



**East Bay Municipal Utility District
Sobrante Water Treatment Plant Reliability
Improvements Project
Draft Environmental Impact Report
SCH # 2022030308
Volume IV – Appendices E – H**

September 2024

717 Market Street, Suite 400
San Francisco, CA 94103
650-373-1200
www.panoramaenv.com



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Prepared for:

East Bay Municipal Utility District
Water Distribution Planning Division
375 11th Street
Oakland, CA 94607

Prepared by:

Panorama Environmental, Inc.
717 Market Street, Suite 400
San Francisco, CA 94103

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Appendix E – EBMUD Sobrante Water Treatment Plant Reliability Improvements Project Air Quality and Greenhouse Gas Construction and Operational Emissions Inventory

APPENDIX E

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APPENDIX E

Appendix E.1 – Air Quality and Greenhouse Gas Construction and Operational Emissions Inventory

Construction and Operational Emissions Inventory Supporting Information

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Offroad Equipment	ROG	Unmitigated Daily Emissions (pounds)						Metric Tons	Gallons	Gallons
		CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	CO2	Gasoline	Diesel
2026	0.76	5.69	4.86	0.19	-	0.17	-	130		12,816
2027	1.27	9.14	7.73	0.29	-	0.27	-	441		43,418
2028	1.44	12.8	8.11	0.30	-	0.28	-	476		46,877
2029	2.40	19.0	12.7	0.44	-	0.40	-	898		88,513
2030	0.57	4.72	2.86	0.11	-	0.10	-	160		15,784
Phase 1	1.38	11.0	7.70	0.28	-	0.26	-	2,105		207,407
2035	0.45	3.78	2.08	0.08	-	0.07	-	164		16,118
2036	0.97	11.8	4.26	0.15	-	0.14	-	369		36,382
2037	0.94	8.79	4.21	0.15	-	0.14	-	318		31,336
2038	1.06	8.17	3.85	0.14	-	0.13	-	315		31,045
Phase 2	1.05	10.2	4.48	0.16	-	0.15	-	1,166		114,881
Employee Vehicles	ROG	Unmitigated Daily Emissions (pounds)						Metric Tons	Gallons	Gallons
		CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	CO2	Gasoline	Diesel
2026	0.00	0.25	0.02	0.00	0.02	0.00	0.01	7	834	
2027	0.01	0.38	0.03	0.00	0.04	0.00	0.01	23	2,554	
2028	0.01	0.41	0.03	0.00	0.04	0.00	0.02	25	2,787	
2029	0.01	0.38	0.03	0.00	0.04	0.00	0.02	23	2,611	
2030	0.00	0.27	0.02	0.00	0.03	0.00	0.01	14	1,598	
Phase 1	0.01	0.35	0.03	0.00	0.03	0.00	0.01	93	10,385	
2035	0.00	0.11	0.01	0.00	0.01	0.00	0.01	8	845	
2036	0.00	0.29	0.02	0.00	0.03	0.00	0.01	19	2,149	
2037	0.00	0.31	0.02	0.00	0.04	0.00	0.01	20	1,982	
2038	0.00	0.25	0.01	0.00	0.03	0.00	0.01	12	1,381	
Phase 2	0.00	0.24	0.01	0.00	0.03	0.00	0.01	59	6,357	
Haul Trucks	ROG	Unmitigated Daily Emissions (pounds)						Metric Tons	Gallons	Gallons
		CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	CO2	Gasoline	Diesel
2026	0.02	0.22	2.47	0.01	0.16	0.01	0.07	80		7,852
2027	0.03	0.32	3.68	0.23	0.24	0.02	0.10	234		23,037
2028	0.03	0.35	3.94	0.27	0.26	0.02	0.11	246		24,216
2029	0.06	0.71	8.14	0.56	0.53	0.03	0.22	499		49,150
2030	0.02	0.19	2.13	0.15	0.14	0.01	0.06	107		10,577
Phase 1	0.03	0.38	4.33	0.28	0.28	0.02	0.12	1,166		114,831
2035	0.01	0.10	1.18	0.08	0.08	0.00	0.03	67		6,641
2036	0.02	0.27	3.04	0.21	0.20	0.01	0.08	173		17,007
2037	0.02	0.29	3.27	0.23	0.21	0.01	0.09	154		11,984
2038	0.03	0.34	3.84	0.27	0.25	0.02	0.10	162		15,962
Phase 2	0.02	0.30	3.47	0.24	0.22	0.01	0.09	556		51,595
Fugitive Dust and VOC	ROG	Unmitigated Daily Emissions (pounds)						Metric Tons	Gallons	Gallons
		CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	CO2	Gasoline	Diesel
2026	0.81				32.5		6.82			
2027					16.2		3.41			
2028					16.2		3.41			
2029					16.2		3.41			
2030					19.5		4.09			
Phase 1					32.5		6.82			
2035	0.81				11.0		2.31			
2036					11.0		2.31			
2037					13.2		2.77			
2038					14.6		3.07			
Phase 2					14.6		3.07			

		Unmitigated Daily Emissions (pounds)							Metric Tons	Gallons	Gallons
Subtotal		ROG	CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	CO2	Gasoline	Diesel
WTP	2026	1.59	6.16	7.35	0.20	32.6	0.19	6.89	217	834	20,668
	2027	1.31	9.84	11.4	0.53	16.5	0.29	3.52	697	2,554	66,454
	2028	1.48	13.6	12.1	0.58	16.5	0.30	3.53	746	2,787	71,093
	2029	2.47	20.1	20.9	1.00	16.8	0.44	3.64	1,421	2,611	137,663
	2030	0.59	5.18	5.02	0.26	19.6	0.11	4.16	282	1,598	26,360
	Phase 1	2.47	20.1	20.9	1.00	32.6	0.44	6.89	3,363	10,385	322,238
	2035	1.27	4.00	3.27	0.16	11.1	0.08	2.34	239	845	22,759
	2036	1.00	12.3	7.31	0.36	11.2	0.15	2.40	561	2,149	53,390
	2037	0.97	9.43	8.07	0.42	13.5	0.15	2.88	492	1,982	43,320
	2038	1.09	8.72	7.33	0.38	14.9	0.15	3.18	489	1,381	47,007
	Phase 2	1.27	12.3	8.07	0.42	14.9	0.15	3.18	1,781	6,357	166,476
		Unmitigated Daily Emissions (pounds)							Metric Tons	Gallons	Gallons
Subtotal		ROG	CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	CO2	Gasoline	Diesel
Pipeline	2026	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	2027	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	2028	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	2029	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	2030	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	Phase 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	2035	2.66	20.6	29.6	1.32	8.50	0.66	1.77	2,461		242,417
	2036	2.66	20.6	29.6	1.32	8.50	0.66	1.77	1,025		101,007
	2037	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	2038	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	Phase 2	2.66	20.6	29.55	1.32	8.50	0.66	1.77	3,486		343,424
		Unmitigated Daily Emissions (pounds)									
Grand Total		ROG	CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f			
	2026	1.59	6.16	7.35	0.20	32.6	0.19	6.89	217	834	21,400
	2027	1.31	9.84	11.4	0.53	16.5	0.29	3.52	697	2,554	68,696
	2028	1.48	13.6	12.1	0.58	16.5	0.30	3.53	746	2,787	73,539
	2029	2.47	20.1	20.9	1.00	16.8	0.44	3.64	1,421	2,611	139,955
	2030	0.59	5.18	5.02	0.26	19.6	0.11	4.16	282	1,598	27,763
	Phase 1	2.47	20.1	20.9	1.00	32.6	0.44	6.89	3,363	10,385	322,238
	2035	3.93	24.6	32.8	1.47	19.6	0.74	4.11	2,699	845	265,917
	2036	3.66	32.9	36.9	1.68	19.7	0.82	4.17	1,586	2,149	156,283
	2037	0.97	9.43	8.07	0.42	13.5	0.15	2.88	492	1,982	48,520
	2038	1.09	8.72	7.33	0.38	14.9	0.15	3.18	489	1,381	48,219
	Phase 2	3.93	32.9	36.9	1.68	19.7	0.82	4.17	5,267	6,357	509,899
CEQA Thresholds		54		54	82		54		8,630	16,741	832,138

