+02.61	DMH 101	12+75.00	HP-3	0.00	13.1							0.0	18.9	1.73	0.08	30%	22.40	0.015	120.94	112.12	110.26	36	0.0057	327	43.6	6.2	0.9	0.0015	115.12	Soffit	-5.8
	STUB 101A	12+75.00	DMH 101	12+75.00	S101A	1.18	1.2	C15	100.0	1.2	0.0	0.0100	20	5.8	5.8	3.12	0.08	30%	3.65	0.015	117.60	110.41	110.26	18	0.0030	50	5.0	2.8	0.3	0.0016	113.34	HGL	-4.3
	STUB 101B	12+75.00	DMH 101	12+75.00	S101B	1.70	1.7	C18	100.0	1.7	0.0	0.0100	20	5.8	5.8	3.12	0.08	30%	5.28	0.015	117.60	110.48	110.26	18	0.0030	73	5.0	2.8	0.4	0.0034	113.51	HGL	-4.1
	DMH 101	12+75.00	DMH 100	11+70.00	HP-4	0.00	16.0							0.0	19.8	1.70	0.08	30%	26.70	0.015	117.60	110.26	109.66	36	0.0057	105	43.7	6.2	0.3	0.0021	113.26	Soffit	-4.3
	DI 100A	11+30.00	DMH 100A	11+30.00	P100A	0.61	0.6	C16	50.0	0.6	330.0	0.0100	20	10.1	10.1	2.38	0.08	30%	1.44	0.015	114.87	111.91	111.84	12	0.0027	26	1.6	2.0	0.2	0.0022	113.55	HGL	-1.3
	DI 100B	11+30.00	DMH 100A	11+30.00	P100B	1.30	1.3	C17, C20	70.0	1.3	430.0	0.0100	20	11.4	11.4	2.23	0.08	30%	2.88	0.015	114.68	111.99	111.84	12	0.0026	57	1.6	2.0	0.5	0.0087	113.99	HGL	-0.7
	DMH 100A	11+30.00	DMH 100	11+70.00	P100C	0.00	1.9							0.0	10.3	2.35	0.08	30%	4.46	0.015	115.85	111.84	111.66	12	0.0045	40	2.1	2.6	0.3	0.0208	113.49	HGL	-2.4
	DMH 100	11+70.00	OUTFALL 2		HP-5	0.00	17.9							0.0	20.1	1.70	0.08	30%	30.05	0.015	116.57	109.66	109.00	36	0.0084	79	52.8	7.5	0.2	0.0027	112.66	Soffit	-3.9
																														Starting HGL assumed top of Pipe	112.00		

HP Way (South)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/27/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

0.08 0.3

25 Year Design Storm

						Node Area			Pipe Data																	HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 25 Year (cfs/acre)	Fi	Pervious	Qp 25 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	25 Yr HGL Slope	U/S 25 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
1X-HP Way - Central Portion	DI 204C	43+57.89	DMH 204	43+57.89	P204C	0.38	0.38	J50	200.0	0.4	0.0	0.0100	20	8.8	8.8	2.54	0.08	30%	0.95	0.015	131.33	128.15	128.10	12	0.0026	19	1.6	2.0	0.2	0.0010	140.26	HGL	STREET FLOW
	DI 204B	43+57.89	DMH 204	43+57.89	P204B	2.20	2.58	J51	170.0	2.2	675.0	0.0100	20	15.0	15.0	1.95	0.08	30%	4.96	0.015	131.59	128.10	128.00	18	0.0026	38	4.7	2.6	0.2	0.0030	140.23	HGL	STREET FLOW
	DI 204A	43+57.89	DMH 204	43+57.89	P204A	1.06	1.06	J52	50.0	1.1	675.0	0.0100	20	15.0	15.0	1.95	0.08	30%	2.05	0.015	131.82	128.04	128.00	12	0.0027	15	1.6	2.0	0.1	0.0044	140.19	HGL	STREET FLOW
	DMH 204	43+57.89	DMH 203	42+02.31	HP-24	0.00	3.6							0.0	15.2	1.93	0.08	30%	6.94	0.015	132.29	128.00	127.60	18	0.0026	156	4.6	2.6	1.0	0.0058	140.12	HGL	STREET FLOW
	DMH 203	42+02.31	DMH 202	39+60.95	HP-23	0.00	3.6							0.0	16.2	1.87	0.08	30%	6.73	0.015	134.12	127.60	126.98	18	0.0026	239	4.6	2.6	1.5	0.0055	139.21	HGL	STREET FLOW
	DMH 202	39+60.95	DMH 201	38+87.11	HP-22	0.00	3.6							0.0	17.8	1.79	0.08	30%	6.43	0.015	136.89	126.98	126.54	18	0.0059	74	7.0	4.0	0.3	0.0050	137.91	HGL	STREET FLOW
	DMH 201	38+87.11	DMH 200	38+06.86	HP-21	0.00	3.6							0.0	18.1	1.77	0.08	30%	6.37	0.015	137.51	126.54	126.05	18	0.0060	81	7.1	4.0	0.3	0.0049	137.54	HGL	STREET FLOW
	STUB 205B	35+00.02	DMH 205	35+00.02	S205B	5.11	5.11	J0	200.0	5.1	400.0	0.0100	20	13.3	13.3	2.07	0.08	30%	10.45	0.015	131.93	127.76	127.70	30	0.0030	20	19.5	4.0	0.1	0.0009	137.62	HGL	STREET FLOW
	DI 205B	35+00.02	DMH 205	35+00.02	P205B	0.78	5.89	J1	50.0	0.8	300.0	0.0100	20	9.2	13.4	2.06	0.08	30%	12.00	0.015	131.50	127.70	127.60	30	0.0026	39	18.0	3.7	0.2	0.0011	137.61	HGL	STREET FLOW
	DI 205A	35+00.02	DMH 205	35+00.02	P205A	0.58	0.58	J2	50.0	0.6	75.0	0.0100	20	5.3	5.3	3.28	0.08	30%	1.90	0.015	131.50	127.64	127.60	12	0.0029	14	1.6	2.1	0.1	0.0038	137.62	HGL	STREET FLOW
	DMH 205	35+00.02	DMH 200	38+06.86	HP-20	0.00	6.5							0.0	13.5	2.05	0.08	30%	13.10	0.015	131.93	127.60	126.05	30	0.0050	311	25.1	5.1	1.0	0.0014	137.56	HGL	STREET FLOW
	DMH 200	38+06.86	DMH 206	0+00.00	HP-25	0.00	10.1							0.0	18.4	1.76	0.08	30%	17.53	0.015	136.70	124.55	115.94	30	0.0272	317	58.6	11.9	0.4	0.0024	137.14	HGL	STREET FLOW
	DMH 206	0+00.00	ExDMH 211	0+00.00	HP-26	0.00	10.1							0.0	18.8	1.74	0.08	30%	17.32	0.015	128.09	115.94	115.61	30	0.0015	213	14.0	2.8	1.2	0.0024	136.97	HGL	STREET FLOW
	ExDMH 211	0+00.00	ExDMH 210	0+00.00	ExP211	35.78	45.9	HP1	300.0	35.8	0.0	0.0100	20	19.7	20.1	1.70	0.08	30%	76.97	0.015	122.31	115.11	112.00	36	0.0043	725	37.8	5.4	2.3	0.0177	135.86	HGL	STREET FLOW
	ExDMH 210	0+00.00	EX OUTFALL 48"		ExP210	36.58	82.5	HP2	150.0	36.6	0.0	0.0100	20	19.8	22.3	1.55	0.08	30%	125.91	0.015	123.40	111.30	106.38	48	0.0040	1233	78.6	6.3	3.3	0.0102	123.00	HGL	-0.4

Starting HGL assumed Top of Pipe 110.38

Painted Desert Drive (East) and HP Way (North)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/26/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

0.08 0.3

100 Year Design Storm

						Node Area			Pipe Data																	HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 100 Year (cfs/acre)	Fi	Pervious	Qp 100 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	100 Yr HGL Slope	U/S 100 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
1X-HP Way - Northern	DI 105A	27+50.00	DMH 105	27+50.00	P105A	0.31	0.3	C5	50.0	0.3	490.0	0.0100	20	14.8	14.8	2.41	0.08	30%	0.74	0.015	128.82	122.08	122.04	12	0.0029	14	1.6	2.1	0.1	0.0006	125.48	HGL	-3.3
	DI 105B	27+50.00	DMH 105	27+50.00	P105B	0.68	0.7	C4	50.0	0.7	550.0	0.0100	20	13.9	13.9	2.48	0.08	30%	1.69	0.015	128.82	122.14	122.04	12	0.0026	39	1.6	2.0	0.3	0.0030	125.59	HGL	-3.2
	DMH 105	27+50.00	DMH 104	22+50.00	HP-6	0.00	1.0							0.0	14.3	2.46	0.08	30%	2.42	0.015	129.26	122.04	119.00	12	0.0060	506	2.4	3.0	2.8	0.0061	125.47	HGL	-3.8
	DI 104A	22+50.00	DMH 104	22+50.00	P104A	0.59	0.6	C6	50.0	0.6	350.0	0.0100	20	10.5	10.5	2.86	0.08	30%	1.68	0.015	126.42	119.02	119.00	12	0.0029	7	1.6	2.1	0.1	0.0030	122.39	HGL	-4.0
	DI 104B	22+50.00	DMH 104	22+50.00	P104B	0.83	0.8	C7, C9A	50.0	0.8	475.0	0.0100	20	12.2	12.2	2.66	0.08	30%	2.20	0.015	126.42	119.08	119.00	12	0.0025	32	1.5	2.0	0.3	0.0051	122.53	HGL	-3.9
	DMH 104	22+50.00	DMH 4-1	21+13.46	HP-7	0.00	2.4							0.0	17.0	2.25	0.08	30%	5.38	0.015	126.73	119.00	117.17	12	0.0133	138	3.6	4.5	0.5	0.0304	122.36	HGL	-4.4
1B-Painted Desert	DI 6A1	26+50	DMH 6-1	26+50	1B-6A	0.37	0.4	C3	50.0	0.4	250.0	0.0100	20	9.2	9.2	3.06	0.08	30%	1.11	0.015	125.10	121.23	121.15	12	0.0053	15	2.3	2.9	0.1	0.0013	~~127.39~~	HGL	STREET FLOW
	STUB 6B	26+50	DI 6B1	26+50	1B-6BS	1.72	1.7	C1	250.0	1.7	0.0	0.0100	20	10.1	10.1	2.92	0.08	30%	4.98	0.015	125.66	121.32	121.23	12	0.0050	18	2.2	2.8	0.1	0.0260	~~126.96~~	HGL	STREET FLOW
	DI 6B1	26+50	DMH 6-1	26+50	1B-6B	0.36	2.1	C2	50.0	0.4	250.0	0.0100	20	9.2	9.2	3.05	0.08	30%	6.29	0.015	125.10	121.23	121.09	12	0.0052	27	2.2	2.8	0.2	0.0415	~~126.49~~	HGL	STREET FLOW
	DMH 6-1	26+50	DMH 5-1	23+00	1B-1	0.00	2.4							0.0	9.2	3.05	0.08	30%	7.40	0.015	125.66	121.09	119.34	18	0.0050	350	6.4	3.6	1.6	0.0066	~~127.97~~	HGL	STREET FLOW
	DI 5A1	23+00	DMH 5-1	23+00	1B-4A	0.28	0.3	C10	50.0	0.3	135.0	0.0100	20	6.9	6.9	3.52	0.08	30%	0.99	0.015	125.72	121.85	121.77	12	0.0053	15	2.3	2.9	0.1	0.0010	125.07	HGL	-0.6
	STUB 5B	23+00	DI 5B1	23+00	1B-4BS	2.59	2.6	C8	300.0	2.6	0.0	0.0100	20	11.3	11.3	2.76	0.08	30%	7.11	0.015	126.28	121.94	121.85	18	0.0050	10	6.4	3.6	0.0	0.0061	125.44	HGL	-0.8
	DI 5B1	23+00	DMH 5-1	23+00	1B-4B	0.27	2.9	C9	50.0	0.3	135.0	0.0100	20	7.0	7.0	3.51	0.08	30%	9.98	0.015	125.72	121.85	121.71	18	0.0052	27	6.6	3.7	0.1	0.0120	125.38	HGL	-0.3
	DMH 5-1	23+00	DMH 4-1	21+13.46	1B-2	0.00	5.6							0.0	10.8	2.82	0.08	30%	15.61	0.015	126.28	118.84	117.60	18	0.0053	234	6.6	3.7	1.0	0.0294	125.06	HGL	-1.2
1X-HP Way - Northern Portion	DMH 4-1	21+13.46	DMH 103	19+99.99	HP-1	0.00	8.0							0.0	17.5	2.22	0.08	30%	17.55	0.015	126.17	115.17	114.49	36	0.0060	113	44.8	6.3	0.3	0.0009	118.17	Soffit	-8.0
	DI 103A	19+99.99	DMH 103	19+99.99	P103A	0.13	0.1	C10B	50.0	0.1	50.0	0.0100	20	5.2	5.2	4.06	0.08	30%	0.53	0.015	124.35	117.54	117.49	12	0.0028	18	1.6	2.1	0.1	0.0003	118.54	Soffit	-5.8
	DI 103B	19+99.99	DMH 103	19+99.99	P103B	0.22	0.2	C10A	50.0	0.2	50.0	0.0100	20	5.1	5.1	4.12	0.08	30%	0.91	0.015	124.58	117.57	117.49	12	0.0025	32	1.5	2.0	0.3	0.0009	118.57	Soffit	-6.0
	DMH 103	19+99.99	DMH 102	16+02.61	HP-2	0.00	8.4							0.0	17.8	2.20	0.08	30%	18.17	0.015	125.05	114.49	112.12	36	0.0060	396	44.7	6.3	1.0	0.0010	117.49	Soffit	-7.6
	STUB 102A	16+02.61	DI 102A	16+02.61	S102A	0.71	0.7	C11	100.0	0.7	0.0	0.0100	20	5.8	5.8	3.84	0.08	30%	2.70	0.015	120.94	112.25	112.19	18	0.0030	20	5.0	2.8	0.1	0.0009	115.49	HGL	-5.5
	DI 102A	16+02.61	DMH 102	16+02.61	P102A	0.61	1.3	C12	50.0	0.6	400.0	0.0100	20	11.4	11.4	2.75	0.08	30%	3.59	0.015	120.23	112.19	112.12	12	0.0027	26	1.6	2.0	0.2	0.0135	115.47	HGL	-4.8
	STUB 102B	16+16.18	DI 102B	16+16.18	S102B	2.83	2.8	C14	100.0	2.8	0.0	0.0100	20	5.8	5.8	3.84	0.08	30%	10.82	0.015	120.94	112.31	112.25	18	0.0030	20	5.0	2.8	0.1	0.0141	120.00	HGL	-0.9
	DI 102B	16+16.18	DMH 102	16+02.61	P102B	0.58	3.4	C13	50.0	0.6	400.0	0.0100	20	11.5	11.5	2.74	0.08	30%	9.26	0.015	120.37	112.25	112.12	12	0.0026	51	1.6	2.0	0.4	0.0901	119.71	HGL	-0.7
	DMH 102	16+02.61	DMH 101	12+75.00	HP-3	0.00	13.1							0.0	18.9	2.14	0.08	30%	27.64	0.015	120.94	112.12	110.26	36	0.0057	327	43.6	6.2	0.9	0.0023	115.12	Soffit	-5.8
	STUB 101A	12+75.00	DMH 101	12+75.00	S101A	1.18	1.2	C15	100.0	1.2	0.0	0.0100	20	5.8	5.8	3.84	0.08	30%	4.49	0.015	117.60	110.41	110.26	18	0.0030	50	5.0	2.8	0.3	0.0024	113.38	HGL	-4.2
	STUB 101B	12+75.00	DMH 101	12+75.00	S101B	1.70	1.7	C18	100.0	1.7	0.0	0.0100	20	5.8	5.8	3.84	0.08	30%	6.51	0.015	117.60	110.48	110.26	18	0.0030	73	5.0	2.8	0.4	0.0051	113.63	HGL	-4.0
	DMH 101	12+75.00	DMH 100	11+70.00	HP-4	0.00	16.0							0.0	19.8	2.09	0.08	30%	32.96	0.015	117.60	110.26	109.66	36	0.0057	105	43.7	6.2	0.3	0.0033	113.26	Soffit	-4.3
	DI 100A	11+30.00	DMH 100A	11+30.00	P100A	0.61	0.6	C16	50.0	0.6	330.0	0.0100	20	10.1	10.1	2.92	0.08	30%	1.77	0.015	114.87	111.91	111.84	12	0.0027	26	1.6	2.0	0.2	0.0033	114.01	HGL	-0.9
	DI 100B	11+30.00	DMH 100A	11+30.00	P100B	1.30	1.3	C17, C20	70.0	1.3	430.0	0.0100	20	11.4	11.4	2.75	0.08	30%	3.55	0.015	114.68	111.99	111.84	12	0.0026	57	1.6	2.0	0.5	0.0132	~~114.68~~	HGL	STREET FLOW
	DMH 100A	11+30.00	DMH 100	11+70.00	P100C	0.00	1.9							0.0	10.3	2.89	0.08	30%	5.50	0.015	115.85	111.84	111.66	12	0.0045	40	2.1	2.6	0.3	0.0317	113.93	HGL	-1.9
	DMH 100	11+70.00	OUTFALL 2		HP-5	0.00	17.9							0.0	20.1	2.10	0.08	30%	37.08	0.015	116.57	109.66	109.00	36	0.0084	79	52.8	7.5	0.2	0.0041	112.66	Soffit	-3.9