Offroad Equipment	ROG	Mitigated Daily Emissions (pounds)						Metric Tons	Gallons	Gallons
		CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	CO2	Gasoline	Diesel
2026	0.71	9.38	3.86	0.14	-	0.13	-	130		12,774
2027	1.19	18.1	6.18	0.22	-	0.20	-	434		42,753
2028	1.27	19.5	6.32	0.22	-	0.21	-	457		45,020
2029	2.41	29.8	11.5	0.41	-	0.38	-	885		87,226
2030	0.53	6.80	2.53	0.09	-	0.09	-	157		15,514
Phase 1	1.31	18.0	6.48	0.23	-	0.21	-	2,063		203,289
2035	0.41	7.14	1.58	0.06	-	0.05	-	158		15,534
2036	0.94	16.7	3.54	0.13	-	0.12	-	360		35,466
2037	0.79	14.7	2.89	0.10	-	0.10	-	300		29,603
2038	1.05	12.3	3.64	0.13	-	0.12	-	313		30,857
Phase 2	0.97	15.9	3.58	0.13	-	0.12	-	1,131		111,460
Employee Vehicles	ROG	Mitigated Daily Emissions (pounds)						Metric Tons	Gallons	Gallons
		CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	CO2	Gasoline	Diesel
2026	0.00	0.25	0.02	0.00	0.02	0.00	0.01	7	834	
2027	0.01	0.38	0.03	0.00	0.04	0.00	0.01	23	2,554	
2028	0.01	0.41	0.03	0.00	0.04	0.00	0.02	25	2,787	
2029	0.01	0.38	0.03	0.00	0.04	0.00	0.02	23	2,611	
2030	0.00	0.27	0.02	0.00	0.03	0.00	0.01	14	1,598	
Phase 1	0.01	0.35	0.03	0.00	0.03	0.00	0.01	93	10,385	
2035	0.00	0.11	0.01	0.00	0.01	0.00	0.01	8	845	
2036	0.00	0.29	0.02	0.00	0.03	0.00	0.01	19	2,149	
2037	0.00	0.31	0.02	0.00	0.04	0.00	0.01	20	1,982	
2038	0.00	0.25	0.01	0.00	0.03	0.00	0.01	12	1,381	
Phase 2	0.00	0.24	0.01	0.00	0.03	0.00	0.01	59	6,357	
Haul Trucks	ROG	Mitigated Daily Emissions (pounds)						Metric Tons	Gallons	Gallons
		CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	CO2	Gasoline	Diesel
2026	0.02	0.22	2.47	0.01	0.16	0.01	0.07	80		7,852
2027	0.03	0.32	3.68	0.23	0.24	0.02	0.10	234		23,037
2028	0.03	0.35	3.94	0.27	0.26	0.02	0.11	246		24,216
2029	0.06	0.71	8.14	0.56	0.53	0.03	0.22	499		49,150
2030	0.02	0.19	2.13	0.15	0.14	0.01	0.06	107		10,577
Phase 1	0.03	0.38	4.33	0.28	0.28	0.02	0.12	1,166		114,831
2035	0.01	0.10	1.18	0.08	0.08	0.00	0.03	67		6,641
2036	0.02	0.27	3.04	0.21	0.20	0.01	0.08	173		17,007
2037	0.02	0.29	3.27	0.23	0.21	0.01	0.09	154		11,984
2038	0.03	0.34	3.84	0.27	0.25	0.02	0.10	162		15,962
Phase 2	0.02	0.30	3.47	0.24	0.22	0.01	0.09	556		51,595
Fugitive Dust and VOC	ROG	Mitigated Daily Emissions (pounds)						Metric Tons	Gallons	Gallons
		CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	CO2	Gasoline	Diesel
2026	0.81				32.5		6.82			
2027					16.2		3.41			
2028					16.2		3.41			
2029					16.2		3.41			
2030					19.5		4.09			
Phase 1					32.5		6.82			
2035	0.81				11.0		2.31			
2036					11.0		2.31			

2037	13.2	2.77
2038	14.6	3.07
Phase 2	14.6	3.07

		Monthly Trips	Operation Profile	Emission Factor (g/mile)									Monthly Emissions (tons)									Annual Emissions (metric tons/year)	
Year	Month			ROG	CO	NOX	CO2	CH4	N2O	PM10e	PM2.5e	SO2	ROG	CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	SO2	CO2e	gals Gas	
2026	July	21	0.06	0.01	0.52	0.05	254	0.002	0.005	0.001	0.001	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	13	
2026	August	163	0.47	0.01	0.52	0.05	254	0.002	0.005	0.001	0.001	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.9	101	
2026	September	273	0.79	0.01	0.52	0.05	254	0.002	0.005	0.001	0.001	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.5	169	
2026	October	286	0.83	0.01	0.52	0.05	254	0.002	0.005	0.001	0.001	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.6	177	
2026	November	257	0.74	0.01	0.52	0.05	254	0.002	0.005	0.001	0.001	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.4	159	
2026	December	346	1.00	0.01	0.52	0.05	254	0.002	0.005	0.001	0.001	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.9	214	
2027	January	323	0.73	0.01	0.50	0.04	247	0.002	0.005	0.001	0.001	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.7	194	
2027	February	398	0.90	0.01	0.50	0.04	247	0.002	0.005	0.001	0.001	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.1	239	
2027	March	444	1.00	0.01	0.50	0.04	247	0.002	0.005	0.001	0.001	0.002	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	2.4	267	
2027	April	356	0.80	0.01	0.50	0.04	247	0.002	0.005	0.001	0.001	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.9	214	
2027	May	303	0.68	0.01	0.50	0.04	247	0.002	0.005	0.001	0.001	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.6	182	
2027	June	338	0.76	0.01	0.50	0.04	247	0.002	0.005	0.001	0.001	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.8	203	
2027	July	317	0.71	0.01	0.50	0.04	247	0.002	0.005	0.001	0.001	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.7	191	
2027	August	360	0.81	0.01	0.50	0.04	247	0.002	0.005	0.001	0.001	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.9	217	
2027	September	362	0.82	0.01	0.50	0.04	247	0.002	0.005	0.001	0.001	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.9	218	
2027	October	360	0.81	0.01	0.50	0.04	247	0.002	0.005	0.001	0.001	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.9	217	
2027	November	322	0.73	0.01	0.50	0.04	247	0.002	0.005	0.001	0.001	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.7	194	
2027	December	362	0.82	0.01	0.50	0.04	247	0.002	0.005	0.001	0.001	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.9	218	
2028	January	334	0.70	0.01	0.47	0.04	240	0.002	0.005	0													

[illegible]

Days					Emissions (tons)				
132	2026	0.00	0.25	0.02	0.00	0.02	0.00	0.01	0.00
264	2027	0.01	0.38	0.03	0.00	0.04	0.00	0.01	0.00
264	2028	0.01	0.41	0.03	0.00	0.04	0.00	0.02	0.00
264	2029	0.01	0.38	0.03	0.00	0.04	0.00	0.02	0.00
220	2030	0.00	0.27	0.02	0.00	0.03	0.00	0.01	0.00
1144	Phase 1	0.01	0.35	0.03	0.00	0.03	0.00	0.01	0.00

[illegible]

2035	January	0	-	0.02	0.19	2.21	1,014	0.001	0.16	0.15	0.01	0.010	-	-	-	-	-	-	-	-	-	-	-
2035	February	0	-	0.02	0.19	2.21	1,014	0.001	0.16	0.15	0.01	0.010	-	-	-	-	-	-	-	-	-	-	-
2035	March	688	1.00	0.02	0.19	2.21	1,014	0.001	0.16	0.15	0.01	0.010	0.00	0.01	0.07	0.00	0.00	0.00	0.00	0.00	0.00	29.1	2,865
2035	April	337	0.49	0.02	0.19	2.21	1,014	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	14.2	1,403
2035	May	48	0.07	0.02	0.19	2.21	1,014	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.0	200
2035	June	172	0.25	0.02	0.19	2.21	1,014	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	7.3	716
2035	July	154	0.22	0.02	0.19	2.21	1,014	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	6.5	641
2035	August	48	0.07	0.02	0.19	2.21	1,014	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.0	200
2035	September	48	0.07	0.02	0.19	2.21	1,014	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.0	200
2035	October	24	0.03	0.02	0.19	2.21	1,014	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.0	100
2035	November	76	0.11	0.02	0.19	2.21	1,014	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	3.2	316
2035	December	0	-	0.02	0.19	2.21	1,014	0.001	0.16	0.15	0.01	0.010	-	-	-	-	-	-	-	-	-	-	-
2036	January	24	0.04	0.02	0.19	2.21	1,006	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.0	99
2036	February	332	0.49	0.02	0.19	2.21	1,006	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	13.9	1,370
2036	March	311	0.46	0.02	0.19	2.21	1,006	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	13.0	1,284
2036	April	242	0.36	0.02	0.19	2.21	1,006	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	10.1	999
2036	May	194	0.29	0.02	0.19	2.21	1,006	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	8.1	801
2036	June	323	0.48	0.02	0.19	2.21	1,006	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	13.5	1,333
2036	July	679	1.00	0.02	0.19	2.21	1,006	0.001	0.16	0.15	0.01	0.010	0.00	0.01	0.07	0.00	0.00	0.00	0.00	0.00	0.00	28.4	2,803
2036	August	549	0.81	0.02	0.19	2.21	1,006	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	23.0	2,266
2036	September	488	0.72	0.02	0.19	2.21	1,006	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	20.4	2,014
2036	October	448	0.66	0.02	0.19	2.21	1,006	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	18.8	1,849
2036	November	288	0.42	0.02	0.19	2.21	1,006	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	12.1	1,189
2036	December	242	0.36	0.02	0.19	2.21	1,006	0.001	0.16	0.15	0.01	0.010	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	10.1	999
2037	January	279	0.42	0.02	0.19	2.20	997	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	11.6	1,142
2037	February	200	0.30	0.02	0.19	2.20	997	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	8.3	819
2037	March	201	0.30	0.02	0.19	2.20	997	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	8.4	823
2037	April	218	0.33	0.02	0.19	2.20	997	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	9.1	893
2037	May	241	0.36	0.02	0.19	2.20	997	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	10.0	987
2037	June	320	0.48	0.02	0.19	2.20	997	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	13.3	1,310
2037	July	666	1.00	0.02	0.19	2.20	997	0.001	0.16	0.15	0.01	0.009	0.00	0.01	0.06	0.00	0.00	0.00	0.00	0.00	0.00	27.7	2,727
2037	August	189	0.28	0.02	0.19	2.20	997	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	7.9	774
2037	September	375	0.56	0.02	0.19	2.20	997	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	15.6	1,535
2037	October	238	0.36	0.02	0.19	2.20	997	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	9.9	974
2037	November	217	0.33	0.02	0.19	2.20	997	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	9.0	888
2037	December	561	0.84	0.02	0.19	2.20	997	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	23.3	2,297
2038	January	1462	1.00	0.02	0.19	2.19	990	0.001	0.16	0.15	0.01	0.009	0.00	0.01	0.14	0.01	0.01	0.00	0.00	0.00	0.00	60.3	5,941
2038	February	1278	0.87	0.02	0.19	2.19	990	0.001	0.16	0.15	0.01	0.009	0.00	0.01	0.12	0.01	0.01	0.00	0.00	0.00	0.00	52.7	5,193
2038	March	207	0.14	0.02	0.19	2.19	990	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	8.5	841
2038	April	198	0.14	0.02	0.19	2.19	990	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	8.2	805
2038	May	189	0.13	0.02	0.19	2.19	990	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	7.8	768
2038	June	198	0.14	0.02	0.19	2.19	990	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	8.2	805
2038	July	198	0.14	0.02	0.19	2.19	990	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	8.2	805
2038	August	198	0.14	0.02	0.19	2.19	990	0.001	0.16	0.15	0.01	0.009	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	8.2	805
2038	September	0	-	0.02	0.19	2.19	990	0.001	0.16	0.15	0.01	0.009	-	-	-	-	-	-	-	-	-	-	-