Starting HGL assumed top of Pipe 112.00

HP Way (South)

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 5/27/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

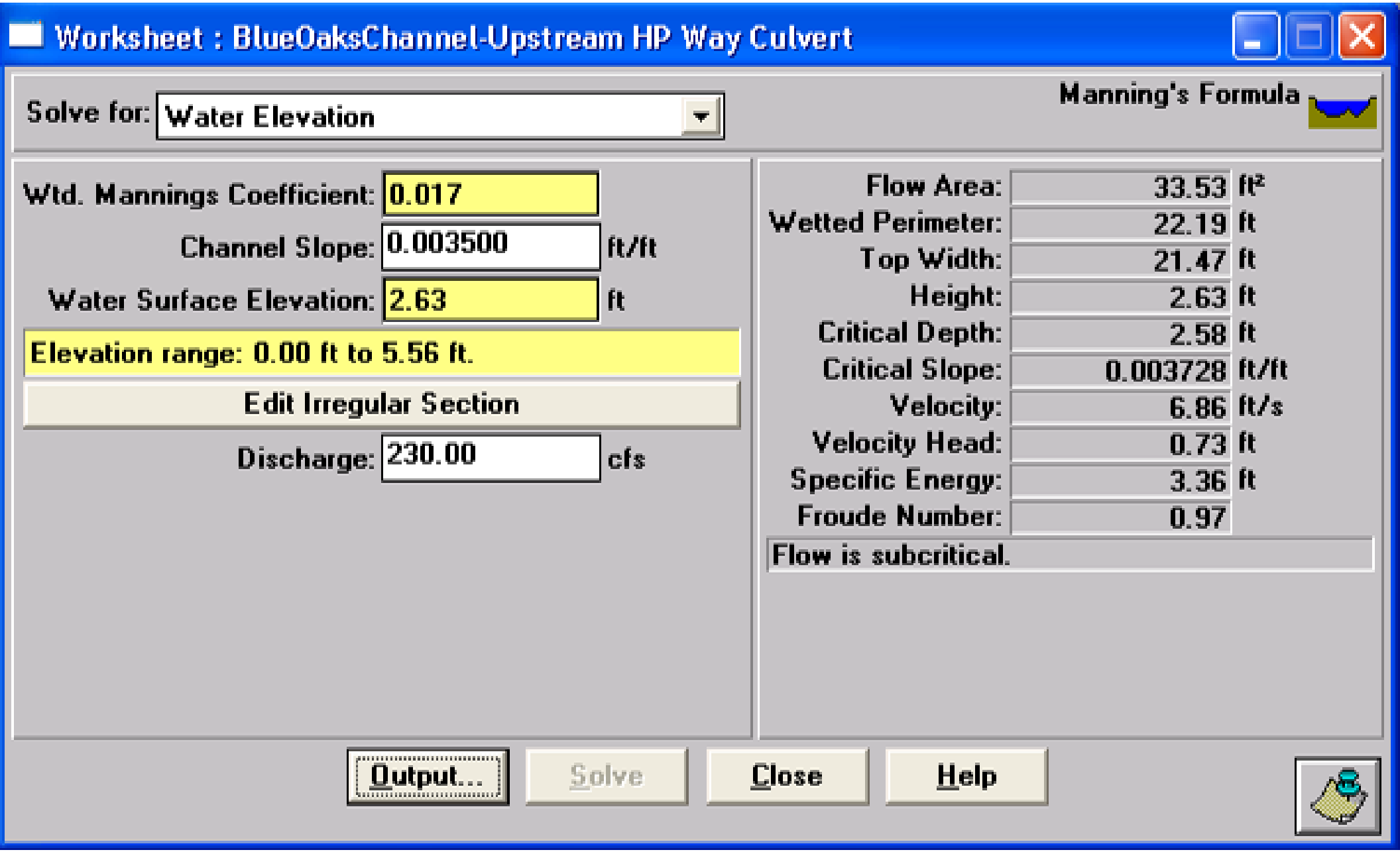
	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

0.08 0.3

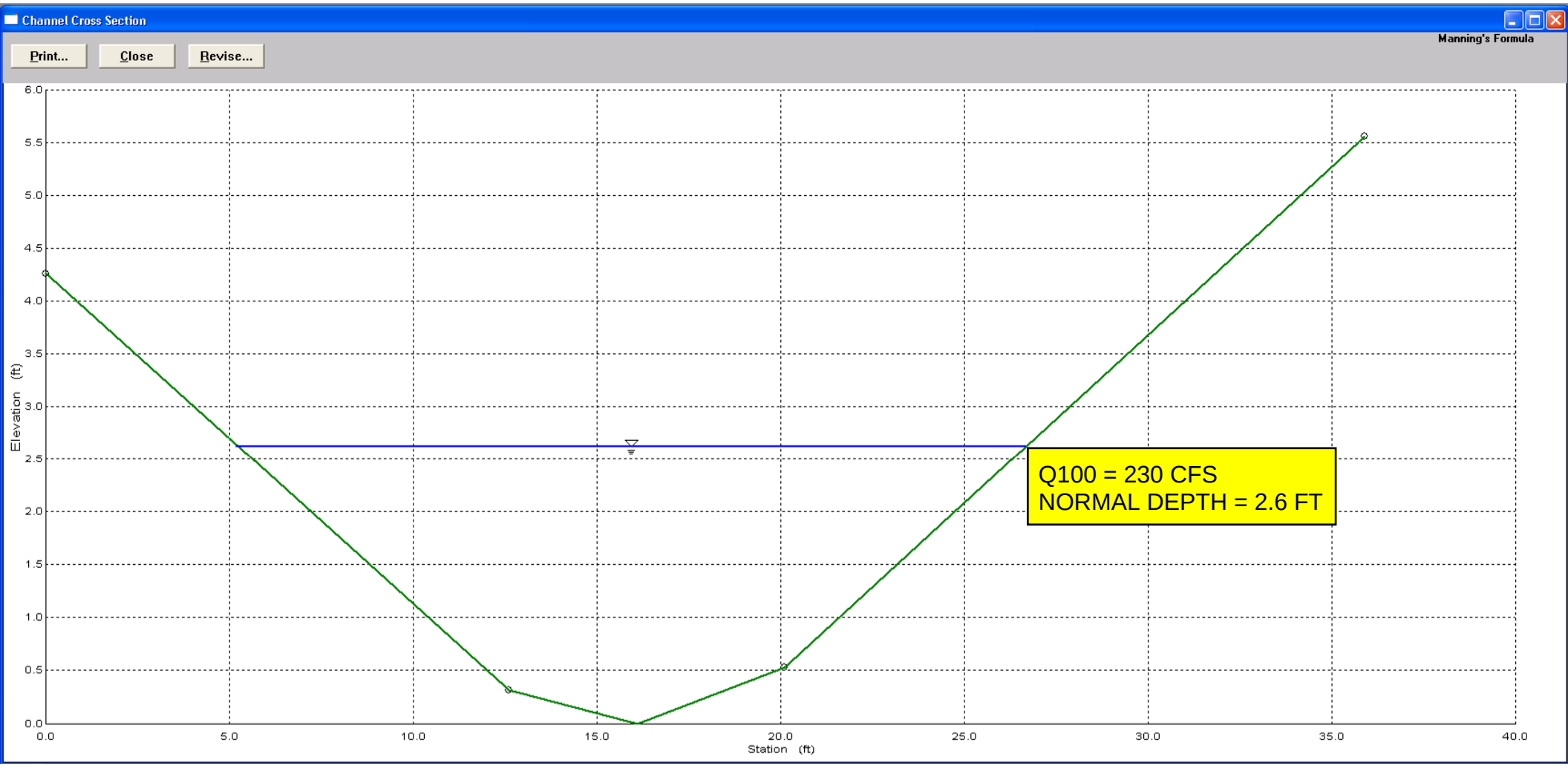
100 Year Design Storm

						Node Area			Pipe Data																HGL Data			
	From (Upper)	*From (Upper Sta)*	*To (Lower)*	*To (Lower Sta)*	*Pipe Name*	*Node Ac*	*Cum. Ac.*	*Inlet Watershed Node Location*	*L (Yard)*	*A (Collector)*	*L (Collector)*	*S (Collector)*	*Z*	RUN (min)	*Cum. Tr (min)*	*qu 100 Year (cfs/acre)*	*Fi*	*Pervious*	*Qp 100 Year (cfs)*	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	*Full Flow Q (cfs)*	*Full Flow V (fps)*	*Pipe Travel Time (min)*	*100 Yr HGL Slope*	*U/S 100 Yr HGL*	*U/S HGL Design Control*	*HGL to Rim/Grate*
1X-HP Way - Central Portion	DI 204C	43+57.89	DMH 204	43+57.89	P204C	0.38	0.38	J50	200.0	0.4	0.0	0.0100	20	8.8	8.8	3.12	0.08	30%	1.17	0.015	131.33	128.15	128.10	12	0.0026	19	1.6	2.0	0.2	0.0014	130.88	HGL	STREET FLOW
	DI 204B	43+57.89	DMH 204	43+57.89	P204B	2.20	2.58	J51	170.0	2.2	675.0	0.0100	20	15.0	15.0	2.40	0.08	30%	6.12	0.015	131.59	128.10	128.00	18	0.0026	38	4.7	2.6	0.2	0.0045	130.86	HGL	STREET FLOW
	DI 204A	43+57.89	DMH 204	43+57.89	P204A	1.06	1.06	J52	50.0	1.1	675.0	0.0100	20	15.0	15.0	2.40	0.08	30%	2.53	0.015	131.82	128.04	128.00	12	0.0027	15	1.6	2.0	0.1	0.0067	130.76	HGL	STREET FLOW
	DMH 204	43+57.89	DMH 203	42+02.31	HP-24	0.00	3.6							0.0	15.2	2.38	0.08	30%	8.57	0.015	132.29	128.00	127.60	18	0.0026	156	4.6	2.6	1.0	0.0089	130.68	HGL	STREET FLOW
	DMH 203	42+02.31	DMH 202	39+60.95	HP-23	0.00	3.6							0.0	16.2	2.30	0.08	30%	8.30	0.015	134.12	127.60	126.98	18	0.0026	239	4.6	2.6	1.5	0.0083	130.90	HGL	STREET FLOW
	DMH 202	39+60.95	DMH 201	38+87.11	HP-22	0.00	3.6							0.0	17.8	2.20	0.08	30%	7.93	0.015	136.89	126.98	126.54	18	0.0059	74	7.0	4.0	0.3	0.0076	130.91	HGL	STREET FLOW
	DMH 201	38+87.11	DMH 200	38+06.86	HP-21	0.00	3.6							0.0	18.1	2.18	0.08	30%	7.86	0.015	137.51	126.54	126.05	18	0.0060	81	7.1	4.0	0.3	0.0075	131.76	HGL	STREET FLOW
	STUB 205B	35+00.02	DMH 205	35+00.02	S205B	5.11	5.11	J0	200.0	5.1	400.0	0.0100	20	13.3	13.3	2.55	0.08	30%	12.89	0.015	131.93	127.76	127.70	30	0.0030	20	19.5	4.0	0.1	0.0013	131.98	HGL	STREET FLOW
	DI 205B	35+00.02	DMH 205	35+00.02	P205B	0.78	5.89	J1	50.0	0.8	300.0	0.0100	20	9.2	13.4	2.54	0.08	30%	14.80	0.015	131.50	127.70	127.60	30	0.0026	39	18.0	3.7	0.2	0.0017	131.86	HGL	STREET FLOW
	DI 205A	35+00.02	DMH 205	35+00.02	P205A	0.58	0.58	J2	50.0	0.6	75.0	0.0100	20	5.3	5.3	4.04	0.08	30%	2.35	0.015	131.50	127.64	127.60	12	0.0029	14	1.6	2.1	0.1	0.0058	131.87	HGL	STREET FLOW
	DMH 205	35+00.02	DMH 200	38+06.86	HP-20	0.00	6.5							0.0	13.5	2.52	0.08	30%	16.16	0.015	131.93	127.60	126.05	30	0.0050	311	25.1	5.1	1.0	0.0021	131.79	HGL	STREET FLOW
	DMH 200	38+06.86	DMH 206	0+00.00	HP-25	0.00	10.1							0.0	18.4	2.16	0.08	30%	21.63	0.015	136.70	124.55	115.94	30	0.0272	317	58.6	11.9	0.4	0.0037	131.14	HGL	STREET FLOW
	DMH 206	0+00.00	ExDMH 211	0+00.00	HP-26	0.00	10.1							0.0	18.8	2.14	0.08	30%	21.37	0.015	128.09	115.94	115.61	30	0.0015	213	14.0	2.8	1.2	0.0036	149.97	HGL	STREET FLOW
	ExDMH 211	0+00.00	ExDMH 210	0+00.00	ExP211	35.78	45.9	HP1	300.0	35.8	0.0	0.0100	20	19.7	20.1	2.09	0.08	30%	94.99	0.015	122.31	115.11	112.00	36	0.0043	725	37.8	5.4	2.3	0.0270	149.20	HGL	STREET FLOW
	ExDMH 210	0+00.00	EX OUTFALL 48"		ExP210	36.58	82.5	HP2	150.0	36.6	0.0	0.0100	20	19.8	22.3	1.91	0.08	30%	155.42	0.015	123.40	111.30	106.38	48	0.0040	1233	78.6	6.3	3.3	0.0156	129.61	HGL	STREET FLOW

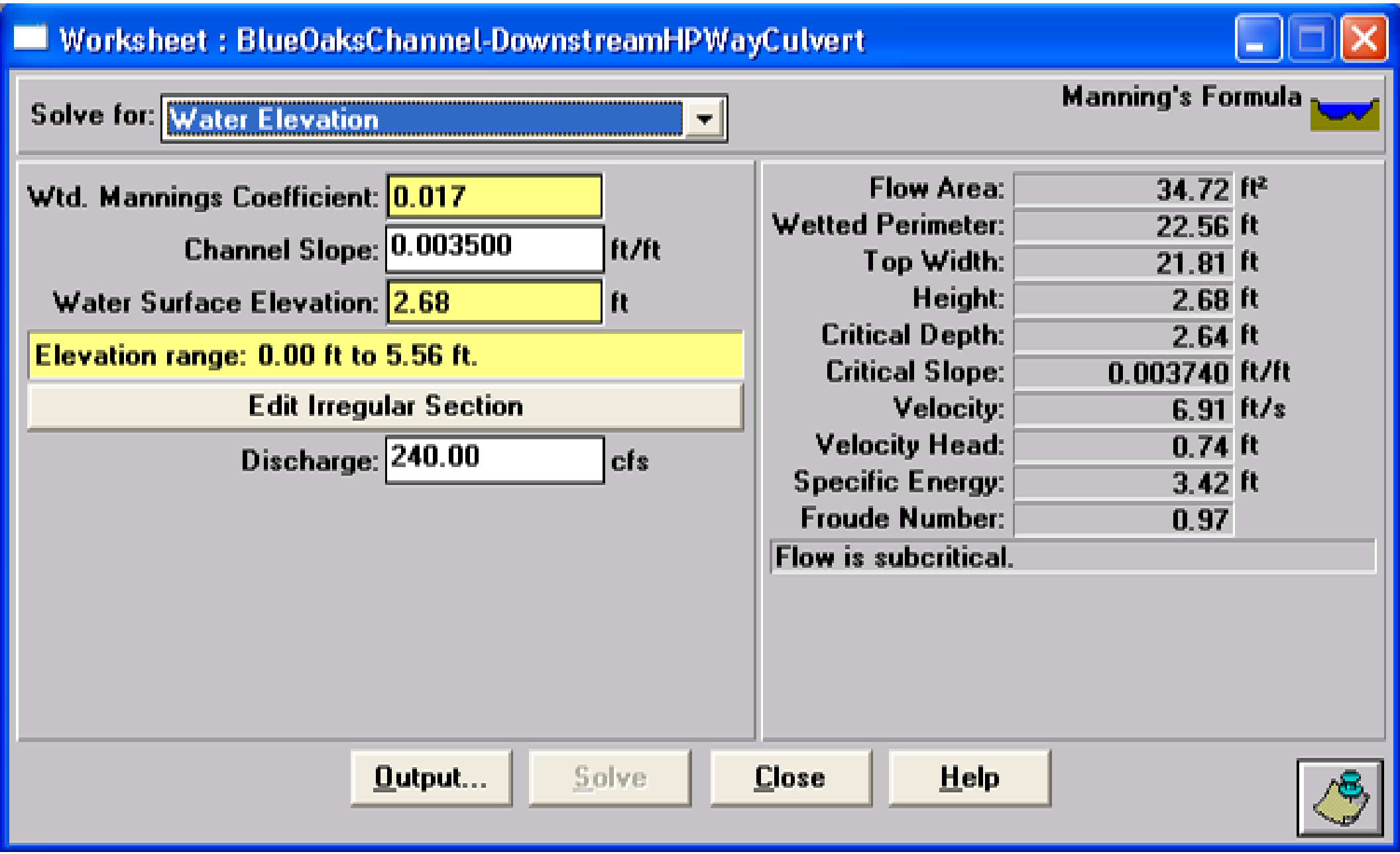
Starting HGL assumed Top of Pipe 110.38



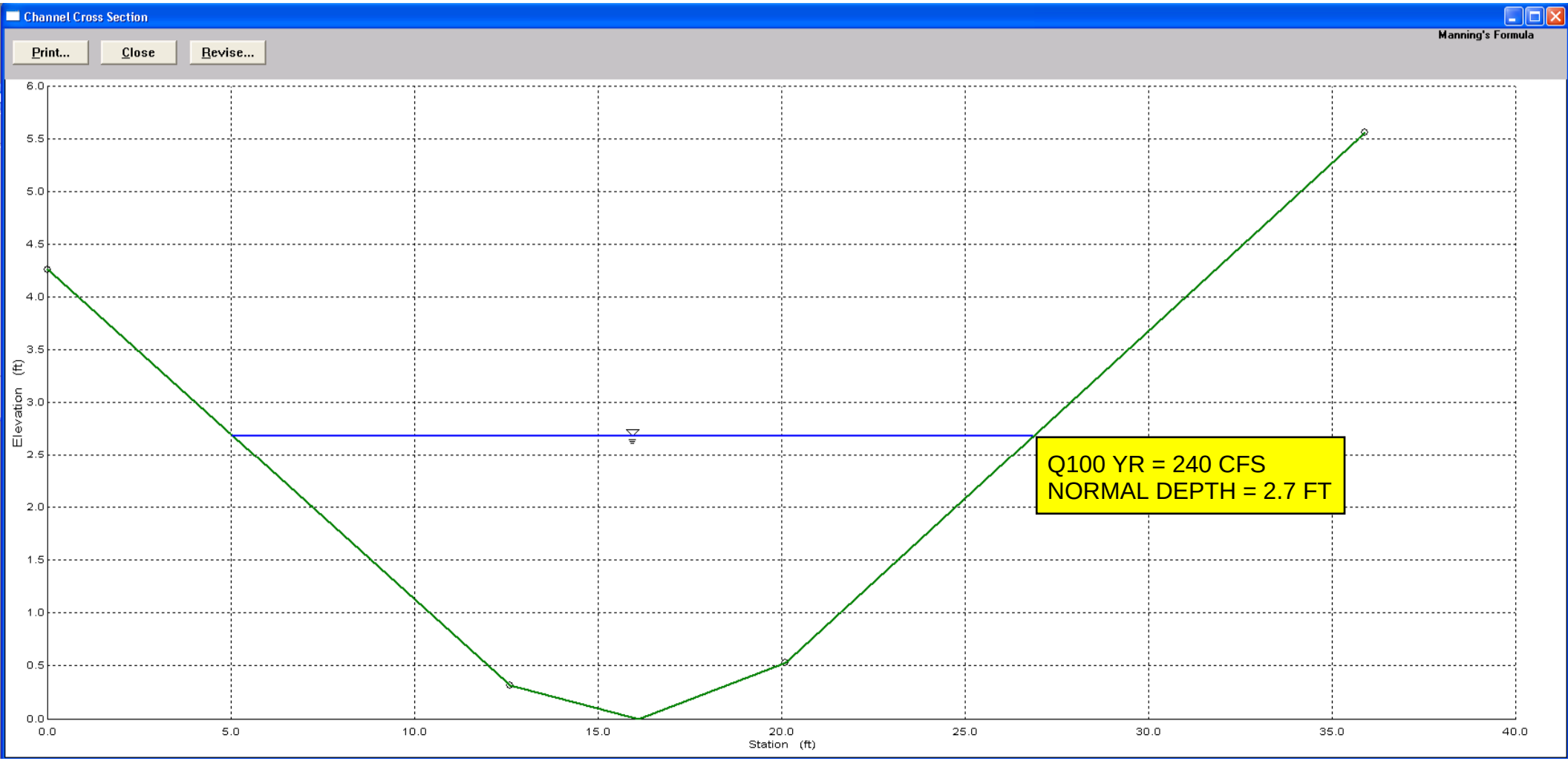
BLUE OAKS CHANNEL - UPSTREAM OF HP WAY CULVERT
NORMAL DEPTH CALCULATION



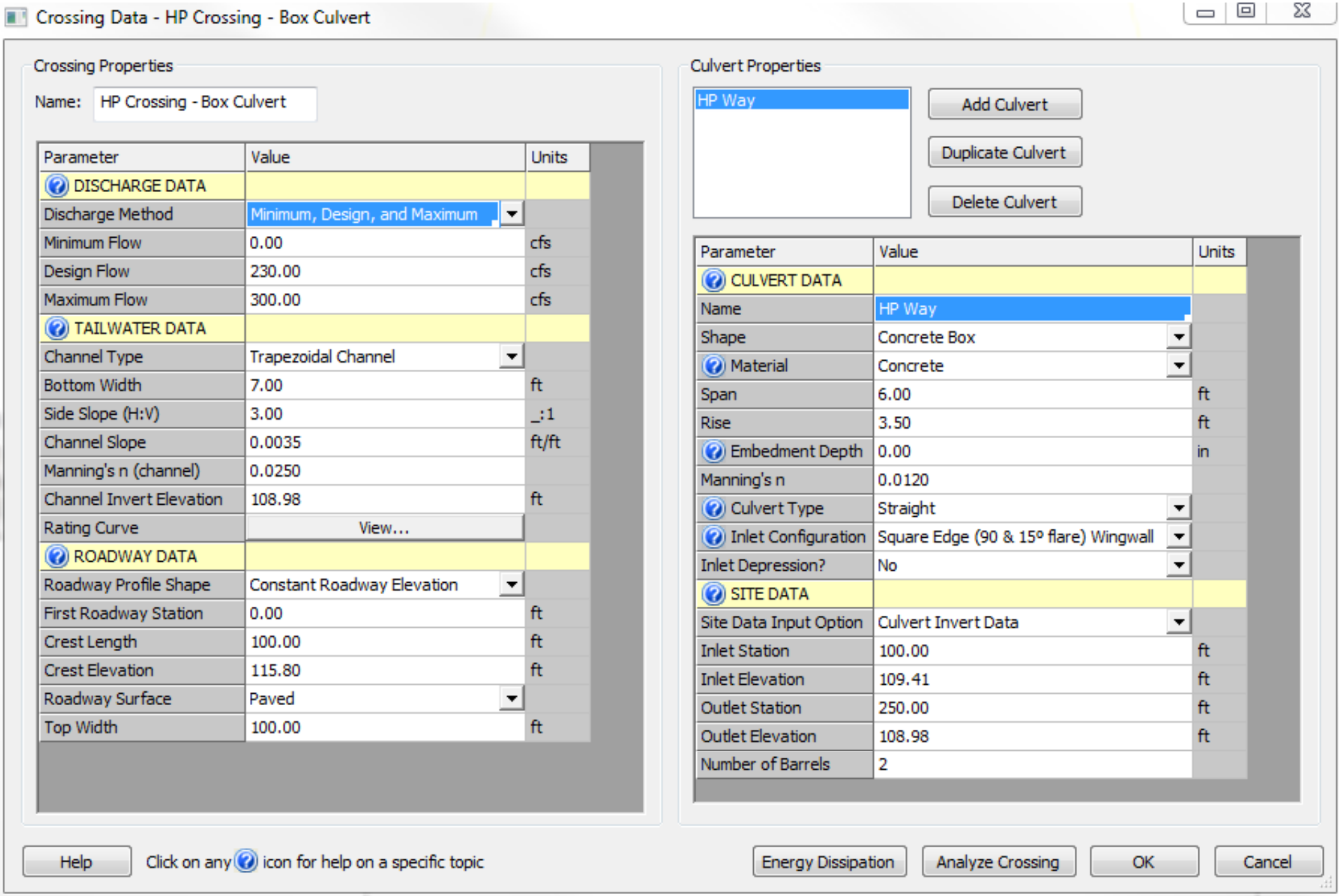
BLUE OAKS CHANNEL - UPSTREAM OF HP WAY CULVERT
NORMAL DEPTH CALCULATION



BLUE OAKS CHANNEL - DOWNSTREAM OF HP WAY CULVERT
NORMAL DEPTH CALCULATION

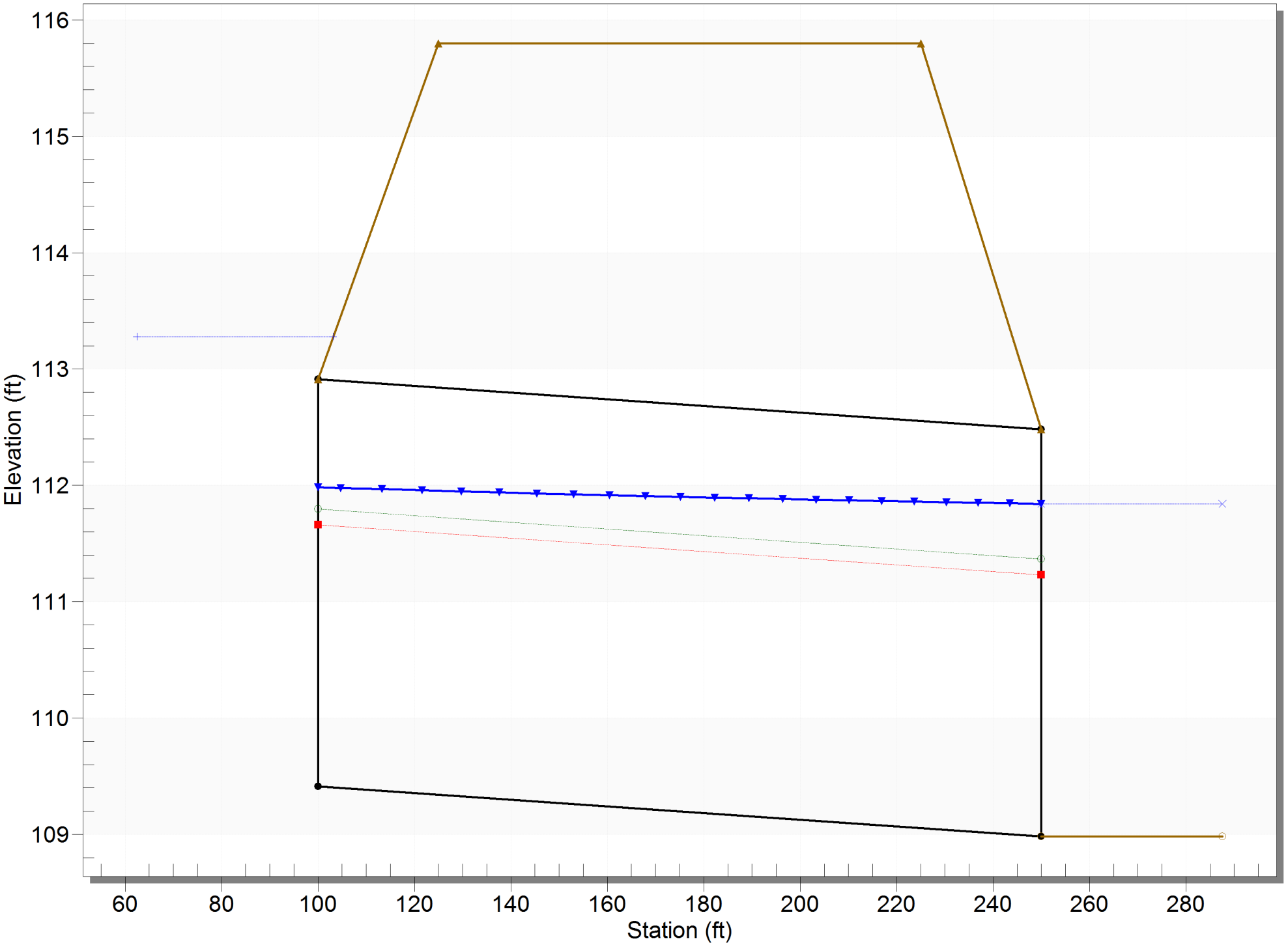


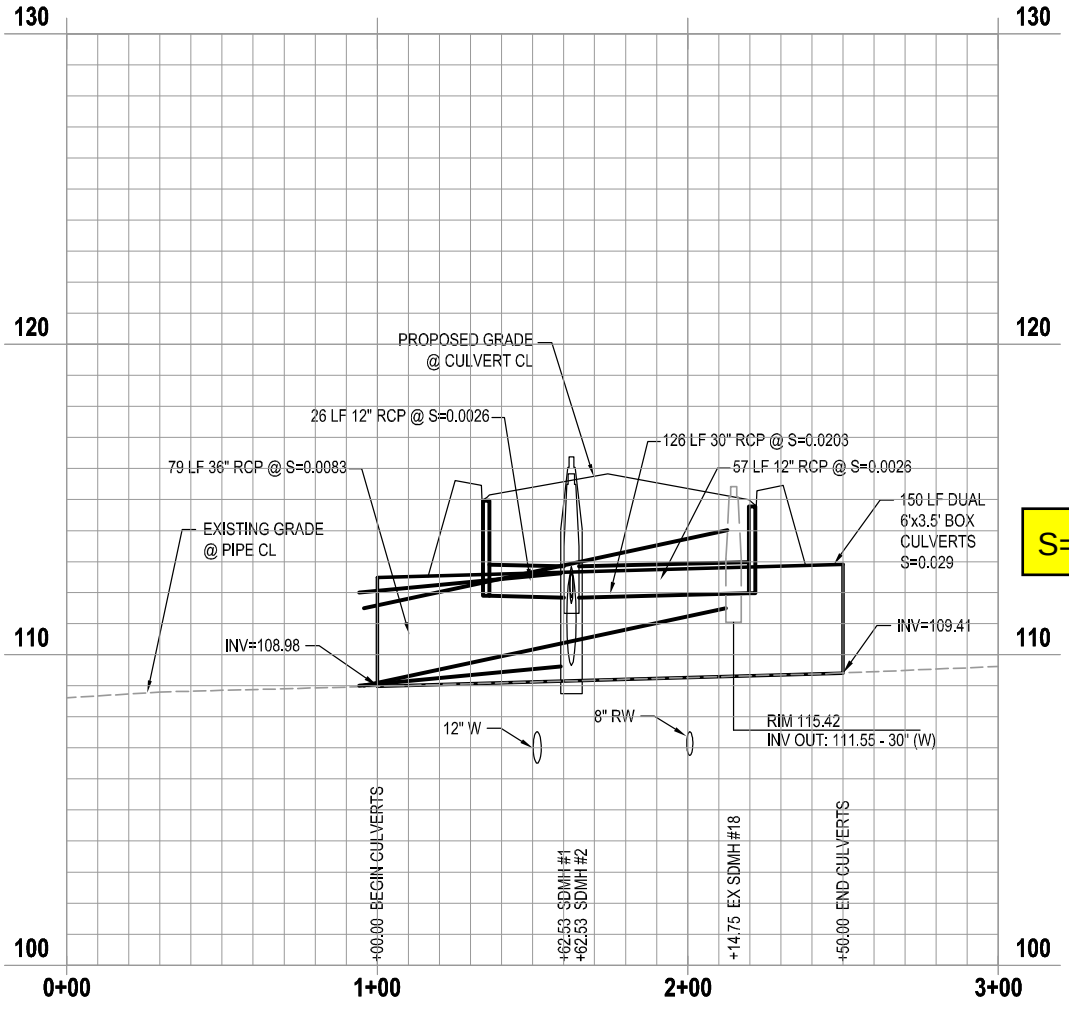
BLUE OAKS CHANNEL - DOWNSTREAM OF HP WAY CULVERT
NORMAL DEPTH CALCULATION


Crossing Data - HP Crossing - Box Culvert
Crossing Properties
Name: HP Crossing - Box Culvert
Parameter | Value | Units
DISCHARGE DATA
Discharge Method | Minimum, Design, and Maximum
Minimum Flow | 0.00 | cfs
Design Flow | 230.00 | cfs
Maximum Flow | 300.00 | cfs
TAILWATER DATA
Channel Type | Trapezoidal Channel
Bottom Width | 7.00 | ft
Side Slope (H:V) | 3.00 | _:1
Channel Slope | 0.0035 | ft/ft
Manning's n (channel) | 0.0250
Channel Invert Elevation | 108.98 | ft
Rating Curve | View...
ROADWAY DATA
Roadway Profile Shape | Constant Roadway Elevation
First Roadway Station | 0.00 | ft
Crest Length | 100.00 | ft
Crest Elevation | 115.80 | ft
Roadway Surface | Paved
Top Width | 100.00 | ft
Culvert Properties
HP Way
Add Culvert
Duplicate Culvert
Delete Culvert
Parameter | Value | Units