		2026	0.00	0.01	0.16	0.00	0.01	0.00	0.00	0.00		80	7,852
		2027	0.00	0.04	0.49	0.03	0.03	0.00	0.01	0.00		234	23,037
		2028	0.00	0.05	0.52	0.04	0.03	0.00	0.01	0.00		246	24,216
		2029	0.01	0.09	1.07	0.07	0.07	0.00	0.03	0.00		499	49,150
		2030	0.00	0.02	0.23	0.02	0.02	0.00	0.01	0.00		107	10,577
	Phase 1		0.02	0.22	2.48	0.16	0.16	0.01	0.07	0.01		1,166	114,831
		2035	0.00	0.01	0.16	0.01	0.01	0.00	0.00	0.00		67	6,641
		2036	0.00	0.04	0.40	0.03	0.03	0.00	0.01	0.00		173	17,007
		2037	0.00	0.03	0.36	0.02	0.02	0.00	0.01	0.00		154	11,984
		2038	0.00	0.03	0.38	0.03	0.02	0.00	0.01	0.00		162	15,962
	Phase 2		0.01	0.11	1.30	0.09	0.08	0.01	0.03	0.01		556	51,595
			ROG	CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	SO2			
			Emissions (tons)										
22 Days per Month	Days	132	2026	0.02	0.22	2.47	0.01	0.16	0.01	0.07	0.01		
20 miles per one way trip		264	2027	0.03	0.32	3.68	0.23	0.24	0.02	0.10	0.02		
10.15 kg/CO2/gal		264	2028	0.03	0.35	3.94	0.27	0.26	0.02	0.11	0.02		
		264	2029	0.06	0.71	8.14	0.56	0.53	0.03	0.22	0.04		
		220	2030	0.02	0.19	2.13	0.15	0.14	0.01	0.06	0.01		
	1144	Phase 1		0.03	0.38	4.33	0.28	0.28	0.02	0.12	0.02		

[illegible]

		Offroad Construction Equipment Emissions - Unmitigated																	
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)		
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals
2026	July	Compressors	1	10		0.48	0.23	2.29	1.73	0.04	0.04	272.75	-	-	-	-	-	-	-
2026	August	Compressors	1	10		0.48	0.23	2.29	1.73	0.04	0.04	272.75	-	-	-	-	-	-	-
2026	September	Compressors	1	10		0.48	0.23	2.29	1.73	0.04	0.04	272.75	-	-	-	-	-	-	-
2026	October	Compressors	1	10		0.48	0.23	2.29	1.73	0.04	0.04	272.75	-	-	-	-	-	-	-
2026	November	Compressors	1	10		0.48	0.23	2.29	1.73	0.04	0.04	272.75	-	-	-	-	-	-	-
2026	December	Compressors	1	10	24	0.48	0.23	2.29	1.73	0.04	0.04	272.75	0.00	0.00	0.00	0.00	0.00	0	3
2027	January	Compressors	1	10	2	0.48	0.22	2.27	1.68	0.04	0.03	272.78	0.00	0.00	0.00	0.00	0.00	0	0
2027	February	Compressors	1	10	2	0.48	0.22	2.27	1.68	0.04	0.03	272.78	0.00	0.00	0.00	0.00	0.00	0	0
2027	March	Compressors	1	10		0.48	0.22	2.27	1.68	0.04	0.03	272.78	-	-	-	-	-	-	-
2027	April	Compressors	1	10		0.48	0.22	2.27	1.68	0.04	0.03	272.78	-	-	-	-	-	-	-
2027	May	Compressors	1	10	32	0.48	0.22	2.27	1.68	0.04	0.03	272.78	0.00	0.00	0.00	0.00	0.00	0	4
2027	June	Compressors	1	10		0.48	0.22	2.27	1.68	0.04	0.03	272.78	-	-	-	-	-	-	-
2027	July	Compressors	1	10	16	0.48	0.22	2.27	1.68	0.04	0.03	272.78	0.00	0.00	0.00	0.00	0.00	0	2
2027	August	Compressors	1	10	112	0.48	0.22	2.27	1.68	0.04	0.03	272.78	0.00	0.00	0.00	0.00	0.00	0	14
2027	September	Compressors	1	10	72	0.48	0.22	2.27	1.68	0.04	0.03	272.78	0.00	0.00	0.00	0.00	0.00	0	9
2027	October	Compressors	1	10	56	0.48	0.22	2.27	1.68	0.04	0.03	272.78	0.00	0.00	0.00	0.00	0.00	0	7
2027	November	Compressors	1	10	40	0.48	0.22	2.27	1.68	0.04	0.03	272.78	0.00	0.00	0.00	0.00	0.00	0	5
2027	December	Compressors	1	10	40	0.48	0.22	2.27	1.68	0.04	0.03	272.78	0.00	0.00	0.00	0.00	0.00	0	5
2028	January	Compressors	1	10	56	0.48	0.21	2.26	1.63	0.03	0.03	272.81	0.00	0.00	0.00	0.00	0.00	0	7
2028	February	Compressors	1	10	96	0.48	0.21	2.26	1.63	0.03	0.03	272.81	0.00	0.00	0.00	0.00	0.00	0	12
2028	March	Compressors	1	10	120	0.48	0.21	2.26	1.63	0.03	0.03	272.81	0.00	0.00	0.00	0.00	0.00	0	15
2028	April	Compressors	1	10		0.48	0.21	2.26	1.63	0.03	0.03	272.81	-	-	-	-	-	-	-
2028	May	Compressors	1	10	56	0.48	0.21	2.26	1.63	0.03	0.03	272.81	0.00	0.00	0.00	0.00	0.00	0	7
2028	June	Compressors	1	10	56	0.48	0.21	2.26	1.63	0.03	0.03	272.81	0.00	0.00	0.00	0.00	0.00	0	7
2028	July	Compressors	1	10		0.48	0.21	2.26	1.63	0.03	0.03	272.81	-	-	-	-	-	-	-
2028	August	Compressors	1	10	40	0.48	0.21	2.26	1.63	0.03	0.03	272.81	0.00	0.00	0.00	0.00	0.00	0	5
2028	September	Compressors	1	10	8	0.48	0.21	2.26	1.63	0.03	0.03	272.81	0.00	0.00	0.00	0.00	0.00	0	1
2028	October	Compressors	1	10	24	0.48	0.21	2.26	1.63	0.03	0.03	272.81	0.00	0.00	0.00	0.00	0.00	0	3
2028	November	Compressors	1	10	24	0.48	0.21	2.26	1.63	0.03	0.03	272.81	0.00	0.00	0.00	0.00	0.00	0	3
2028	December	Compressors	1	10	8	0.48	0.21	2.26	1.63	0.03	0.03	272.81	0.00	0.00	0.00	0.00	0.00	0	1
2029	January	Compressors	1	10	16	0.48	0.20	2.24	1.61	0.02	0.02	272.81	0.00	0.00	0.00	0.00	0.00	0	2
2029	February	Compressors	1	10	72	0.48	0.20	2.24	1.61	0.02	0.02	272.81	0.00	0.00	0.00	0.00	0.00	0	9
2029	March	Compressors	1	10	176	0.48	0.20	2.24	1.61	0.02	0.02	272.81	0.00	0.00	0.00	0.00	0.00	0	23
2029	April	Compressors	1	10	120	0.48	0.20	2.24	1.61	0.02	0.02	272.81	0.00	0.00	0.00	0.00	0.00	0	15
2029	May	Compressors	1	10	16	0.48	0.20	2.24	1.61	0.02	0.02	272.81	0.00	0.00	0.00	0.00	0.00	0	2
2029	June	Compressors	1	10	24	0.48	0.20	2.24	1.61	0.02	0.02	272.81	0.00	0.00	0.00	0.00	0.00	0	3
2029	July	Compressors	1	10	16	0.48	0.20	2.24	1.61	0.02	0.02	272.81	0.00	0.00	0.00	0.00	0.00	0	2
2029	August	Compressors	1	10	48	0.48	0.20	2.24	1.61	0.02	0.02	272.81	0.00	0.00	0.00	0.00	0.00	0	6
2029	September	Compressors	1	10	48	0.48	0.20	2.24	1.61	0.02	0.02	272.81	0.00	0.00	0.00	0.00	0.00	0	6
2029	October	Compressors	1	10	48	0.48	0.20	2.24	1.61	0.02	0.02	272.81	0.00	0.00	0.00	0.00	0.00	0	6
2029	November	Compressors	1	10	8	0.48	0.20	2.24	1.61	0.02	0.02	272.81	0.00	0.00	0.00	0.00	0.00	0	1
2029	December	Compressors	1	10	40	0.48	0.20	2.24	1.61	0.02	0.02	272.81	0.00	0.00	0.00	0.00	0.00	0	5
2030	January	Compressors	1	10		0.48	0.19	2.23	1.59	0.02	0.02	272.80	-	-	-	-	-	-	-
2030	February	Compressors	1	10	80	0.48	0.19	2.23	1.59	0.02	0.02	272.80	0.00	0.00	0.00	0.00	0.00	0	10
2030	March	Compressors	1	10		0.48	0.19	2.23	1.59	0.02	0.02	272.80	-	-	-	-	-	-	-
2030	April	Compressors	1	10		0.48	0.19	2.23	1.59	0.02	0.02	272.80	-	-	-	-	-	-	-
2030	May	Compressors	1	10		0.48	0.19	2.23	1.59	0.02	0.02	272.80	-	-	-	-	-	-	-
2030	June	Compressors	1	10		0.48	0.19	2.23	1.59	0.02	0.02	272.80	-	-	-	-	-	-	-
2030	July	Compressors	1	10		0.48	0.19	2.23	1.59	0.02	0.02	272.80	-	-	-	-	-	-	-
2030	August	Compressors	1	10		0.48	0.19	2.23	1.59	0.02	0.02	272.80	-	-	-	-	-	-	-
2030	September	Compressors	1	10		0.48	0.19	2.23	1.59	0.02	0.02	272.80	-	-	-	-	-	-	-
2030	October	Compressors	1	10		0.48	0.19	2.23	1.59	0.02	0.02	272.80	-	-	-	-	-	-	-