CULVERT DATA
Name | HP Way
Shape | Concrete Box
Material | Concrete
Span | 6.00 | ft
Rise | 3.50 | ft
Embedment Depth | 0.00 | in
Manning's n | 0.0120
Culvert Type | Straight
Inlet Configuration | Square Edge (90 & 15º flare) Wingwall
Inlet Depression? | No
SITE DATA
Site Data Input Option | Culvert Invert Data
Inlet Station | 100.00 | ft
Inlet Elevation | 109.41 | ft
Outlet Station | 250.00 | ft
Outlet Elevation | 108.98 | ft
Number of Barrels | 2
Help
Click on any icon for help on a specific topic
Energy Dissipation
Analyze Crossing
OK
Cancel

Crossing - HP Crossing - Box Culvert, Design Discharge - 230.0 cfs

Culvert - HP Way, Culvert Discharge - 230.0 cfs





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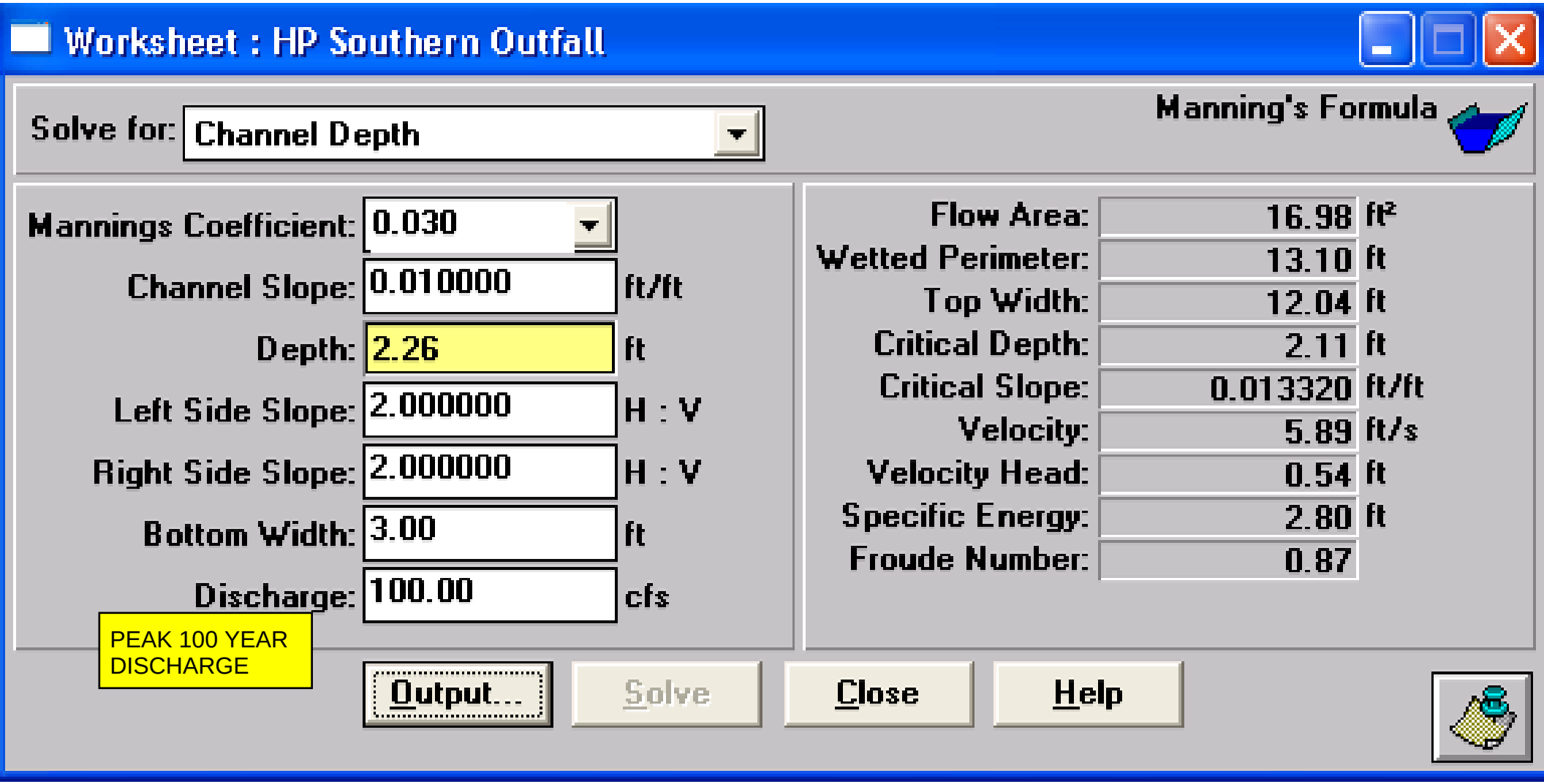
HP Way Box Culvert

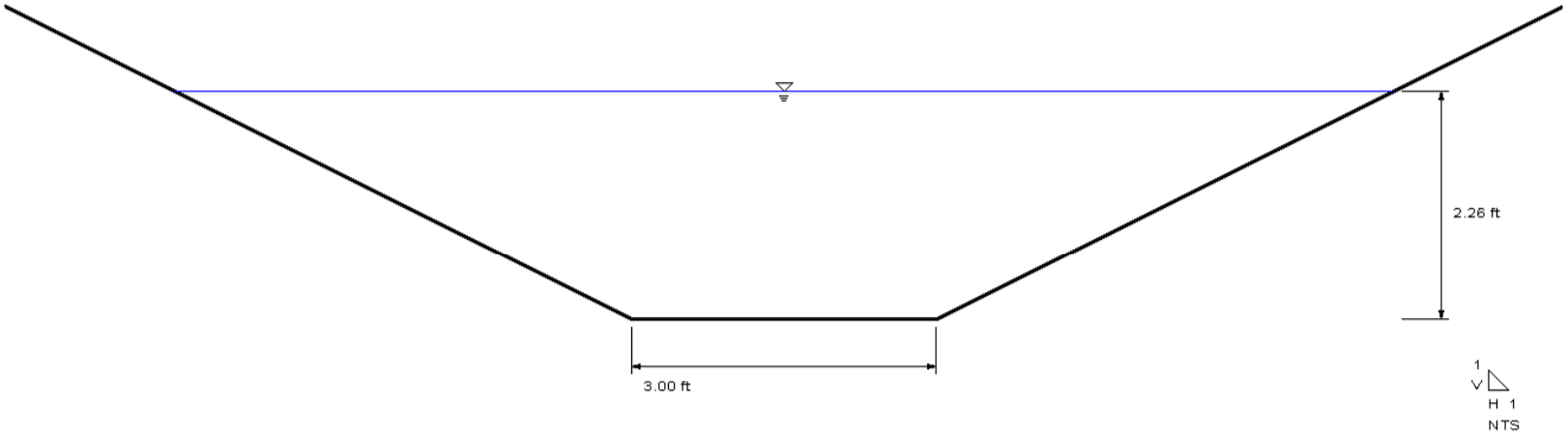


HP WAY SOUTHERN TEMPORARY OUTFALL
TRAPEZOIDAL ROCK LINED DITCH

Cross Section

Print... Close Revise...

Manning's Formula



HP WAY SOUTHERN TEMPORARY OUTFALL
TRAPEZOIDAL ROCK LINED DITCH

Appendix G

Southern Phases

HYDRAULIC MODEL RESULTS

FOR THE

10-, 25-, AND 100-YEAR STORM EVENTS

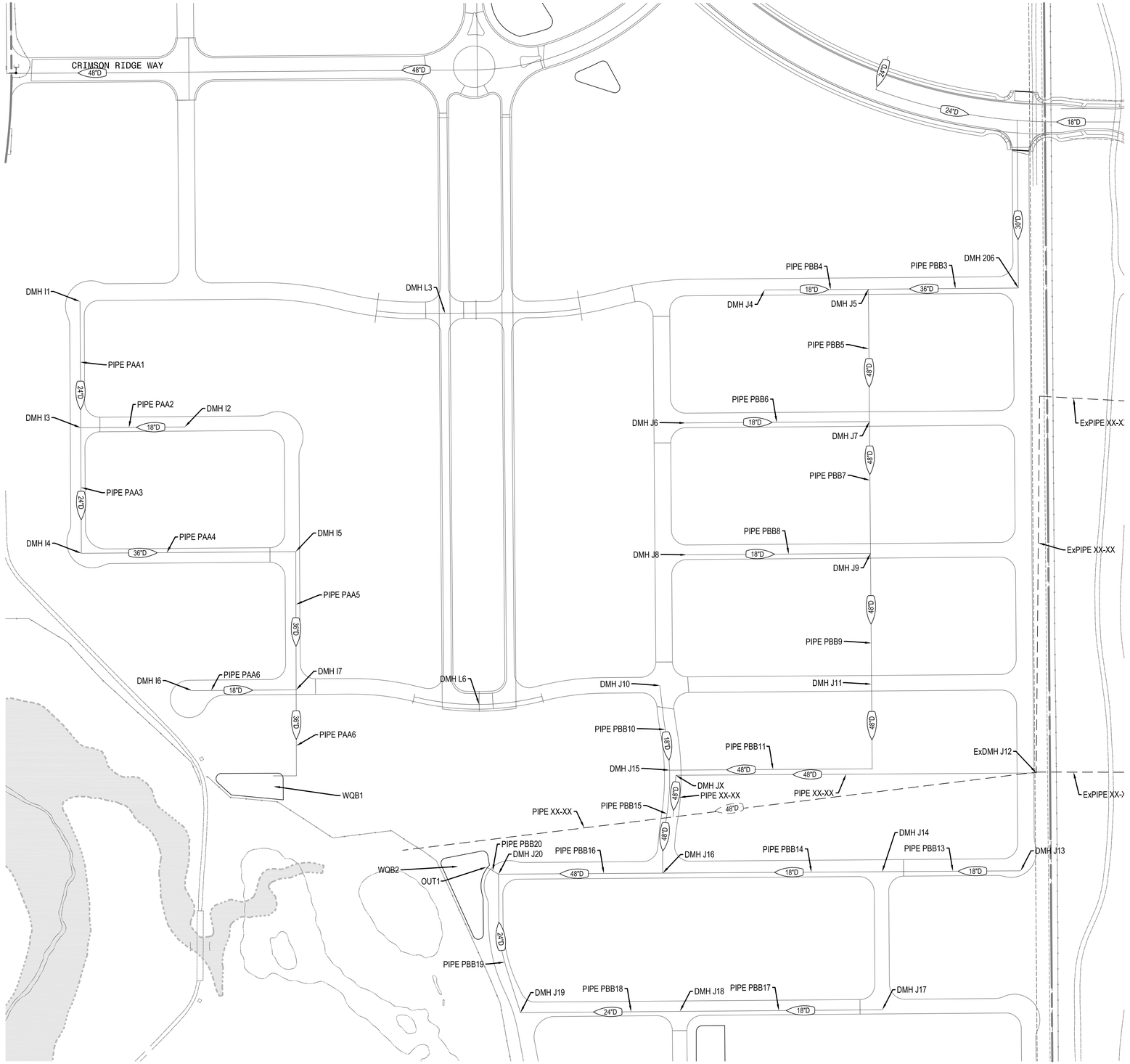
FUTURE SOUTH STORM DRAIN EXHIBIT

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA

DATE: 6.02.2015



GRAPHIC SCALE

100 50 0 100 200

1 in = 100 ft

MORTON & PITALO, INC.

CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING

LANDSCAPE ARCHITECTURE • TRAFFIC ENGINEERING

75 Iron Point Circle, Suite 120 • Folsom, CA 95630

phone: 916.984.7621 • fax: 916.984.9617 • survey fax: 916.563.6770

survey email: staking@mpengr.com • web: www.mpengr.com

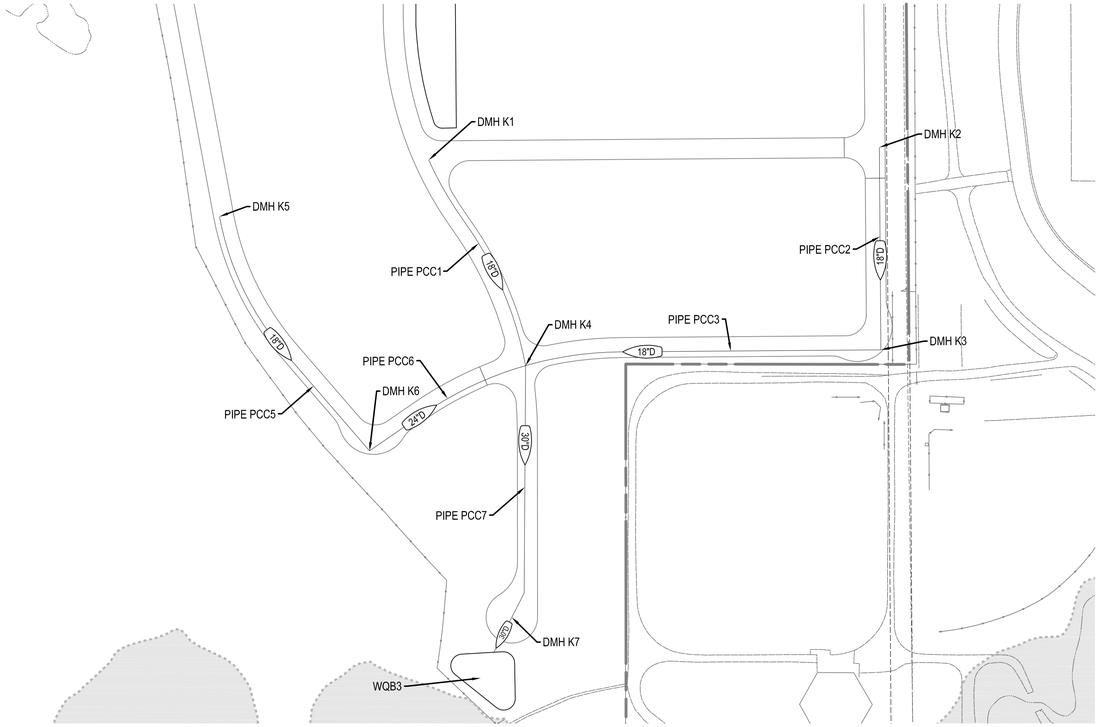
Dwg: X:\2013\13-0076-00\DWG\ENGR\DESIGN\DRAINAGE STUDY ATTACHMENTS\130076-APPX-FH2X-SDE.DWG | Saved: 06-02-15 02:17pm MHAUGE | Plotted: 06-03-15 03:33pm MHAUGE

FUTURE SOUTH
STORM DRAIN EXHIBIT

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA
DATE: 6.03.2015



GRAPHIC SCALE
100 50 0 100 200
1 in = 100 ft

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Future South

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 6/3/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

10 Year Design Storm

						Node Area													Pipe Data										HGL Data			
	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 10 Year (cfs/acre)	Fi	Pervious	Qp 10 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	10 Yr HGL Slope	U/S 10 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
Future-South 3	I1		I3		PAA1	4.17	4.2	I1	200.0	4.2	540.0	0.0100	20	15.00	15.00	1.50	0.08	30.0%	6.15	0.015	117.9	113.5725	113.21	24	0.0015	243	7.59	2.42	1.7	0.0010	116.81	HGL	-1.1
	I2		I3		PAA2	1.16	1.2	I2	160.0	1.2	275.0	0.0100	20	12.15	12.15	1.66	0.08	30.0%	1.91	0.015	117.7	113.61	113.21	18	0.0020	201	4.07	2.30	1.5	0.0004	116.58	HGL	-1.1
	I3		I4		PAA3	1.89	7.2	I3	160.0	1.9	200.0	0.0100	20	10.58	16.68	1.42	0.08	30.0%	10.09	0.015	117.6	113.208	112.85	24	0.0015	242	7.59	2.42	1.7	0.0027	116.49	HGL	-1.1
	I4		I5		PAA4	2.48	9.7	I4	150.0	2.5	275.0	0.0100	20	11.10	18.35	1.35	0.08	30.0%	12.91	0.015	116.9	112.845	112.43	36	0.0010	413	18.27	2.59	2.7	0.0005	115.85	Soffit	-1.1
	I5		I7		PAA5	2.12	11.8	I5	200.0	2.1	280.0	0.0100	20	12.71	21.01	1.26	0.08	30.0%	14.60	0.015	116.6	112.432	112.17	36	0.0010	266	18.27	2.59	1.7	0.0006	115.47	HGL	-1.1
	I6		I7		PAA6	1.36	1.4	I6	250.0	1.4	50.0	0.0100	20	10.87	10.87	1.76	0.08	30.0%	2.36	0.015	116.4	112.568	112.17	18	0.0020	201	4.07	2.30	1.5	0.0007	115.30	HGL	-1.1
	I7		OUT1		PAA7	1.06	14.2	I7	170.0	1.1	120.0	0.0100	20	9.99	22.72	1.18	0.08	30.0%	16.41	0.015	116.3	112.166	112.00	36	0.0010	166	18.27	2.59	1.1	0.0008	115.17	Soffit	-1.1
										0.0																			Starting HGL assumed top of Pipe		115.00	HGL	
	DMH 206		J5		PBB3	10.10	11.0	J3	50.0	10.1	260.0	0.0100	20		19.0	1.33	0.08	30.0%	14.31	0.015	122.7	114.80	114.51	36	0.0010	289	18.27	2.59	1.9	0.0006	119.74	HGL	-3.0
	J4		J5		PBB4	4.57	4.6	J4	200.0	4.6	350.0	0.0100	20	12.83	12.8	1.62	0.08	30.0%	7.29	0.015	123.7	114.91	114.51	18	0.0020	200	4.07	2.30	1.4	0.0064	120.85	HGL	-2.9
	J5		J7		PBB5	2.91	18.4	J5	200.0	2.9	350.0	0.0100	20	13.31	20.9	1.27	0.08	30.0%	22.90	0.015	122.4	114.51	114.26	36	0.0010	255	18.27	2.59	1.6	0.0016	119.56	HGL	-2.8
	J6		J7		PBB6	1.38	1.4	J6	150.0	1.4	200.0	0.0100	20	10.52	10.5	1.79	0.08	30.0%	2.43	0.015	122.4	114.96	114.26	18	0.0020	354	4.07	2.30	2.6	0.0007	119.42	HGL	-3.0
	J7		J9		PBB7	3.05	22.9	J7	150.0	3.1	300.0	0.0100	20	11.23	23.4	1.14	0.08	30.0%	25.63	0.015	122.2	114.26	114.00	48	0.0010	254	39.35	3.13	1.4	0.0004	119.16	HGL	-3.0
	J8		J9		PBB8	1.39	1.4	J8	150.0	1.4	200.0	0.0100	20	10.51	10.5	1.79	0.08	30.0%	2.46	0.015	122.1	114.71	114.00	18	0.0020	354	4.07	2.30	2.6	0.0007	119.31	HGL	-2.8
	J9		J11		PBB9	3.05	27.3	J9	150.0	3.1	300.0	0.0100	20	11.23	24.8	1.09	0.08	30.0%	29.12	0.015	121.8	114.00	113.75	48	0.0010	254	39.35	3.13	1.4	0.0005	119.06	HGL	-2.7
	J10		J15		PBB10	1.46	1.5	J10	150.0	1.5	200.0	0.0100	20	10.47	28.7	0.96	0.08	30.0%	1.37	0.015	121.4	113.26	112.56	18	0.0020	352	4.07	2.30	2.5	0.0002	119.00	HGL	-2.4
	J11		J15		PBB11	3.12	30.4	J11	150.0	3.1	300.0	0.0100	20	11.20	26.1	1.04	0.08	30.0%	30.95	0.015	121.4	113.75	113.20	48	0.0010	551	39.35	3.13	2.9	0.0006	118.92	HGL	-2.5
	J13		J14		PBB13	0.84	0.8	J13	50.0	0.8	300.0	0.0100	20	9.07	9.1	1.93	0.08	30.0%	1.61	0.015	120.2	113.74	113.20	18	0.0020	271	4.07	2.30	2.0	0.0003	118.66	HGL	-1.5
	J14		J16		PBB14	3.46	4.3	J14	250.0	3.5	300.0	0.0100	20	13.78	13.8	1.56	0.08	30.0%	6.62	0.015	120.1	113.20	112.36	18	0.0020	420	4.07	2.30	3.0	0.0053	118.58	HGL	-1.5
	J15		J16		PBB15	0.97	32.9	J15	200.0	1.0	150.0	0.0100	20	11.36	29.1	0.95	0.08	30.0%	30.40	0.015	118.3	112.56	112.36	48	0.0010	199	39.35	3.13	1.1	0.0006	116.56	Soffit	-1.7
	J16		J20		PBB16	1.19	38.3	J16	175.0	1.2	250.0	0.0100	20	12.15	30.1	0.92	0.08	30.0%	34.36	0.015	117.9	112.36	112.04	48	0.0010	316	39.35	3.13	1.7	0.0008	116.36	Soffit	-1.5
	J17		J18		PBB17	4.08	4.1	J17	200.0	4.1	350.0	0.0100	20	12.95	12.9	1.61	0.08	30.0%	6.47	0.015	120.8	114.68	113.87	18	0.0020	405	4.07	2.30	2.9	0.0051	119.73	HGL	-1.1
	J18		J19		PBB18	2.51	6.6	J18	200.0	2.5	200.0	0.0100	20	11.49	15.9	1.46	0.08	30.0%	9.43	0.015	118.7	113.87	112.86	24	0.0030	338	10.73	3.42	1.6	0.0023	117.68	HGL	-1.0
	J19		J20		PBB19	1.49	8.1	J19	200.0	1.5	150.0	0.0100	20	11.10	17.5	1.39	0.08	30.0%	10.99	0.015	118	112.86	112.04	24	0.0030	272	10.73	3.42	1.3	0.0031	116.90	HGL	-1.1
	J20		OUT2A		PBB20	0.36	46.8	J20	75.0	0.4	175.0	0.0100	20	8.67	31.8	0.88	0.08	30.0%	39.93	0.015	117.1	112.04	112.00	48	0.0010	40	39.35	3.13	0.2	0.0010	116.04	HGL	-1.1
										0.0																			Starting HGL assumed top of Pipe		116.00	HGL	
Future-South 1	J12		DMH ZZ		PBB12	73.88	73.9	J12, HP1, HP2						19.77	19.8	1.30	0.08	30.0%	94.61	0.015	123.4	111.27	108.48	48	0.0036	774	74.67	5.94	2.2	0.0058	117.63	HGL	-5.8
	DMH ZZ		OUT2B		PBB12B	0.00	73.9								21.9	1.25	0.08	30.0%	90.58	0.015	118.3	108.48	106.38	48	0.0040	524	78.71	6.26	1.4	0.0053	113.16	HGL	-5.1
																													Starting HGL assumed top of Pipe		110.38	Soffit	
Future-South 2	K1		K4		PCC1	2.99	3.0	K1	200.0	3.0	300.0	0.0100	20	12.65	12.6	1.63	0.08	30.0%	4.80	0.015	122.9	116.52	114.91	18	0.0050	321	6.44	3.64	1.5	0.0028	121.21	HGL	-1.7
	K2		K3		PCC2	2.34	2.3	K2	150.0	2.3	150.0	0.0100	20	9.46	14.1	1.54	0.08	30.0%	3.56	0.015	132	118.82	117.40	18	0.0050	283	6.44	3.64	1.3	0.0015	120.32	Soffit	-11.7
	K3		K4		PCC3	1.42	3.8	K3	200.0	1.4	350.0	0.0100	20	14.19	15.4	1.48	0.08	30.0%	5.47	0.015	132	117.40	114.91	18	0.0050	498	6.44	3.64	2.3	0.0036	119.21	HGL	-12.8
	K5		K6		PCC5	2.18	2.2	K5	150.0	2.2	200.0	0.0100	20	10.18	10.2	1.82	0.08	30.0%	3.91	0.015	120.4	117.81	116.04	18	0.0045	395	6.10	3.45	1.9	0.0018	119.31	Soffit	-1.1
	K6		K4		PCC6	1.21	3.4	K6	150.0	1.2	250.0	0.0100	20	11.41	12.1	1.67	0.08	30.0%	5.58	0.015	119.1	116.04	114.91	24	0.0045	250	13.15	4.19	1.0	0.0008	118.04	Soffit	-1.1
	K4		K7		PCC7	2.13	12.3	K4	200.0	2.1	350.0	0.0100	20	13.67	17.7	1.38	0.08	30.0%	16.64	0.015	119.7	114.91	113.79	30	0.0035	319	21.02	4.28	1.2	0.0022	117.41	Soffit	-2.3
	K7		OUT3		PCC8	1.75	14.0	K7	150.0	1.8	250.0	0.0100	20	11.06	11.1	1.74	0.08	30.0%	24.13	0.015	117.8	113.79	113.50	30	0.0035	84	21.02	4.28	0.3	0.0046	116.68	HGL	-1.1
										0.0																			Starting HGL assumed top of Pipe		116.29	HGL	
Future South	H0		H3		PDD1	4.54	4.5	H0	250.0	4.5	400.0	0.0100	20	14.68	14.7	1.51	0.08	30.0%	6.76	0.015	131	122.25	113.73	18	0.0150	568	11.15	6.31	1.5	0.0055	123.75	Soffit	-7.3
	H1		H2		PDD2	3.35	3.3	H1	225.0	3.3	350.0	0.0100	20	13.80	13.8	1.56	0.08	30.0%	5.14	0.015	121	116.95	114.85	18	0.0050	420	6.44	3.64	1.9	0.0032	118.46	HGL	-2.5
	H2		H3		PDD3	2.38	5.7	H2	225.0	2.4	350.0	0.0100	20	14.19	15.7	1.46	0.08	30.0%	8.24	0.015	118.2	114.85	113.73	24	0.0050	224	13.86	4.41	0.8	0.0018	117.12	HGL	-1.1
	H3		H6		PDD4	0.95	12.0	H3	50.0	0.9	300.0	0.0100	20	8.93	16.6	1.42	0.08	30.0%	16.77	0.015	125	113.73	110.65	36	0.0125	246	64.61	9.14	0.4	0.0008	116.73	Soffit	-8.3
	H4		H3		PDD5	0.76	0.8	H4	50.0	0.8	150.0	0.0100	20	6.53	6.5	2.27	0.08	30.0%	1.70	0.015	117.8	113.95	113.73	18	0.0050	45	6.44	3.64	0.2	0.0003	116.74	HGL	-1.1
	H5		H6		PDD6	2.94	2.9	H5	200.0	2.9	300.0	0.0100	20	12.66	12.7	1.63	0.08	30.0%	4.73	0.015	116.5	110.88	110.65	24	0.0050	45	13.86	4.41	0.2	0.0006	114.68	HGL	-1.8
	H6		H9		PDD7	0.42	15.3	H6	50.0	0.4	200.0	0.0100	20	8.00	17.0	1.41	0.08	30.0%	21.19	0.015	116.5	110.65	109.10	48	0.0050	310	88.00	7.00	0.7	0.0003	114.65	Soffit	-1.9
	H7		H9		PDD8	3.33	3.3	H7	200.0	3.3	350.0	0.0100	20	13.16	13.2	1.60	0.08	30.0%	5.25	0.015	116.5	109.33	109.10	18	0.0050	45	6.44	3.64	0.2	0.0033	113.25	HGL	-3.3
	H8		H9		PDD9	0.70	0.7	H8	100.0	0.7	100.0	0.0100	20	7.66	7.7	2.10	0.08	30.0%	1.45	0.015	116.5	109.33	109.10	18	0.0050	45	6.44	3.64	0.2	0.0003	113.11	HGL	-3.4
	H9		H16		PDD10	0.55	19.9	H9	50.0	0.5	300.0	0.0100	20	9.67	17.8	1.38	0.08	30.0%	26.93	0.015	117.5	109.10	107.60	48	0.0050	300	88.00	7.00	0.7	0.0005	113.10	Soffit	-4.4
	H10		H12		PDD11	3.19	3.2	H10	150.0	3.2	250.0	0.0100	20	10.56	10.6	1.78	0.08	30.0%	5.62	0.015	119.5	116.40	114.35	24	0.0050	410	13.86	4.41	1.5	0.0008	118.40	Soffit	-1.1
	H11		H12		PDD12	3.73	3.7	H11	150.0	3.7	350.0	0.0100	20	11.64	11.6	1.70	0.08	30.0%	6.25	0.015	119.5	115.35	114.35	24	0.0050	200	13.86	4.41	0.8	0.0010	117.55	HGL	-2.0
	H12		H13		PDD13	3.14	10.1	H12	200.0	3.1	300.0	0.0100	20	12.60	12.6	1.63	0.08	30.0%	16.20	0.015	118.5	114.35	113.06	36	0.0050	257	40.86	5.78	0.7	0.0008	117.35	Soffit	-1.2
	L1		L3		PLL1	1.44	1.4	L1	150.0	1.4	400.0	0.0100	20	13.53	13.5	1.58	0.08	30.0%	2.24	0.015	133.6	130.50	130.25	24	0.0025	100	9.80	3.12	0.5	0.0001	132.50	Soffit	-1.1
	L2		L3		PLL2	2.56	2.6	L2	250.0	2.6	400.0	0.0100	20	15.00	15.0	1.50	0.08	30.0%	3.77	0.015	133.6	130.50	130.25	24	0.0025	100	9.80	3.12	0.5	0.0004	132.50	Soffit	-1.1
	L3		L4		PLL3	1.09	5.1	L3	50.0	1.1	400.0	0.0100	20	10.38	15.5	1.47	0.08	30.0%	7.37	0.015	133.4	130.25	130.00	24	0.0050	50	13.86	4.41	0.2	0.0014	132.25	Soffit	-1.2
																													Starting HGL assumed top of Pipe		132.00	Soffit	
Future South	L4		L6		PLL4	2.99	3.0	L4	175.0	3.0	750.0	0.0100	20	15.00	15.0	1.50	0.08	30.0%	4.40	0.015	117.8	114.50	114.25	24	0.0025	100	9.80	3.12	0.5	0.0005	116.66	HGL	-1.1
	L5		L6		PLL5	4.74	4.7	L5	250.0	4.7	750.0	0.0100	20	15.00	15.0	1.50	0.08	30.0%	6.99	0.015	117.9	114.50	114.25	24	0.0025	100	9.80	3.12	0.5	0.0013	116.73	HGL	-1.2
	L6		OUT5		PLL6	2.09	14.9	L6	50.0	2.1	750.0	0.0100	20	14.27	15.5	1.47	0.08	30.0%	21.59	0.015	117.8	114.25	114.00	24	0.0050	50	13.86	4.41	0.2	0.0121	116.61	HGL	-1.2
																													Starting HGL assumed top of Pipe		116.00	Soffit	

Future South

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 6/3/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

25 Year Design Storm

	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Ac	Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 25 Year (cfs/acre)	Fi	Pervious	Qp 25 Year (cfs)	n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	25 Yr HGL Slope	U/S 25 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
						Node Area														Pipe Data										HGL Data			
Future-South 3	I1		I3		PAA1	4.17	4.2	I1	200.0	4.2	540.0	0.0100	20	15.00	15.00	1.95	0.08	30.0%	8.02	0.015	117.9	113.5725	113.21	24	0.0015	243	7.59	2.42	1.7	0.0017	117.75	HGL	-0.1
	I2		I3		PAA2	1.16	1.2	I2	160.0	1.2	275.0	0.0100	20	12.15	12.15	2.16	0.08	30.0%	2.49	0.015	117.7	113.61	113.21	18	0.0020	201	4.07	2.30	1.5	0.0007	117.34	HGL	-0.4
	I3		I4		PAA3	1.89	7.2	I3	160.0	1.9	200.0	0.0100	20	10.58	16.68	1.85	0.08	30.0%	13.17	0.015	117.6	113.208	112.85	24	0.0015	242	7.59	2.42	1.7	0.0045	117.19	HGL	-0.4
	I4		I5		PAA4	2.48	9.7	I4	150.0	2.5	275.0	0.0100	20	11.10	18.35	1.76	0.08	30.0%	16.86	0.015	116.9	112.845	112.43	36	0.0010	413	18.27	2.59	2.7	0.0009	116.10	HGL	-0.8
	I5		I7		PAA5	2.12	11.8	I5	200.0	2.1	280.0	0.0100	20	12.71	21.01	1.64	0.08	30.0%	19.06	0.015	116.6	112.432	112.17	36	0.0010	266	18.27	2.59	1.7	0.0011	115.75	HGL	-0.9
	I6		I7		PAA6	1.36	1.4	I6	250.0	1.4	50.0	0.0100	20	10.87	10.87	2.29	0.08	30.0%	3.08	0.015	116.4	112.568	112.17	18	0.0020	201	4.07	2.30	1.5	0.0011	115.46	HGL	-0.9
	I7		OUT1		PAA7	1.06	14.2	I7	170.0	1.1	120.0	0.0100	20	9.99	22.72	1.53	0.08	30.0%	21.43	0.015	116.3	112.166	112.00	36	0.0010	166	18.27	2.59	1.1	0.0014	115.23	HGL	-1.1
																													Starting HGL assumed top of Pipe	115.00	HGL	
	DMH 206		J5		PBB3	10.10	11.0	J3	50.0	10.1	260.0	0.0100	20		19.0	1.73	0.08	30.0%	18.68	0.015	122.7	114.80	114.51	36	0.0010	289	18.27	2.59	1.9	0.0010	~~122.45~~	HGL	-0.5
	J4		J5		PBB4	4.57	4.6	J4	200.0	4.6	350.0	0.0100	20	12.83	12.8	2.10	0.08	30.0%	9.51	0.015	123.7	114.91	114.51	18	0.0020	200	4.07	2.30	1.4	0.0109	~~124.14~~	HGL	STREET FLOW
	J5		J7		PBB5	2.91	18.4	J5	200.0	2.9	350.0	0.0100	20	13.31	20.9	1.65	0.08	30.0%	29.90	0.015	122.4	114.51	114.26	36	0.0010	255	18.27	2.59	1.6	0.0027	~~121.95~~	HGL	-0.5
	J6		J7		PBB6	1.38	1.4	J6	150.0	1.4	200.0	0.0100	20	10.52	10.5	2.32	0.08	30.0%	3.17	0.015	122.4	114.96	114.26	18	0.0020	354	4.07	2.30	2.6	0.0012	~~121.69~~	HGL	-0.7
	J7		J9		PBB7	3.05	22.9	J7	150.0	3.1	300.0	0.0100	20	11.23	23.4	1.49	0.08	30.0%	33.48	0.015	122.2	114.26	114.00	48	0.0010	254	39.35	3.13	1.4	0.0007	121.26	HGL	-0.9
	J8		J9		PBB8	1.39	1.4	J8	150.0	1.4	200.0	0.0100	20	10.51	10.5	2.33	0.08	30.0%	3.20	0.015	122.1	114.71	114.00	18	0.0020	354	4.07	2.30	2.6	0.0012	~~121.52~~	HGL	-0.6
	J9		J11		PBB9	3.05	27.3	J9	150.0	3.1	300.0	0.0100	20	11.23	24.8	1.42	0.08	30.0%	38.06	0.015	121.8	114.00	113.75	48	0.0010	254	39.35	3.13	1.4	0.0009	121.08	HGL	-0.7
	J10		J15		PBB10	1.46	1.5	J10	150.0	1.5	200.0	0.0100	20	10.47	28.7	1.25	0.08	30.0%	1.79	0.015	121.4	113.26	112.56	18	0.0020	352	4.07	2.30	2.5	0.0004	~~120.98~~	HGL	-0.4
	J11		J15		PBB11	3.12	30.4	J11	150.0	3.1	300.0	0.0100	20	11.20	26.1	1.35	0.08	30.0%	40.46	0.015	121.4	113.75	113.20	48	0.0010	551	39.35	3.13	2.9	0.0011	120.84	HGL	-0.6
	J13		J14		PBB13	0.84	0.8	J13	50.0	0.8	300.0	0.0100	20	9.07	9.1	2.50	0.08	30.0%	2.09	0.015	120.2	113.74	113.20	18	0.0020	271	4.07	2.30	2.0	0.0005	~~120.40~~	HGL	STREET FLOW
	J14		J16		PBB14	3.46	4.3	J14	250.0	3.5	300.0	0.0100	20	13.78	13.8	2.03	0.08	30.0%	8.63	0.015	120.1	113.20	112.36	18	0.0020	420	4.07	2.30	3.0	0.0090	~~120.28~~	HGL	STREET FLOW
	J15		J16		PBB15	0.97	32.9	J15	200.0	1.0	150.0	0.0100	20	11.36	29.1	1.23	0.08	30.0%	39.76	0.015	118.3	112.56	112.36	48	0.0010	199	39.35	3.13	1.1	0.0010	116.69	HGL	-1.6
	J16		J20		PBB16	1.19	38.3	J16	175.0	1.2	250.0	0.0100	20	12.15	30.1	1.20	0.08	30.0%	44.95	0.015	117.9	112.36	112.04	48	0.0010	316	39.35	3.13	1.7	0.0013	116.48	HGL	-1.4
	J17		J18		PBB17	4.08	4.1	J17	200.0	4.1	350.0	0.0100	20	12.95	12.9	2.10	0.08	30.0%	8.45	0.015	120.8	114.68	113.87	18	0.0020	405	4.07	2.30	2.9	0.0086	~~120.34~~	HGL	STREET FLOW
	J18		J19		PBB18	2.51	6.6	J18	200.0	2.5	200.0	0.0100	20	11.49	15.9	1.89	0.08	30.0%	12.30	0.015	118.7	113.87	112.86	24	0.0030	338	10.73	3.42	1.6	0.0039	~~120.06~~	HGL	STREET FLOW
	J19		J20		PBB19	1.49	8.1	J19	200.0	1.5	150.0	0.0100	20	11.10	17.5	1.80	0.08	30.0%	14.34	0.015	118	112.86	112.04	24	0.0030	272	10.73	3.42	1.3	0.0054	117.53	HGL	-0.5
	J20		OUT2A		PBB20	0.36	46.8	J20	75.0	0.4	175.0	0.0100	20	8.67	31.8	1.14	0.08	30.0%	52.25	0.015	117.1	112.04	112.00	48	0.0010	40	39.35	3.13	0.2	0.0018	116.07	HGL	-1.0
																													Starting HGL assumed top of Pipe	116.00	HGL	
Future-South 1	J12		DMH ZZ		PBB12	73.88	73.9	J12, HP1, HP2						19.77	19.8	1.70	0.08	30.0%	123.53	0.015	123.4	111.27	108.48	48	0.0036	774	74.67	5.94	2.2	0.0099	120.78	HGL	-2.6
	DMH ZZ		OUT2B		PBB12B	0.00	73.9								21.9	1.25	0.08	30.0%	90.58	0.015	118.3	108.48	106.38	48	0.0040	524	78.71	6.26	1.4	0.0053	113.16	HGL	-5.1
																													Starting HGL assumed top of Pipe	110.38	Soffit	
Future South 2	K1		K4		PCC1	2.99	3.0	K1	200.0	3.0	300.0	0.0100	20	12.65	12.6	2.12	0.08	30.0%	6.26	0.015	122.9	116.52	114.91	18	0.0050	321	6.44	3.64	1.5	0.0047	~~120.46~~	HGL	STREET FLOW
	K2		K3		PCC2	2.34	2.3	K2	150.0	2.3	150.0	0.0100	20	9.46	14.1	2.01	0.08	30.0%	4.65	0.015	132	118.82	117.40	18	0.0050	283	6.44	3.64	1.3	0.0026	121.94	HGL	-10.1
	K3		K4		PCC3	1.42	3.8	K3	200.0	1.4	350.0	0.0100	20	14.19	15.4	1.92	0.08	30.0%	7.14	0.015	132	117.40	114.91	18	0.0050	498	6.44	3.64	2.3	0.0062	121.21	HGL	-10.8
	K5		K6		PCC5	2.18	2.2	K5	150.0	2.2	200.0	0.0100	20	10.18	10.2	2.36	0.08	30.0%	5.10	0.015	120.4	117.81	116.04	18	0.0045	395	6.10	3.45	1.9	0.0031	119.73	HGL	-0.7
	K6		K4		PCC6	1.21	3.4	K6	150.0	1.2	250.0	0.0100	20	11.41	12.1	2.17	0.08	30.0%	7.28	0.015	119.1	116.04	114.91	24	0.0045	250	13.15	4.19	1.0	0.0014	118.49	HGL	-0.6
	K4		K7		PCC7	2.13	12.3	K4	200.0	2.1	350.0	0.0100	20	13.67	17.7	1.79	0.08	30.0%	21.72	0.015	119.7	114.91	113.79	30	0.0035	319	21.02	4.28	1.2	0.0037	118.14	HGL	-1.6
	K7		OUT3		PCC8	1.75	14.0	K7	150.0	1.8	250.0	0.0100	20	11.06	11.1	2.27	0.08	30.0%	31.47	0.015	117.8	113.79	113.50	30	0.0035	84	21.02	4.28	0.3	0.0078	116.95	HGL	-0.8
																													Starting HGL assumed top of Pipe	116.29	HGL	
Future South	H0		H3		PDD1	4.54	4.5	H0	250.0	4.5	400.0	0.0100	20	14.68	14.7	1.97	0.08	30.0%	8.83	0.015	131	122.25	113.73	18	0.0150	568	11.15	6.31	1.5	0.0094	123.75	Soffit	-7.3
	H1		H2		PDD2	3.35	3.3	H1	225.0	3.3	350.0	0.0100	20	13.80	13.8	2.03	0.08	30.0%	6.71	0.015	121	116.95	114.85	18	0.0050	420	6.44	3.64	1.9	0.0054	119.68	HGL	-1.3
	H2		H3		PDD3	2.38	5.7	H2	225.0	2.4	350.0	0.0100	20	14.19	15.7	1.90	0.08	30.0%	10.76	0.015	118.2	114.85	113.73	24	0.0050	224	13.86	4.41	0.8	0.0030	117.40	HGL	-0.8
	H3		H6		PDD4	0.95	12.0	H3	50.0	0.9	300.0	0.0100	20	8.93	16.6	1.85	0.08	30.0%	21.89	0.015	125	113.73	110.65	36	0.0125	246	64.61	9.14	0.4	0.0014	116.73	Soffit	-8.3
	H4		H3		PDD5	0.76	0.8	H4	50.0	0.8	150.0	0.0100	20	6.53	6.5	2.95	0.08	30.0%	2.22	0.015	117.8	113.95	113.73	18	0.0050	45	6.44	3.64	0.2	0.0006	116.75	HGL	-1.0
	H5		H6		PDD6	2.94	2.9	H5	200.0	2.9	300.0	0.0100	20	12.66	12.7	2.12	0.08	30.0%	6.17	0.015	116.5	110.88	110.65	24	0.0050	45	13.86	4.41	0.2	0.0010	114.69	HGL	-1.8
	H6		H9		PDD7	0.42	15.3	H6	50.0	0.4	200.0	0.0100	20	8.00	17.0	1.83	0.08	30.0%	27.66	0.015	116.5	110.65	109.10	48	0.0050	310	88.00	7.00	0.7	0.0005	114.65	Soffit	-1.9
	H7		H9		PDD8	3.33	3.3	H7	200.0	3.3	350.0	0.0100	20	13.16	13.2	2.08	0.08	30.0%	6.84	0.015	116.5	109.33	109.10	18	0.0050	45	6.44	3.64	0.2	0.0057	113.35	HGL	-3.1
	H8		H9		PDD9	0.70	0.7	H8	100.0	0.7	100.0	0.0100	20	7.66	7.7	2.73	0.08	30.0%	1.89	0.015	116.5	109.33	109.10	18	0.0050	45	6.44	3.64	0.2	0.0004	113.12	HGL	-3.4
	H9		H16		PDD10	0.55	19.9	H9	50.0	0.5	300.0	0.0100	20	9.67	17.8	1.79	0.08	30.0%	35.15	0.015	117.5	109.10	107.60	48	0.0050	300	88.00	7.00	0.7	0.0008	113.10	Soffit	-4.4
	H10		H12		PDD11	3.19	3.2	H10	150.0	3.2	250.0	0.0100	20	10.56	10.6	2.32	0.08	30.0%	7.33	0.015	119.5	116.40	114.35	24	0.0050	410	13.86	4.41	1.5	0.0014	118.40	Soffit	-1.1
	H11		H12		PDD12	3.73	3.7	H11	150.0	3.7	350.0	0.0100	20	11.64	11.6	2.21	0.08	30.0%	8.16	0.015	119.5	115.35	114.35	24	0.0050	200	13.86	4.41	0.8	0.0017	117.69	HGL	-1.8
	H12		H13		PDD13	3.14	10.1	H12	200.0	3.1	300.0	0.0100	20	12.60	12.6	2.12	0.08	30.0%	21.13	0.015	118.5	114.35	113.06	36	0.0050	257	40.86	5.78	0.7	0.0013	117.35	Soffit	-1.2
	L1		L3		PLL1	1.44	1.4	L1	150.0	1.4	400.0	0.0100	20	13.53	13.5	2.05	0.08	30.0%	2.92	0.015	133.6	130.50	130.25	24	0.0025	100	9.80	3.12	0.5	0.0002	132.50	Soffit	-1.1
	L2		L3		PLL2	2.56	2.6	L2	250.0	2.6	400.0	0.0100	20	15.00	15.0	1.95	0.08	30.0%	4.92	0.015	133.6	130.50	130.25	24	0.0025	100	9.80	3.12	0.5	0.0006	132.50	Soffit	-1.1
	L3		L4		PLL3	1.09	5.1	L3	50.0	1.1	400.0	0.0100	20	10.38	15.5	1.91	0.08	30.0%	9.62	0.015	133.4	130.25	130.00	24	0.0050	50	13.86	4.41	0.2	0.0024	132.25	Soffit	-1.2
																													Starting HGL assumed top of Pipe	132.00	Soffit	
Future South	L4		L6		PLL4	2.99	3.0	L4	175.0	3.0	750.0	0.0100	20	15.00	15.0	1.95	0.08	30.0%	5.74	0.015	117.8	114.50	114.25	24	0.0025	100	9.80	3.12	0.5	0.0009	117.12	HGL	-0.7
	L5		L6		PLL5	4.74	4.7	L5	250.0	4.7	750.0	0.0100	20	15.00	15.0	1.95	0.08	30.0%	9.12	0.015	117.9	114.50	114.25	24	0.0025	100	9.80	3.12	0.5	0.0022	117.25	HGL	-0.7
	L6		OUT5		PLL6	2.09	14.9	L6	50.0	2.1	750.0	0.0100	20	14.27	15.5	1.91	0.08	30.0%	28.17	0.015	117.8	114.25	114.00	24	0.0050	50	13.86	4.41	0.2	0.0207	117.03	HGL	-0.8
																													Starting HGL assumed top of Pipe	116.00	Soffit	