2035	January	Compressors	1	10	0	0.48	0.18	2.22	1.53	0.01	0.01	272.78	-	-	-	-	-	-	-	-
2035	February	Compressors	1	10	0	0.48	0.18	2.22	1.53	0.01	0.01	272.78	-	-	-	-	-	-	-	-
2035	March	Compressors	1	10	0	0.48	0.18	2.22	1.53	0.01	0.01	272.78	-	-	-	-	-	-	-	-
2035	April	Compressors	1	10	0	0.48	0.18	2.22	1.53	0.01	0.01	272.78	-	-	-	-	-	-	-	-
2035	May	Compressors	1	10	16	0.48	0.18	2.22	1.53	0.01	0.01	272.78	0.00	0.00	0.00	0.00	0.00	0.00	0	2
2035	June	Compressors	1	10	16	0.48	0.18	2.22	1.53	0.01	0.01	272.78	0.00	0.00	0.00	0.00	0.00	0.00	0	2
2035	July	Compressors	1	10	16	0.48	0.18	2.22	1.53	0.01	0.01	272.78	0.00	0.00	0.00	0.00	0.00	0.00	0	2
2035	August	Compressors	1	10	16	0.48	0.18	2.22	1.53	0.01	0.01	272.78	0.00	0.00	0.00	0.00	0.00	0.00	0	2
2035	September	Compressors	1	10	32	0.48	0.18	2.22	1.53	0.01	0.01	272.78	0.00	0.00	0.00	0.00	0.00	0.00	0	4
2035	October	Compressors	1	10	24	0.48	0.18	2.22	1.53	0.01	0.01	272.78	0.00	0.00	0.00	0.00	0.00	0.00	0	3
2035	November	Compressors	1	10	8	0.48	0.18	2.22	1.53	0.01	0.01	272.78	0.00	0.00	0.00	0.00	0.00	0.00	0	1
2035	December	Compressors	1	10	0	0.48	0.18	2.22	1.53	0.01	0.01	272.78	-	-	-	-	-	-	-	-
2036	January	Compressors	1	10	16	0.48	0.18	2.22	1.53	0.01	0.01	272.79	0.00	0.00	0.00	0.00	0.00	0.00	0	2
2036	February	Compressors	1	10	0	0.48	0.18	2.22	1.53	0.01	0.01	272.79	-	-	-	-	-	-	-	-
2036	March	Compressors	1	10	16	0.48	0.18	2.22	1.53	0.01	0.01	272.79	0.00	0.00	0.00	0.00	0.00	0.00	0	2
2036	April	Compressors	1	10	184	0.48	0.18	2.22	1.53	0.01	0.01	272.79	0.00	0.00	0.00	0.00	0.00	0.00	0	24
2036	May	Compressors	1	10	48	0.48	0.18	2.22	1.53	0.01	0.01	272.79	0.00	0.00	0.00	0.00	0.00	0.00	0	6
2036	June	Compressors	1	10	16	0.48	0.18	2.22	1.53	0.01	0.01	272.79	0.00	0.00	0.00	0.00	0.00	0.00	0	2
2036	July	Compressors	1	10	96	0.48	0.18	2.22	1.53	0.01	0.01	272.79	0.00	0.00	0.00	0.00	0.00	0.00	0	12
2036	August	Compressors	1	10	192	0.48	0.18	2.22	1.53	0.01	0.01	272.79	0.00	0.00	0.00	0.00	0.00	0.00	0	25
2036	September	Compressors	1	10	24	0.48	0.18	2.22	1.53	0.01	0.01	272.79	0.00	0.00	0.00	0.00	0.00	0.00	0	3
2036	October	Compressors	1	10	0	0.48	0.18	2.22	1.53	0.01	0.01	272.79	-	-	-	-	-	-	-	-
2036	November	Compressors	1	10	32	0.48	0.18	2.22	1.53	0.01	0.01	272.79	0.00	0.00	0.00	0.00	0.00	0.00	0	4
2036	December	Compressors	1	10	8	0.48	0.18	2.22	1.53	0.01	0.01	272.79	0.00	0.00	0.00	0.00	0.00	0.00	0	1
2037	January	Compressors	1	10	48	0.48	0.18	2.22	1.52	0.01	0.01	272.83	0.00	0.00	0.00	0.00	0.00	0.00	0	6
2037	February	Compressors	1	10	184	0.48	0.18	2.22	1.52	0.01	0.01	272.83	0.00	0.00	0.00	0.00	0.00	0.00	0	24
2037	March	Compressors	1	10	160	0.48	0.18	2.22	1.52	0.01	0.01	272.83	0.00	0.00	0.00	0.00	0.00	0.00	0	21
2037	April	Compressors	1	10	56	0.48	0.18	2.22	1.52	0.01	0.01	272.83	0.00	0.00	0.00	0.00	0.00	0.00	0	7
2037	May	Compressors	1	10	120	0.48	0.18	2.22	1.52	0.01	0.01	272.83	0.00	0.00	0.00	0.00	0.00	0.00	0	15
2037	June	Compressors	1	10	224	0.48	0.18	2.22	1.52	0.01	0.01	272.83	0.00	0.00	0.00	0.00	0.00	0.00	0	29
2037	July	Compressors	1	10	184	0.48	0.18	2.22	1.52	0.01	0.01	272.83	0.00	0.00	0.00	0.00	0.00	0.00	0	24
2037	August	Compressors	1	10	88	0.48	0.18	2.22	1.52	0.01	0.01	272.83	0.00	0.00	0.00	0.00	0.00	0.00	0	11
2037	September	Compressors	1	10	112	0.48	0.18	2.22	1.52	0.01	0.01	272.83	0.00	0.00	0.00	0.00	0.00	0.00	0	14
2037	October	Compressors	1	10	184	0.48	0.18	2.22	1.52	0.01	0.01	272.83	0.00	0.00	0.00	0.00	0.00	0.00	0	24
2037	November	Compressors	1	10	16	0.48	0.18	2.22	1.52	0.01	0.01	272.83	0.00	0.00	0.00	0.00	0.00	0.00	0	2
2037	December	Compressors	1	10	0	0.48	0.18	2.22	1.52	0.01	0.01	272.83	-	-	-	-	-	-	-	-
2038	January	Compressors	1	10	0	0.48	0.18	2.22	1.52	0.01	0.01	272.83	-	-	-	-	-	-	-	-
2038	February	Compressors	1	10	0	0.48	0.18	2.22	1.52	0.01	0.01	272.83	-	-	-	-	-	-	-	-
2038	March	Compressors	1	10	0	0.48	0.18	2.22	1.52	0.01	0.01	272.83	-	-	-	-	-	-	-	-
2038	April	Compressors	1	10	0	0.48	0.18	2.22	1.52	0.01	0.01	272.83	-	-	-	-	-	-	-	-
2038	May	Compressors	1	10	0	0.48	0.18	2.22	1.52	0.01	0.01	272.83	-	-	-	-	-	-	-	-
2038	June	Compressors	1	10	0	0.48	0.18	2.22	1.52	0.01	0.01	272.83	-	-	-	-	-	-	-	-
2038	July	Compressors	1	10	0	0.48	0.18	2.22	1.52	0.01	0.01	272.83	-	-	-	-	-	-	-	-
2038	August	Compressors	1	10	0	0.48	0.18	2.22	1.52	0.01	0.01	272.83	-	-	-	-	-	-	-	-
2038	September	Compressors	1	10	0	0.48	0.18	2.22	1.52	0.01	0.01	272.83	-	-	-	-	-	-	-	-

22 Days per Month	10.15 kg/CO2/gal	Days	2026	0.00	0.00	0.00	0.00	0.00	0.03	3
			2027	0.00	0.00	0.00	0.00	0.00	0.49	48
			2028	0.00	0.01	0.00	0.00	0.00	0.64	63
			2029	0.00	0.01	0.01	0.00	0.00	0.83	82
			2030	0.00	0.00	0.00	0.00	0.00	0.10	10
			Phase 1	0.00	0.02	0.01	0.00	0.00	2.09	206
			2035	0.00	0.00	0.00	0.00	0.00	0.17	17
			2036	0.00	0.01	0.01	0.00	0.00	0.83	82
			2037	0.00	0.02	0.01	0.00	0.00	1.80	178
			2038	-	-	-	-	-	-	-
Average Daily Emissions (pounds)		Days	Phase 2	0.00	0.03	0.02	0.00	0.00	2.80	276
			ROG							
			CO							
			NOX							
			PM10							
			PM2.5							
			CO2 (metric tons)							
			gals Diesel							
			264	2035	0.00	0.01	0.01	0.00	0.00	
			264	2036	0.00	0.06	0.04	0.00	0.00	
			264	2037	0.01	0.12	0.08	0.00	0.00	
			198	2038	-	-	-	-	-	
			792	Phase 2	0.01	0.06	0.04	0.00	0.00	