Future South

Morton & Pitalo, Inc

by: MH
Job No. 13-0078-00
Date: 6/3/2015
Revised:

Table 10-4 Coefficient for Unit Peak Discharge

	Tr < 20 minutes		Tr > 20 minutes	
Return Period	Co	C1	Co	C1
10	5.8	-0.5	17.8	-0.87
25	7.54	-0.5	23.14	-0.87
100	9.28	-0.5	28.48	-0.87

100 Year Design Storm

	From (Upper)	From (Upper Sta)	To (Lower)	To (Lower Sta)	Pipe Name	Node Area: Node Ac	Node Area: Cum. Ac.	Inlet Watershed Node Location	L (Yard)	A (Collector)	L (Collector)	S (Collector)	Z	RUN (min)	Cum. Tr (min)	qu 100 Year (cfs/acre)	Fi	Pervious	Qp 100 Year (cfs)	Pipe Data: n-value	Upstream Rim/Grate	Inv. U/S	Inv. D/S	Pipe dia.	slope	Pipe Length	HGL Data: Full Flow Q (cfs)	Full Flow V (fps)	Pipe Travel Time (min)	100 Yr HGL Slope	U/S 100 Yr HGL	U/S HGL Design Control	HGL to Rim/Grate
Future-South 3	I1		I3		PAA1	4.17	4.2	I1	200.0	4.2	540.0	0.0100	20	15.00	15.00	2.40	0.08	30.0%	9.90	0.015	117.9	113.5725	113.21	24	0.0015	243	7.59	2.42	1.7	0.0026	~~116.49~~	HGL	STREET FLOW
	I2		I3		PAA2	1.16	1.2	I2	160.0	1.2	275.0	0.0100	20	12.15	12.15	2.66	0.08	30.0%	3.07	0.015	117.7	113.61	113.21	18	0.0020	201	4.07	2.30	1.5	0.0011	~~116.67~~	HGL	STREET FLOW
	I3		I4		PAA3	1.89	7.2	I3	160.0	1.9	200.0	0.0100	20	10.58	16.68	2.27	0.08	30.0%	16.26	0.015	117.6	113.208	112.85	24	0.0015	242	7.59	2.42	1.7	0.0069	~~116.44~~	HGL	STREET FLOW
	I4		I5		PAA4	2.48	9.7	I4	150.0	2.5	275.0	0.0100	20	11.10	18.35	2.17	0.08	30.0%	20.80	0.015	116.9	112.845	112.43	36	0.0010	413	18.27	2.59	2.7	0.0013	116.67	HGL	-0.2
	I5		I7		PAA5	2.12	11.8	I5	200.0	2.1	280.0	0.0100	20	12.71	21.01	2.01	0.08	30.0%	23.53	0.015	116.6	112.432	112.17	36	0.0010	266	18.27	2.59	1.7	0.0017	116.14	HGL	-0.5
	I6		I7		PAA6	1.36	1.4	I6	250.0	1.4	50.0	0.0100	20	10.87	10.87	2.81	0.08	30.0%	3.79	0.015	116.4	112.568	112.17	18	0.0020	201	4.07	2.30	1.5	0.0017	115.70	HGL	-0.7
	I7		OUT1		PAA7	1.06	14.2	I7	170.0	1.1	120.0	0.0100	20	9.99	22.72	1.88	0.08	30.0%	26.46	0.015	116.3	112.166	112.00	36	0.0010	166	18.27	2.59	1.1	0.0021	115.35	HGL	-1.0
																											Starting HGL assumed top of Pipe				115.00	HGL	
	DMH 206		J5		PBB3	10.10	11.0	J3	50.0	10.1	260.0	0.0100	20		19.0	2.13	0.08	30.0%	23.05	0.015	122.7	114.80	114.51	36	0.0010	289	18.27	2.59	1.9	0.0016	~~120.62~~	HGL	STREET FLOW
	J4		J5		PBB4	4.57	4.6	J4	200.0	4.6	350.0	0.0100	20	12.83	12.8	2.59	0.08	30.0%	11.73	0.015	123.7	114.91	114.51	18	0.0020	200	4.07	2.30	1.4	0.0166	~~120.38~~	HGL	STREET FLOW
	J5		J7		PBB5	2.91	18.4	J5	200.0	2.9	350.0	0.0100	20	13.31	20.9	2.03	0.08	30.0%	36.90	0.015	122.4	114.51	114.26	36	0.0010	255	18.27	2.59	1.6	0.0041	~~120.06~~	HGL	STREET FLOW
	J6		J7		PBB6	1.38	1.4	J6	150.0	1.4	200.0	0.0100	20	10.52	10.5	2.86	0.08	30.0%	3.91	0.015	122.4	114.96	114.26	18	0.0020	354	4.07	2.30	2.6	0.0018	~~124.67~~	HGL	STREET FLOW
	J7		J9		PBB7	3.05	22.9	J7	150.0	3.1	300.0	0.0100	20	11.23	23.4	1.83	0.08	30.0%	41.33	0.015	122.2	114.26	114.00	48	0.0010	254	39.35	3.13	1.4	0.0011	~~124.02~~	HGL	STREET FLOW
	J8		J9		PBB8	1.39	1.4	J8	150.0	1.4	200.0	0.0100	20	10.51	10.5	2.86	0.08	30.0%	3.95	0.015	122.1	114.71	114.00	18	0.0020	354	4.07	2.30	2.6	0.0019	~~124.00~~	HGL	STREET FLOW
	J9		J11		PBB9	3.05	27.3	J9	150.0	3.1	300.0	0.0100	20	11.23	24.8	1.74	0.08	30.0%	46.99	0.015	121.8	114.00	113.75	48	0.0010	254	39.35	3.13	1.4	0.0014	~~120.34~~	HGL	STREET FLOW
	J10		J15		PBB10	1.46	1.5	J10	150.0	1.5	200.0	0.0100	20	10.47	28.7	1.54	0.08	30.0%	2.21	0.015	121.4	113.26	112.56	18	0.0020	352	4.07	2.30	2.5	0.0006	~~120.68~~	HGL	STREET FLOW
	J11		J15		PBB11	3.12	30.4	J11	150.0	3.1	300.0	0.0100	20	11.20	26.1	1.67	0.08	30.0%	49.96	0.015	121.4	113.75	113.20	48	0.0010	551	39.35	3.13	2.9	0.0016	~~120.37~~	HGL	STREET FLOW
	J13		J14		PBB13	0.84	0.8	J13	50.0	0.8	300.0	0.0100	20	9.07	9.1	3.08	0.08	30.0%	2.58	0.015	120.2	113.74	113.20	18	0.0020	271	4.07	2.30	2.0	0.0008	~~120.70~~	HGL	STREET FLOW
	J14		J16		PBB14	3.46	4.3	J14	250.0	3.5	300.0	0.0100	20	13.78	13.8	2.50	0.08	30.0%	10.65	0.015	120.1	113.20	112.36	18	0.0020	420	4.07	2.30	3.0	0.0137	~~120.49~~	HGL	STREET FLOW
	J15		J16		PBB15	0.97	32.9	J15	200.0	1.0	150.0	0.0100	20	11.36	29.1	1.52	0.08	30.0%	49.11	0.015	118.3	112.56	112.36	48	0.0010	199	39.35	3.13	1.1	0.0016	117.05	HGL	-1.3
	J16		J20		PBB16	1.19	38.3	J16	175.0	1.2	250.0	0.0100	20	12.15	30.1	1.47	0.08	30.0%	55.53	0.015	117.9	112.36	112.04	48	0.0010	316	39.35	3.13	1.7	0.0020	116.74	HGL	-1.2
	J17		J18		PBB17	4.08	4.1	J17	200.0	4.1	350.0	0.0100	20	12.95	12.9	2.58	0.08	30.0%	10.42	0.015	120.8	114.68	113.87	18	0.0020	405	4.07	2.30	2.9	0.0131	~~120.65~~	HGL	STREET FLOW
	J18		J19		PBB18	2.51	6.6	J18	200.0	2.5	200.0	0.0100	20	11.49	15.9	2.33	0.08	30.0%	15.18	0.015	118.7	113.87	112.86	24	0.0030	338	10.73	3.42	1.6	0.0060	~~120.35~~	HGL	STREET FLOW
	J19		J20		PBB19	1.49	8.1	J19	200.0	1.5	150.0	0.0100	20	11.10	17.5	2.22	0.08	30.0%	17.70	0.015	118	112.86	112.04	24	0.0030	272	10.73	3.42	1.3	0.0082	~~120.33~~	HGL	STREET FLOW
	J20		OUT2A		PBB20	0.36	46.8	J20	75.0	0.4	175.0	0.0100	20	8.67	31.8	1.40	0.08	30.0%	64.57	0.015	117.1	112.04	112.00	48	0.0010	40	39.35	3.13	0.2	0.0027	116.11	HGL	-1.0
																											Starting HGL assumed top of Pipe				116.00	HGL	
Future-South 1	J12		DMH ZZ		PBB12	73.88	73.9	J12, HP1, HP2						19.77	19.8	2.09	0.08	30.0%	152.44	0.015	123.4	111.27	108.48	48	0.0036	774	74.67	5.94	2.2	0.0150	~~124.77~~	HGL	STREET FLOW
	DMH ZZ		OUT2B		PBB12B	0.00	73.9								21.9	1.25	0.08	30.0%	90.58	0.015	118.3	108.48	106.38	48	0.0040	524	78.71	6.26	1.4	0.0053	113.16	HGL	-5.1
																											Starting HGL assumed top of Pipe				110.38	Soffit	
Future South 2	K1		K4		PCC1	2.99	3.0	K1	200.0	3.0	300.0	0.0100	20	12.65	12.6	2.61	0.08	30.0%	7.72	0.015	122.9	116.52	114.91	18	0.0050	321	6.44	3.64	1.5	0.0072	~~127.21~~	HGL	STREET FLOW