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2
2026	July	Forklift	2	100		0.20	0.05	0.72	0.47	0.02	0.02	105.95	-	-	-	-	-	-
2026	August	Forklift	2	100		0.20	0.05	0.72	0.47	0.02	0.02	105.95	-	-	-	-	-	-
2026	September	Forklift	2	100		0.20	0.05	0.72	0.47	0.02	0.02	105.95	-	-	-	-	-	-
2026	October	Forklift	2	100		0.20	0.05	0.72	0.47	0.02	0.02	105.95	-	-	-	-	-	-
2026	November	Forklift	2	100		0.20	0.05	0.72	0.47	0.02	0.02	105.95	-	-	-	-	-	-
2026	December	Forklift	2	100	36	0.20	0.05	0.72	0.47	0.02	0.02	105.95	0.00	0.00	0.00	0.00	0.00	0
2027	January	Forklift	2	100		0.20	0.05	0.72	0.43	0.02	0.02	105.94	-	-	-	-	-	-
2027	February	Forklift	2	100	80	0.20	0.05	0.72	0.43	0.02	0.02	105.94	0.00	0.00	0.00	0.00	0.00	0
2027	March	Forklift	2	100	140	0.20	0.05	0.72	0.43	0.02	0.02	105.94	0.00	0.00	0.00	0.00	0.00	0
2027	April	Forklift	2	100		0.20	0.05	0.72	0.43	0.02	0.02	105.94	-	-	-	-	-	-
2027	May	Forklift	2	100		0.20	0.05	0.72	0.43	0.02	0.02	105.94	-	-	-	-	-	-
2027	June	Forklift	2	100		0.20	0.05	0.72	0.43	0.02	0.02	105.94	-	-	-	-	-	-
2027	July	Forklift	2	100		0.20	0.05	0.72	0.43	0.02	0.02	105.94	-	-	-	-	-	-
2027	August	Forklift	2	100	13	0.20	0.05	0.72	0.43	0.02	0.02	105.94	0.00	0.00	0.00	0.00	0.00	0
2027	September	Forklift	2	100	34	0.20	0.05	0.72	0.43	0.02	0.02	105.94	0.00	0.00	0.00	0.00	0.00	0
2027	October	Forklift	2	100	34	0.20	0.05	0.72	0.43	0.02	0.02	105.94	0.00	0.00	0.00	0.00	0.00	0
2027	November	Forklift	2	100	38	0.20	0.05	0.72	0.43	0.02	0.02	105.94	0.00	0.00	0.00	0.00	0.00	0
2027	December	Forklift	2	100	67	0.20	0.05	0.72	0.43	0.02	0.02	105.94	0.00	0.00	0.00	0.00	0.00	0
2028	January	Forklift	2	100	34	0.20	0.04	0.72	0.41	0.02	0.01	105.93	0.00	0.00	0.00	0.00	0.00	0
2028	February	Forklift	2	100	72	0.20	0.04	0.72	0.41	0.02	0.01	105.93	0.00	0.00	0.00	0.00	0.00	0
2028	March	Forklift	2	100		0.20	0.04	0.72	0.41	0.02	0.01	105.93	-	-	-	-	-	-
2028	April	Forklift	2	100		0.20	0.04	0.72	0.41	0.02	0.01	105.93	-	-	-	-	-	-
2028	May	Forklift	2	100		0.20	0.04	0.72	0.41	0.02	0.01	105.93	-	-	-	-	-	-
2028	June	Forklift	2	100	11	0.20	0.04	0.72	0.41	0.02	0.01	105.93	0.00	0.00	0.00	0.00	0.00	0
2028	July	Forklift	2	100	30	0.20	0.04	0.72	0.41	0.02	0.01	105.93	0.00	0.00	0.00	0.00	0.00	0
2028	August	Forklift	2	100	77	0.20	0.04	0.72	0.41	0.02	0.01	105.93	0.00	0.00	0.00	0.00	0.00	0
2028	September	Forklift	2	100	36	0.20	0.04	0.72	0.41	0.02	0.01	105.93	0.00	0.00	0.00	0.00	0.00	0
2028	October	Forklift	2	100	159	0.20	0.04	0.72	0.41	0.02	0.01	105.93	0.00	0.00	0.00	0.00	0.00	0
2028	November	Forklift	2	100	228	0.20	0.04	0.72	0.41	0.02	0.01	105.93	0.00	0.00	0.00	0.00	0.00	0
2028	December	Forklift	2	100	222	0.20	0.04	0.72	0.41	0.02	0.01	105.93	0.00	0.00	0.00	0.00	0.00	0
2029	January	Forklift	2	100	162	0.20	0.04	0.72	0.39	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2029	February	Forklift	2	100	130	0.20	0.04	0.72	0.39	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2029	March	Forklift	2	100	169	0.20	0.04	0.72	0.39	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2029	April	Forklift	2	100	216	0.20	0.04	0.72	0.39	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2029	May	Forklift	2	100	173	0.20	0.04	0.72	0.39	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2029	June	Forklift	2	100	78	0.20	0.04	0.72	0.39	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2029	July	Forklift	2	100	46	0.20	0.04	0.72	0.39	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2029	August	Forklift	2	100		0.20	0.04	0.72	0.39	0.01	0.01	105.94	-	-	-	-	-	-
2029	September	Forklift	2	100		0.20	0.04	0.72	0.39	0.01	0.01	105.94	-	-	-	-	-	-
2029	October	Forklift	2	100	68	0.20	0.04	0.72	0.39	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2029	November	Forklift	2	100	156	0.20	0.04	0.72	0.39	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2029	December	Forklift	2	100	100	0.20	0.04	0.72	0.39	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2030	January	Forklift	2	100	200	0.20	0.04	0.72	0.38	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2030	February	Forklift	2	100	80	0.20	0.04	0.72	0.38	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2030	March	Forklift	2	100	94	0.20	0.04	0.72	0.38	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2030	April	Forklift	2	100	54	0.20	0.04	0.72	0.38	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2030	May	Forklift	2	100	48	0.20	0.04	0.72	0.38	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2030	June	Forklift	2	100		0.20	0.04	0.72	0.38	0.01	0.01	105.94	-	-	-	-	-	-
2030	July	Forklift	2	100	72	0.20	0.04	0.72	0.38	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2030	August	Forklift	2	100	8	0.20	0.04	0.72	0.38	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0
2030	September	Forklift	2	100		0.20	0.04	0.72	0.38	0.01	0.01	105.94	-	-	-	-	-	-
2030	October	Forklift	2	100		0.20	0.04	0.72	0.38	0.01	0.01	105.94	-	-	-	-	-	-
2035	January	Forklift	2	100	0	0.20	0.04	0.71	0.34	0.01	0.01	105.94	-	-	-	-	-	-
2035	February	Forklift	2	100	0	0.20	0.04	0.71	0.34	0.01	0.01	105.94	-	-	-	-	-	-
2035	March	Forklift	2	100	0	0.20	0.04	0.71	0.34	0.01	0.01	105.94	-	-	-	-	-	-
2035	April	Forklift	2	100	0	0.20	0.04	0.71	0.34	0.01	0.01	105.94	-	-	-	-	-	-
2035	May	Forklift	2	100	0	0.20	0.04	0.71	0.34	0.01	0.01	105.94	-	-	-	-	-	-
2035	June	Forklift	2	100	0	0.20	0.04	0.71	0.34	0.01	0.01	105.94	-	-	-	-	-	-
2035	July	Forklift	2	100	0	0.20	0.04	0.71	0.34	0.01	0.01	105.94	-	-	-	-	-	-
2035	August	Forklift	2	100	0	0.20	0.04	0.71	0.34	0.01	0.01	105.94	-	-	-	-	-	-
2035	September	Forklift	2	100	0	0.20	0.04	0.71	0.34	0.01	0.01	105.94	-	-	-	-	-	-

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total	Load	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)	
					Hours	Factor	ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2
2026	July	Long Reach Forklift	3	125		0.20	0.07	1.18	0.53	0.04	0.03	212.14	-	-	-	-	-	-
2026	August	Long Reach Forklift	3	125		0.20	0.07	1.18	0.53	0.04	0.03	212.14	-	-	-	-	-	-
2026	September	Long Reach Forklift	3	125		0.20	0.07	1.18	0.53	0.04	0.03	212.14	-	-	-	-	-	-
2026	October	Long Reach Forklift	3	125		0.20	0.07	1.18	0.53	0.04	0.03	212.14	-	-	-	-	-	-
2026	November	Long Reach Forklift	3	125		0.20	0.07	1.18	0.53	0.04	0.03	212.14	-	-	-	-	-	-
2026	December	Long Reach Forklift	3	125		0.20	0.07	1.18	0.53	0.04	0.03	212.14	-	-	-	-	-	-
2027	January	Long Reach Forklift	3	125	14	0.20	0.06	1.17	0.45	0.03	0.03	212.20	0.00	0.00	0.00	0.00	0.00	0
2027	February	Long Reach Forklift	3	125	66	0.20	0.06	1.17	0.45	0.03	0.03	212.20	0.00	0.00	0.00	0.00	0.00	0
2027	March	Long Reach Forklift	3	125	22	0.20	0.06	1.17	0.45	0.03	0.03	212.20	0.00	0.00	0.00	0.00	0.00	0
2027	April	Long Reach Forklift	3	125		0.20	0.06	1.17	0.45	0.03	0.03	212.20	-	-	-	-	-	-
2027	May	Long Reach Forklift	3	125	4	0.20	0.06	1.17	0.45	0.03	0.03	212.20	0.00	0.00	0.00	0.00	0.00	0
2027	June	Long Reach Forklift	3	125		0.20	0.06	1.17	0.45	0.03	0.03	212.20	-	-	-	-	-	-
2027	July	Long Reach Forklift	3	125	4	0.20	0.06	1.17	0.45	0.03	0.03	212.20	0.00	0.00	0.00	0.00	0.00	0
2027	August	Long Reach Forklift	3	125	28	0.20	0.06	1.17	0.45	0.03	0.03	212.20	0.00	0.00	0.00	0.00	0.00	0
2027	September	Long Reach Forklift	3	125	4	0.20	0.06	1.17	0.45	0.03	0.03	212.20	0.00	0.00	0.00	0.00	0.00	0
2027	October	Long Reach Forklift	3	125	2	0.20	0.06	1.17	0.45	0.03	0.03	212.20	0.00	0.00	0.00	0.00	0.00	0
2027	November	Long Reach Forklift	3	125	10	0.20	0.06	1.17	0.45	0.03	0.03	212.20	0.00	0.00	0.00	0.00	0.00	0
2027	December	Long Reach Forklift	3	125	22	0.20	0.06	1.17	0.45	0.03	0.03	212.20	0.00	0.00	0.00	0.00	0.00	0
2028	January	Long Reach Forklift	3	125	66	0.20	0.06	1.17	0.42	0.03	0.03	212.13	0.00	0.00	0.00	0.00	0.00	0
2028	February	Long Reach Forklift	3	125	90	0.20	0.06	1.17	0.42	0.03	0.03	212.13	0.00	0.00	0.00	0.00	0.00	0
2028	March	Long Reach Forklift	3	125	90	0.20	0.06	1.17	0.42	0.03	0.03	212.13	0.00	0.00	0.00	0.00	0.00	0
2028	April	Long Reach Forklift	3	125	20	0.20	0.06	1.17	0.42	0.03	0.03	212.13	0.00	0.00	0.00	0.00	0.00	0
2028	May	Long Reach Forklift	3	125	32	0.20	0.06	1.17	0.42	0.03	0.03	212.13	0.00	0.00	0.00	0.00	0.00	0
2028	June	Long Reach Forklift	3	125	118	0.20	0.06	1.17	0.42	0.03	0.03	212.13	0.00	0.00	0.00	0.00	0.00	1
2028	July	Long Reach Forklift	3	125	128	0.20	0.06	1.17	0.42	0.03	0.03	212.13	0.00	0.00	0.00	0.00	0.00	1
2028	August	Long Reach Forklift	3	125	176	0.20	0.06	1.17	0.42	0.03	0.03	212.13	0.00	0.01	0.00	0.00	0.00	1
2028	September	Long Reach Forklift	3	125	230	0.20	0.06	1.17	0.42	0.03	0.03	212.13	0.00	0.01	0.00	0.00	0.00	1
2028	October	Long Reach Forklift	3	125	46	0.20	0.06	1.17	0.42	0.03	0.03	212.13	0.00	0.00	0.00	0.00	0.00	0
2028	November	Long Reach Forklift	3	125	52	0.20	0.06	1.17	0.42	0.03	0.03	212.13	0.00	0.00	0.00	0.00	0.00	0
2028	December	Long Reach Forklift	3	125	78	0.20	0.06	1.17	0.42	0.03	0.03	212.13	0.00	0.00	0.00	0.00	0.00	0
2029	January	Long Reach Forklift	3	125	56	0.20	0.06	1.20	0.45	0.03	0.03	212.22	0.00	0.00	0.00	0.00	0.00	0
2029	February	Long Reach Forklift	3	125	18	0.20	0.06	1.20	0.45	0.03	0.03	212.22	0.00	0.00	0.00	0.00	0.00	0
2029	March	Long Reach Forklift	3	125	124	0.20	0.06	1.20	0.45	0.03	0.03	212.22	0.00	0.00	0.00	0.00	0.00	1
2029	April	Long Reach Forklift	3	125	70	0.20	0.06	1.20	0.45	0.03	0.03	212.22	0.00	0.00	0.00	0.00	0.00	0
2029	May	Long Reach Forklift	3	125		0.20	0.06	1.20	0.45	0.03	0.03	212.22	-	-	-	-	-	-
2029	June	Long Reach Forklift	3	125	16	0.20	0.06	1.20	0.45	0.03	0.03	212.22	0.00	0.00	0.00	0.00	0.00	0
2029	July	Long Reach Forklift	3	125	104	0.20	0.06	1.20	0.45	0.03	0.03	212.22	0.00	0.00	0.00	0.00	0.00	1
2029	August	Long Reach Forklift	3	125	130	0.20	0.06	1.20	0.45	0.03	0.03	212.22	0.00	0.00	0.00	0.00	0.00	1
2029	September	Long Reach Forklift	3	125	106	0.20	0.06	1.20	0.45	0.03	0.03	212.22	0.00	0.00	0.00	0.00	0.00	1
2029	October	Long Reach Forklift	3	125	56	0.20	0.06	1.20	0.45	0.03	0.03	212.22	0.00	0.00	0.00	0.00	0.00	0
2029	November	Long Reach Forklift	3	125	6	0.20	0.06	1.20	0.45	0.03	0.03	212.22	0.00	0.00	0.00	0.00	0.00	0
2029	December	Long Reach Forklift	3	125		0.20	0.06	1.20	0.45	0.03	0.03	212.22	-	-	-	-	-	-
2030	January	Long Reach Forklift	3	125		0.20	0.06	1.20	0.44	0.03	0.02	212.22	-	-	-	-	-	-
2030	February	Long Reach Forklift	3	125		0.20	0.06	1.20	0.44	0.03	0.02	212.22	-	-	-	-	-	-
2030	March	Long Reach Forklift	3	125		0.20	0.06	1.20	0.44	0.03	0.02	212.22	-	-	-	-	-	-
2030	April	Long Reach Forklift	3	125		0.20	0.06	1.20	0.44	0.03	0.02	212.22	-	-	-	-	-	-
2030	May	Long Reach Forklift	3	125		0.20	0.06	1.20	0.44	0.03	0.02	212.22	-	-	-	-	-	-
2030	June	Long Reach Forklift	3	125		0.20	0.06	1.20	0.44	0.03	0.02	212.22	-	-	-	-	-	-
2030	July	Long Reach Forklift	3	125		0.20	0.06	1.20	0.44	0.03	0.02	212.22	-	-	-	-	-	-
2030	August	Long Reach Forklift	3	125		0.20	0.06	1.20	0.44	0.03	0.02	212.22	-	-	-	-	-	-
2030	September	Long Reach Forklift	3	125		0.20	0.06	1.20	0.44	0.03	0.02	212.22	-	-	-	-	-	-
2030	October	Long Reach Forklift	3	125		0.20	0.06	1.20	0.44	0.03	0.02	212.22	-	-	-	-	-	-
2035	January	Long Reach Forklift	3	125	0	0.20	0.04	1.19	0.34	0.01	0.01	212.22	-	-	-	-	-	-
2035	February	Long Reach Forklift	3	125	0	0.20	0.04	1.19	0.34	0.01	0.01	212.22	-	-	-	-	-	-
2035	March	Long Reach Forklift	3	125	0	0.20	0.04	1.19	0.34	0.01	0.01	212.22	-	-	-	-	-	-
2035	April	Long Reach Forklift	3	125	76	0.20	0.04	1.19	0.34	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0
2035	May	Long Reach Forklift	3	125	8	0.20	0.04	1.19	0.34	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0
2035	June	Long Reach Forklift	3	125	0	0.20	0.04	1.19	0.34	0.01	0.01	212.22	-	-	-	-	-	-
2035	July	Long Reach Forklift	3	125	4	0.20	0.04	1.19	0.34	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0
2035	August	Long Reach Forklift	3	125	30	0.20	0.04	1.19	0.34	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0
2035	September	Long Reach Forklift	3	125	24	0.20	0.04	1.19	0.34	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Bobcat	4	65		0.36	0.12	1.37	0.98	0.06	0.05	189.38	-	-	-	-	-	-	-
2026	August	Bobcat	4	65		0.36	0.12	1.37	0.98	0.06	0.05	189.38	-	-	-	-	-	-	-
2026	September	Bobcat	4	65		0.36	0.12	1.37	0.98	0.06	0.05	189.38	-	-	-	-	-	-	-
2026	October	Bobcat	4	65		0.36	0.12	1.37	0.98	0.06	0.05	189.38	-	-	-	-	-	-	-
2026	November	Bobcat	4	65		0.36	0.12	1.37	0.98	0.06	0.05	189.38	-	-	-	-	-	-	-
2026	December	Bobcat	4	65	24	0.36	0.12	1.37	0.98	0.06	0.05	189.38	0.00	0.00	0.00	0.00	0.00	0	10
2027	January	Bobcat	4	65	2	0.36	0.11	1.37	0.90	0.05	0.04	189.17	0.00	0.00	0.00	0.00	0.00	0	1
2027	February	Bobcat	4	65	2	0.36	0.11	1.37	0.90	0.05	0.04	189.17	0.00	0.00	0.00	0.00	0.00	0	1
2027	March	Bobcat	4	65		0.36	0.11	1.37	0.90	0.05	0.04	189.17	-	-	-	-	-	-	-
2027	April	Bobcat	4	65		0.36	0.11	1.37	0.90	0.05	0.04	189.17	-	-	-	-	-	-	-
2027	May	Bobcat	4	65	4	0.36	0.11	1.37	0.90	0.05	0.04	189.17	0.00	0.00	0.00	0.00	0.00	0	2
2027	June	Bobcat	4	65		0.36	0.11	1.37	0.90	0.05	0.04	189.17	-	-	-	-	-	-	-
2027	July	Bobcat	4	65		0.36	0.11	1.37	0.90	0.05	0.04	189.17	-	-	-	-	-	-	-
2027	August	Bobcat	4	65		0.36	0.11	1.37	0.90	0.05	0.04	189.17	-	-	-	-	-	-	-
2027	September	Bobcat	4	65	4	0.36	0.11	1.37	0.90	0.05	0.04	189.17	0.00	0.00	0.00	0.00	0.00	0	2
2027	October	Bobcat	4	65	2	0.36	0.11	1.37	0.90	0.05	0.04	189.17	0.00	0.00	0.00	0.00	0.00	0	1
2027	November	Bobcat	4	65		0.36	0.11	1.37	0.90	0.05	0.04	189.17	-	-	-	-	-	-	-
2027	December	Bobcat	4	65	2	0.36	0.11	1.37	0.90	0.05	0.04	189.17	0.00	0.00	0.00	0.00	0.00	0	1
2028	January	Bobcat	4	65		0.36	0.10	1.36	0.84	0.04	0.03	189.42	-	-	-	-	-	-	-
2028	February	Bobcat	4	65	28	0.36	0.10	1.36	0.84	0.04	0.03	189.42	0.00	0.00	0.00	0.00	0.00	0	12
2028	March	Bobcat	4	65	8	0.36	0.10	1.36	0.84	0.04	0.03	189.42	0.00	0.00	0.00	0.00	0.00	0	3
2028	April	Bobcat	4	65		0.36	0.10	1.36	0.84	0.04	0.03	189.42	-	-	-	-	-	-	-
2028	May	Bobcat	4	65	4	0.36	0.10	1.36	0.84	0.04	0.03	189.42	0.00	0.00	0.00	0.00	0.00	0	2
2028	June	Bobcat	4	65	2	0.36	0.10	1.36	0.84	0.04	0.03	189.42	0.00	0.00	0.00	0.00	0.00	0	1
2028	July	Bobcat	4	65		0.36	0.10	1.36	0.84	0.04	0.03	189.42	-	-	-	-	-	-	-
2028	August	Bobcat	4	65	26	0.36	0.10	1.36	0.84	0.04	0.03	189.42	0.00	0.00	0.00	0.00	0.00	0	11
2028	September	Bobcat	4	65	42	0.36	0.10	1.36	0.84	0.04	0.03	189.42	0.00	0.00	0.00	0.00	0.00	0	18
2028	October	Bobcat	4	65	46	0.36	0.10	1.36	0.84	0.04	0.03	189.42	0.00	0.00	0.00	0.00	0.00	0	20
2028	November	Bobcat	4	65	38	0.36	0.10	1.36	0.84	0.04	0.03	189.42	0.00	0.00	0.00	0.00	0.00	0	17
2028	December	Bobcat	4	65	40	0.36	0.10	1.36	0.84	0.04	0.03	189.42	0.00	0.00	0.00	0.00	0.00	0	17
2029	January	Bobcat	4	65	44	0.36	0.10	1.37	0.81	0.03	0.03	189.54	0.00	0.00	0.00	0.00	0.00	0	19
2029	February	Bobcat	4	65	56	0.36	0.10	1.37	0.81	0.03	0.03	189.54	0.00	0.00	0.00	0.00	0.00	0	24
2029	March	Bobcat	4	65	80	0.36	0.10	1.37	0.81	0.03	0.03	189.54	0.00	0.00	0.00	0.00	0.00	0	35
2029	April	Bobcat	4	65	30	0.36	0.10	1.37	0.81	0.03	0.03	189.54	0.00	0.00	0.00	0.00	0.00	0	13
2029	May	Bobcat	4	65		0.36	0.10	1.37	0.81	0.03	0.03	189.54	-	-	-	-	-	-	-
2029	June	Bobcat	4	65		0.36	0.10	1.37	0.81	0.03	0.03	189.54	-	-	-	-	-	-	-
2029	July	Bobcat	4	65	2	0.36	0.10	1.37	0.81	0.03	0.03	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2029	August	Bobcat	4	65	2	0.36	0.10	1.37	0.81	0.03	0.03	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2029	September	Bobcat	4	65	2	0.36	0.10	1.37	0.81	0.03	0.03	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2029	October	Bobcat	4	65	2	0.36	0.10	1.37	0.81	0.03	0.03	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2029	November	Bobcat	4	65	2	0.36	0.10	1.37	0.81	0.03	0.03	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2029	December	Bobcat	4	65		0.36	0.10	1.37	0.81	0.03	0.03	189.54	-	-	-	-	-	-	-
2030	January	Bobcat	4	65		0.36	0.10	1.37	0.78	0.03	0.03	189.54	-	-	-	-	-	-	-
2030	February	Bobcat	4	65		0.36	0.10	1.37	0.78	0.03	0.03	189.54	-	-	-	-	-	-	-
2030	March	Bobcat	4	65		0.36	0.10	1.37	0.78	0.03	0.03	189.54	-	-	-	-	-	-	-
2030	April	Bobcat	4	65		0.36	0.10	1.37	0.78	0.03	0.03	189.54	-	-	-	-	-	-	-
2030	May	Bobcat	4	65		0.36	0.10	1.37	0.78	0.03	0.03	189.54	-	-	-	-	-	-	-
2030	June	Bobcat	4	65		0.36	0.10	1.37	0.78	0.03	0.03	189.54	-	-	-	-	-	-	-
2030	July	Bobcat	4	65		0.36	0.10	1.37	0.78	0.03	0.03	189.54	-	-	-	-	-	-	-
2030	August	Bobcat	4	65	160	0.36	0.10	1.37	0.78	0.03	0.03	189.54	0.00	0.01	0.00	0.00	0.00	1	70
2030	September	Bobcat	4	65		0.36	0.10	1.37	0.78	0.03	0.03	189.54	-	-	-	-	-	-	-
2030	October	Bobcat	4	65		0.36	0.10	1.37	0.78	0.03	0.03	189.54	-	-	-	-	-	-	-
2035	January	Bobcat	4	65	0	0.36	0.08	1.36	0.67	0.02	0.02	189.54	-	-	-	-	-	-	-
2035	February	Bobcat	4	65	0	0.36	0.08	1.36	0.67	0.02	0.02	189.54	-	-	-	-	-	-	-
2035	March	Bobcat	4	65	0	0.36	0.08	1.36	0.67	0.02	0.02	189.54	-	-	-	-	-	-	-
2035	April	Bobcat	4	65	48	0.36	0.08	1.36	0.67	0.02	0.02	189.54	0.00	0.00	0.00	0.00	0.00	0	21
2035	May	Bobcat	4	65	4	0.36	0.08	1.36	0.67	0.02	0.02	189.54	0.00	0.00	0.00	0.00	0.00	0	2
2035	June	Bobcat	4	65	0	0.36	0.08	1.36	0.67	0.02	0.02	189.54	-	-	-	-	-	-	-
2035	July	Bobcat	4	65	4	0.36	0.08	1.36	0.67	0.02	0.02	189.54	0.00	0.00	0.00	0.00	0.00	0	2
2035	August	Bobcat	4	65	0	0.36	0.08	1.36	0.67	0.02	0.02	189.54	-	-	-	-	-	-	-
2035	September	Bobcat	4	65	4	0.36	0.08	1.36	0.67	0.02	0.02	189.54	0.00	0.00	0.00	0.00	0.00	0	2