	K2		K3		PCC2	2.34	2.3	K2	150.0	2.3	150.0	0.0100	20	9.46	14.1	2.47	0.08	30.0%	5.73	0.015	132	118.82	117.40	18	0.0050	283	6.44	3.64	1.3	0.0040	124.89	HGL	-7.1
	K3		K4		PCC3	1.42	3.8	K3	200.0	1.4	350.0	0.0100	20	14.19	15.4	2.36	0.08	30.0%	8.81	0.015	132	117.40	114.91	18	0.0050	498	6.44	3.64	2.3	0.0094	123.77	HGL	-8.2
	K5		K6		PCC5	2.18	2.2	K5	150.0	2.2	200.0	0.0100	20	10.18	10.2	2.91	0.08	30.0%	6.29	0.015	120.4	117.81	116.04	18	0.0045	395	6.10	3.45	1.9	0.0048	~~124.62~~	HGL	STREET FLOW
	K6		K4		PCC6	1.21	3.4	K6	150.0	1.2	250.0	0.0100	20	11.41	12.1	2.67	0.08	30.0%	8.98	0.015	119.1	116.04	114.91	24	0.0045	250	13.15	4.19	1.0	0.0021	~~119.64~~	HGL	STREET FLOW
	K4		K7		PCC7	2.13	12.3	K4	200.0	2.1	350.0	0.0100	20	13.67	17.7	2.21	0.08	30.0%	26.80	0.015	119.7	114.91	113.79	30	0.0035	319	21.02	4.28	1.2	0.0057	119.11	HGL	-0.6
	K7		OUT3		PCC8	1.75	14.0	K7	150.0	1.8	250.0	0.0100	20	11.06	11.1	2.79	0.08	30.0%	38.81	0.015	117.8	113.79	113.50	30	0.0035	84	21.02	4.28	0.3	0.0119	117.30	HGL	-0.5
																											Starting HGL assumed top of Pipe				116.29	HGL	
Future South	H0		H3		PDD1	4.54	4.5	H0	250.0	4.5	400.0	0.0100	20	14.68	14.7	2.42	0.08	30.0%	10.89	0.015	131	122.25	113.73	18	0.0150	568	11.15	6.31	1.5	0.0143	124.85	HGL	-6.1
	H1		H2		PDD2	3.35	3.3	H1	225.0	3.3	350.0	0.0100	20	13.80	13.8	2.50	0.08	30.0%	8.28	0.015	121	116.95	114.85	18	0.0050	420	6.44	3.64	1.9	0.0083	~~124.23~~	HGL	STREET FLOW
	H2		H3		PDD3	2.38	5.7	H2	225.0	2.4	350.0	0.0100	20	14.19	15.7	2.34	0.08	30.0%	13.27	0.015	118.2	114.85	113.73	24	0.0050	224	13.86	4.41	0.8	0.0046	117.75	HGL	-0.4
	H3		H6		PDD4	0.95	12.0	H3	50.0	0.9	300.0	0.0100	20	8.93	16.6	2.28	0.08	30.0%	27.00	0.015	125	113.73	110.65	36	0.0125	246	64.61	9.14	0.4	0.0022	116.73	Soffit	-8.3
	H4		H3		PDD5	0.76	0.8	H4	50.0	0.8	150.0	0.0100	20	6.53	6.5	3.63	0.08	30.0%	2.73	0.015	117.8	113.95	113.73	18	0.0050	45	6.44	3.64	0.2	0.0009	116.77	HGL	-1.0
	H5		H6		PDD6	2.94	2.9	H5	200.0	2.9	300.0	0.0100	20	12.66	12.7	2.61	0.08	30.0%	7.61	0.015	116.5	110.88	110.65	24	0.0050	45	13.86	4.41	0.2	0.0015	114.72	HGL	-1.8
	H6		H9		PDD7	0.42	15.3	H6	50.0	0.4	200.0	0.0100	20	8.00	17.0	2.25	0.08	30.0%	34.12	0.015	116.5	110.65	109.10	48	0.0050	310	88.00	7.00	0.7	0.0008	114.65	Soffit	-1.9
	H7		H9		PDD8	3.33	3.3	H7	200.0	3.3	350.0	0.0100	20	13.16	13.2	2.56	0.08	30.0%	8.44	0.015	116.5	109.33	109.10	18	0.0050	45	6.44	3.64	0.2	0.0086	113.49	HGL	-3.0
	H8		H9		PDD9	0.70	0.7	H8	100.0	0.7	100.0	0.0100	20	7.66	7.7	3.35	0.08	30.0%	2.33	0.015	116.5	109.33	109.10	18	0.0050	45	6.44	3.64	0.2	0.0007	113.13	HGL	-3.4
	H9		H16		PDD10	0.55	19.9	H9	50.0	0.5	300.0	0.0100	20	9.67	17.8	2.20	0.08	30.0%	43.37	0.015	117.5	109.10	107.60	48	0.0050	300	88.00	7.00	0.7	0.0012	113.10	Soffit	-4.4
	H10		H12		PDD11	3.19	3.2	H10	150.0	3.2	250.0	0.0100	20	10.56	10.6	2.86	0.08	30.0%	9.04	0.015	119.5	116.40	114.35	24	0.0050	410	13.86	4.41	1.5	0.0021	118.40	Soffit	-1.1
	H11		H12		PDD12	3.73	3.7	H11	150.0	3.7	350.0	0.0100	20	11.64	11.6	2.72	0.08	30.0%	10.06	0.015	119.5	115.35	114.35	24	0.0050	200	13.86	4.41	0.8	0.0026	117.87	HGL	-1.6
	H12		H13		PDD13	3.14	10.1	H12	200.0	3.1	300.0	0.0100	20	12.60	12.6	2.61	0.08	30.0%	26.06	0.015	118.5	114.35	113.06	36	0.0050	257	40.86	5.78	0.7	0.0020	117.35	Soffit	-1.2
	L1		L3		PLL1	1.44	1.4	L1	150.0	1.4	400.0	0.0100	20	13.53	13.5	2.52	0.08	30.0%	3.60	0.015	133.6	130.50	130.25	24	0.0025	100	9.80	3.12	0.5	0.0003	132.50	Soffit	-1.1
	L2		L3		PLL2	2.56	2.6	L2	250.0	2.6	400.0	0.0100	20	15.00	15.0	2.40	0.08	30.0%	6.07	0.015	133.6	130.50	130.25	24	0.0025	100	9.80	3.12	0.5	0.0010	132.50	Soffit	-1.1
	L3		L4		PLL3	1.09	5.1	L3	50.0	1.1	400.0	0.0100	20	10.38	15.5	2.35	0.08	30.0%	11.87	0.015	133.4	130.25	130.00	24	0.0050	50	13.86	4.41	0.2	0.0037	132.25	Soffit	-1.2
																											Starting HGL assumed top of Pipe				132.00	Soffit	
Future South	L4		L6		PLL4	2.99	3.0	L4	175.0	3.0	750.0	0.0100	20	15.00	15.0	2.40	0.08	30.0%	7.09	0.015	117.8	114.50	114.25	24	0.0025	100	9.80	3.12	0.5	0.0013	117.36	HGL	-0.4
	L5		L6		PLL5	4.74	4.7	L5	250.0	4.7	750.0	0.0100	20	15.00	15.0	2.40	0.08	30.0%	11.25	0.015	117.9	114.50	114.25	24	0.0025	100	9.80	3.12	0.5	0.0033	117.56	HGL	-0.3
	L6		OUT5		PLL6	2.09	14.9	L6	50.0	2.1	750.0	0.0100	20	14.27	19.8	2.08	0.08	30.0%	30.71	0.015	117.8	114.25	114.00	24	0.0050	50	13.86	4.41	0.2	0.0246	117.23	HGL	-0.6
																											Starting HGL assumed top of Pipe				116.00	Soffit	

Appendix H

WATER QUALITY

POST-DEVELOPMENT SITE WATER QUALITY SHED MAP

FOR

HP CAMPUS OAKS MASTER PLAN

NORTH INDUSTRIAL PLAN AREA
DATE: 3.06.2015
DATE REVISED: 6.11.2015

GRAPHIC SCALE
250 125 0 250 500
1 in = 250 ft

LEGEND

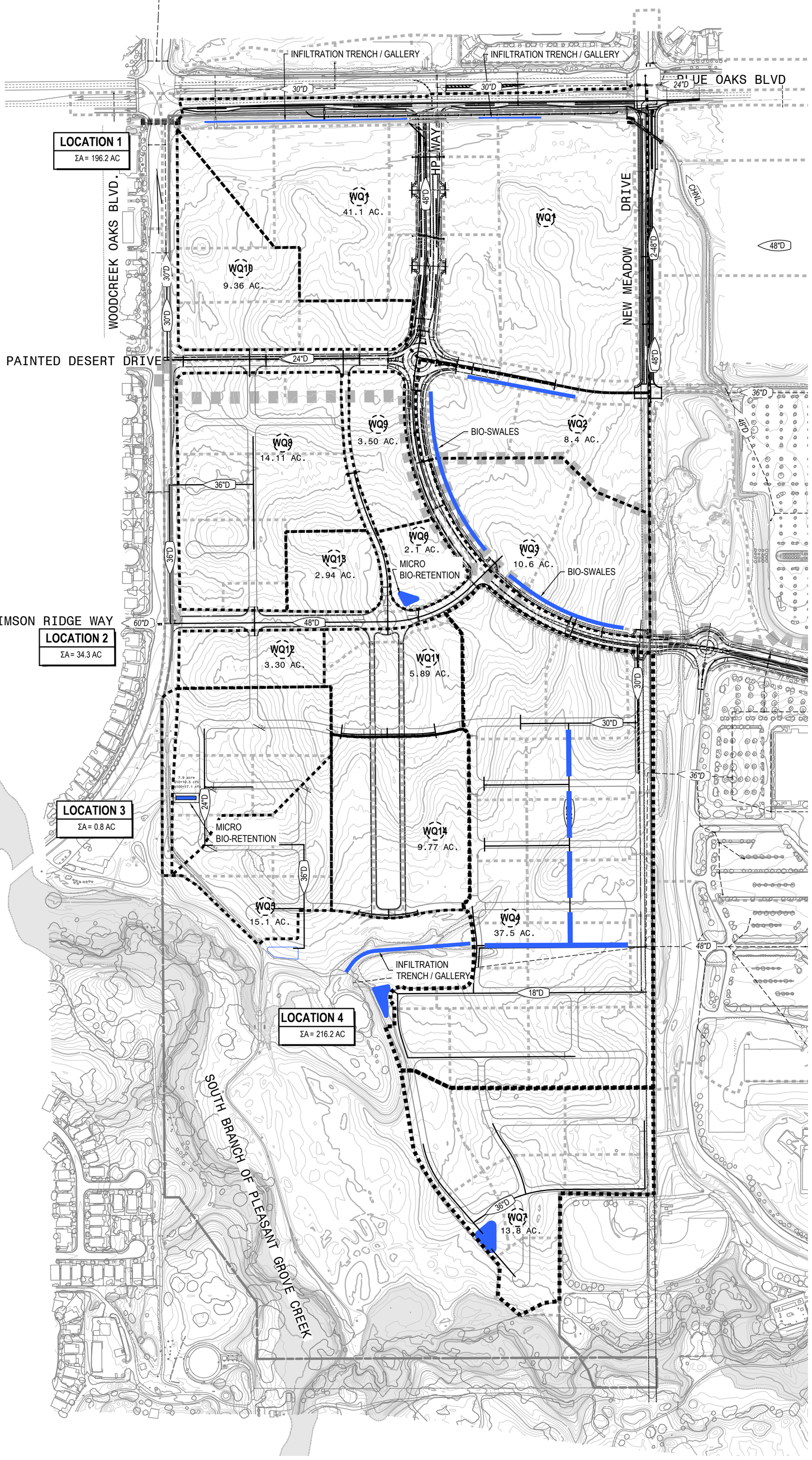
- MAJOR SHED BOUNDARY BETWEEN MAIN AND SOUTH BRANCH OF PLEASANT GROVE CREEKS
- LOCAL SHED BOUNDARY
- WATER QUALITY SHED BOUNDARY
- LIMITS OF CAMPUS OAKS
- < 30"D > EXISTING STORM DRAIN PIPE SIZE
- 48"D PROPOSED STORM DRAIN PIPE SIZE

NOTE

(1) LOCATION 4 COVERS THE SOUTHERN DRAINAGE THAT DRAINS DIRECTLY INTO THE SOUTH BRANCH OF PLEASANT GROVE CREEK

DRAINAGE MANAGEMENT AREA	DISCONNECTED ROOF DRAINS	MICRO BIO-RETENTION	INFILTRATION ARRAY	TREE PLANTING	STREAM BUFFER	VEGETATED SWALES
WQ1	X		X	X		
WQ2	X			X		X
WQ3	X			X		X
WQ4	X		X	X		X
WQ5	X	X		X	X	
WQ6	X	X		X		
WQ7	X	X	X	X	X	
WQ8	X	X	X	X		
WQ9	X	X	X	X		
WQ10	X	X		X		X
WQ11	X	X	X	X		
WQ12	X	X		X		
WQ13	X	X		X		
WQ14	X		X	X		

PRELIMINARY ASSESSMENT, SUBJECT TO CHANGE WITH FINAL DESIGN



WQ1

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Dwg: X:\2013\13-0076-00\DWG\ENGR\DESIGN\DRAINAGE STUDY ATTACHMENTS\130076-APPF-WATQUAL-POST.DWG | Saved: 06-12-15 08:25am GBARDINI | Plotted: 04-13-15 11:51am GBARDINI