2035	October	Bobcat	4	65	2	0.36	0.08	1.36	0.67	0.02	0.02	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2035	November	Bobcat	4	65	2	0.36	0.08	1.36	0.67	0.02	0.02	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2035	December	Bobcat	4	65	0	0.36	0.08	1.36	0.67	0.02	0.02	189.54	-	-	-	-	-	-	-
2036	January	Bobcat	4	65	0	0.36	0.08	1.36	0.65	0.02	0.02	189.54	-	-	-	-	-	-	-
2036	February	Bobcat	4	65	0	0.36	0.08	1.36	0.65	0.02	0.02	189.54	-	-	-	-	-	-	-
2036	March	Bobcat	4	65	0	0.36	0.08	1.36	0.65	0.02	0.02	189.54	-	-	-	-	-	-	-
2036	April	Bobcat	4	65	2	0.36	0.08	1.36	0.65	0.02	0.02	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2036	May	Bobcat	4	65	0	0.36	0.08	1.36	0.65	0.02	0.02	189.54	-	-	-	-	-	-	-
2036	June	Bobcat	4	65	4	0.36	0.08	1.36	0.65	0.02	0.02	189.54	0.00	0.00	0.00	0.00	0.00	0	2
2036	July	Bobcat	4	65	2	0.36	0.08	1.36	0.65	0.02	0.02	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2036	August	Bobcat	4	65	4	0.36	0.08	1.36	0.65	0.02	0.02	189.54	0.00	0.00	0.00	0.00	0.00	0	2
2036	September	Bobcat	4	65	22	0.36	0.08	1.36	0.65	0.02	0.02	189.54	0.00	0.00	0.00	0.00	0.00	0	10
2036	October	Bobcat	4	65	23	0.36	0.08	1.36	0.65	0.02	0.02	189.54	0.00	0.00	0.00	0.00	0.00	0	10
2036	November	Bobcat	4	65	7	0.36	0.08	1.36	0.65	0.02	0.02	189.54	0.00	0.00	0.00	0.00	0.00	0	3
2036	December	Bobcat	4	65	2	0.36	0.08	1.36	0.65	0.02	0.02	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2037	January	Bobcat	4	65	6	0.36	0.08	1.36	0.64	0.02	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	3
2037	February	Bobcat	4	65	2	0.36	0.08	1.36	0.64	0.02	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2037	March	Bobcat	4	65	0	0.36	0.08	1.36	0.64	0.02	0.01	189.54	-	-	-	-	-	-	-
2037	April	Bobcat	4	65	4	0.36	0.08	1.36	0.64	0.02	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	2
2037	May	Bobcat	4	65	4	0.36	0.08	1.36	0.64	0.02	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	2
2037	June	Bobcat	4	65	2	0.36	0.08	1.36	0.64	0.02	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2037	July	Bobcat	4	65	2	0.36	0.08	1.36	0.64	0.02	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2037	August	Bobcat	4	65	0	0.36	0.08	1.36	0.64	0.02	0.01	189.54	-	-	-	-	-	-	-
2037	September	Bobcat	4	65	2	0.36	0.08	1.36	0.64	0.02	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2037	October	Bobcat	4	65	2	0.36	0.08	1.36	0.64	0.02	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2037	November	Bobcat	4	65	2	0.36	0.08	1.36	0.64	0.02	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2037	December	Bobcat	4	65	0	0.36	0.08	1.36	0.64	0.02	0.01	189.54	-	-	-	-	-	-	-
2038	January	Bobcat	4	65	0	0.36	0.08	1.36	0.64	0.02	0.01	189.54	-	-	-	-	-	-	-
2038	February	Bobcat	4	65	0	0.36	0.08	1.36	0.64	0.02	0.01	189.54	-	-	-	-	-	-	-
2038	March	Bobcat	4	65	40	0.36	0.08	1.36	0.64	0.02	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	17
2038	April	Bobcat	4	65	0	0.36	0.08	1.36	0.64	0.02	0.01	189.54	-	-	-	-	-	-	-
2038	May	Bobcat	4	65	0	0.36	0.08	1.36	0.64	0.02	0.01	189.54	-	-	-	-	-	-	-
2038	June	Bobcat	4	65	0	0.36	0.08	1.36	0.64	0.02	0.01	189.54	-	-	-	-	-	-	-
2038	July	Bobcat	4	65	0	0.36	0.08	1.36	0.64	0.02	0.01	189.54	-	-	-	-	-	-	-
2038	August	Bobcat	4	65	0	0.36	0.08	1.36	0.64	0.02	0.01	189.54	-	-	-	-	-	-	-
2038	September	Bobcat	4	65	0	0.36	0.08	1.36	0.64	0.02	0.01	189.54	-	-	-	-	-	-	-

		2026	0.00	0.00	0.00	0.00	0.00	0.11	10
		2027	0.00	0.00	0.00	0.00	0.00	0.07	7
		2028	0.00	0.01	0.01	0.00	0.00	1.04	102
		2029	0.00	0.01	0.00	0.00	0.00	0.98	96
		2030	0.00	0.01	0.00	0.00	0.00	0.71	70
	Phase 1	0.00	0.02	0.01	0.00	0.00		2.90	286
		2035	0.00	0.00	0.00	0.00	0.00	0.28	28
		2036	0.00	0.00	0.00	0.00	0.00	0.29	29
		2037	0.00	0.00	0.00	0.00	0.00	0.12	11
		2038	0.00	0.00	0.00	0.00	0.00	0.18	17
	Phase 2	0.00	0.01	0.00	0.00	0.00		0.87	86
		ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel	
22 Days per Month	Days	Emissions (tons)							
	132	2026	0.00	0.01	0.01	0.00	0.00		
	264	2027	0.00	0.00	0.00	0.00	0.00		
10.15 kg/CO2/gal	264	2028	0.00	0.06	0.04	0.00	0.00		
	264	2029	0.00	0.06	0.03	0.00	0.00		
	220	2030	0.00	0.05	0.03	0.00	0.00		
	1144	Phase 1	0.00	0.04	0.02	0.00	0.00		
	264	2035	0.00	0.02	0.01	0.00	0.00		
	264	2036	0.00	0.02	0.01	0.00	0.00		
	264	2037	0.00	0.01	0.00	0.00	0.00		
	198	2038	0.00	0.01	0.01	0.00	0.00		
	792	Phase 2	0.00	0.02	0.01	0.00	0.00		
		Average Daily Emissions (pounds)							

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)		
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Backhoe	5	150		0.37	0.06	1.14	0.40	0.02	0.02	193.91	-	-	-	-	-	-	-
2026	August	Backhoe	5	150	48	0.37	0.06	1.14	0.40	0.02	0.02	193.91	0.00	0.00	0.00	0.00	0.00	1	51
2026	September	Backhoe	5	150		0.37	0.06	1.14	0.40	0.02	0.02	193.91	-	-	-	-	-	-	-
2026	October	Backhoe	5	150		0.37	0.06	1.14	0.40	0.02	0.02	193.91	-	-	-	-	-	-	-
2026	November	Backhoe	5	150		0.37	0.06	1.14	0.40	0.02	0.02	193.91	-	-	-	-	-	-	-
2026	December	Backhoe	5	150		0.37	0.06	1.14	0.40	0.02	0.02	193.91	-	-	-	-	-	-	-
2027	January	Backhoe	5	150		0.37	0.06	1.14	0.36	0.02	0.02	193.81	-	-	-	-	-	-	-
2027	February	Backhoe	5	150		0.37	0.06	1.14	0.36	0.02	0.02	193.81	-	-	-	-	-	-	-
2027	March	Backhoe	5	150		0.37	0.06	1.14	0.36	0.02	0.02	193.81	-	-	-	-	-	-	-
2027	April	Backhoe	5	150		0.37	0.06	1.14	0.36	0.02	0.02	193.81	-	-	-	-	-	-	-
2027	May	Backhoe	5	150		0.37	0.06	1.14	0.36	0.02	0.02	193.81	-	-	-	-	-	-	-
2027	June	Backhoe	5	150		0.37	0.06	1.14	0.36	0.02	0.02	193.81	-	-	-	-	-	-	-
2027	July	Backhoe	5	150		0.37	0.06	1.14	0.36	0.02	0.02	193.81	-	-	-	-	-	-	-
2027	August	Backhoe	5	150		0.37	0.06	1.14	0.36	0.02	0.02	193.81	-	-	-	-	-	-	-
2027	September	Backhoe	5	150		0.37	0.06	1.14	0.36	0.02	0.02	193.81	-	-	-	-	-	-	-
2027	October	Backhoe	5	150		0.37	0.06	1.14	0.36	0.02	0.02	193.81	-	-	-	-	-	-	-
2027	November	Backhoe	5	150		0.37	0.06	1.14	0.36	0.02	0.02	193.81	-	-	-	-	-	-	-
2027	December	Backhoe	5	150		0.37	0.06	1.14	0.36	0.02	0.02	193.81	-	-	-	-	-	-	-
2028	January	Backhoe	5	150		0.37	0.05	1.15	0.33	0.02	0.02	193.72	-	-	-	-	-	-	-
2028	February	Backhoe	5	150	80	0.37	0.05	1.15	0.33	0.02	0.02	193.72	0.00	0.01	0.00	0.00	0.00	1	85
2028	March	Backhoe	5	150		0.37	0.05	1.15	0.33	0.02	0.02	193.72	-	-	-	-	-	-	-
2028	April	Backhoe	5	150		0.37	0.05	1.15	0.33	0.02	0.02	193.72	-	-	-	-	-	-	-
2028	May	Backhoe	5	150		0.37	0.05	1.15	0.33	0.02	0.02	193.72	-	-	-	-	-	-	-
2028	June	Backhoe	5	150		0.37	0.05	1.15	0.33	0.02	0.02	193.72	-	-	-	-	-	-	-
2028	July	Backhoe	5	150		0.37	0.05	1.15	0.33	0.02	0.02	193.72	-	-	-	-	-	-	-
2028	August	Backhoe	5	150	120	0.37	0.05	1.15	0.33	0.02	0.02	193.72	0.00	0.01	0.00	0.00	0.00	1	127
2028	September	Backhoe	5	150	160	0.37	0.05	1.15	0.33	0.02	0.02	193.72	0.00	0.01	0.00	0.00	0.00	2	169
2028	October	Backhoe	5	150	176	0.37	0.05	1.15	0.33	0.02	0.02	193.72	0.00	0.01	0.00	0.00	0.00	2	186
2028	November	Backhoe	5	150	152	0.37	0.05	1.15	0.33	0.02	0.02	193.72	0.00	0.01	0.00	0.00	0.00	2	161
2028	December	Backhoe	5	150	152	0.37	0.05	1.15	0.33	0.02	0.02	193.72	0.00	0.01	0.00	0.00	0.00	2	161
2029	January	Backhoe	5	150	160	0.37	0.05	1.15	0.31	0.02	0.01	193.78	0.00	0.01	0.00	0.00	0.00	2	170
2029	February	Backhoe	5	150	152	0.37	0.05	1.15	0.31	0.02	0.01	193.78	0.00	0.01	0.00	0.00	0.00	2	161
2029	March	Backhoe	5	150	144	0.37	0.05	1.15	0.31	0.02	0.01	193.78	0.00	0.01	0.00	0.00	0.00	2	153
2029	April	Backhoe	5	150		0.37	0.05	1.15	0.31	0.02	0.01	193.78	-	-	-	-	-	-	-
2029	May	Backhoe	5	150		0.37	0.05	1.15	0.31	0.02	0.01	193.78	-	-	-	-	-	-	-
2029	June	Backhoe	5	150		0.37	0.05	1.15	0.31	0.02	0.01	193.78	-	-	-	-	-	-	-
2029	July	Backhoe	5	150		0.37	0.05	1.15	0.31	0.02	0.01	193.78	-	-	-	-	-	-	-
2029	August	Backhoe	5	150		0.37	0.05	1.15	0.31	0.02	0.01	193.78	-	-	-	-	-	-	-
2029	September	Backhoe	5	150		0.37	0.05	1.15	0.31	0.02	0.01	193.78	-	-	-	-	-	-	-
2029	October	Backhoe	5	150		0.37	0.05	1.15	0.31	0.02	0.01	193.78	-	-	-	-	-	-	-
2029	November	Backhoe	5	150		0.37	0.05	1.15	0.31	0.02	0.01	193.78	-	-	-	-	-	-	-
2029	December	Backhoe	5	150		0.37	0.05	1.15	0.31	0.02	0.01	193.78	-	-	-	-	-	-	-
2030	January	Backhoe	5	150		0.37	0.05	1.15	0.29	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	February	Backhoe	5	150		0.37	0.05	1.15	0.29	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	March	Backhoe	5	150		0.37	0.05	1.15	0.29	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	April	Backhoe	5	150		0.37	0.05	1.15	0.29	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	May	Backhoe	5	150		0.37	0.05	1.15	0.29	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	June	Backhoe	5	150		0.37	0.05	1.15	0.29	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	July	Backhoe	5	150		0.37	0.05	1.15	0.29	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	August	Backhoe	5	150		0.37	0.05	1.15	0.29	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	September	Backhoe	5	150		0.37	0.05	1.15	0.29	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	October	Backhoe	5	150		0.37	0.05	1.15	0.29	0.01	0.01	193.78	-	-	-	-	-	-	-

2035	January	Backhoe	5	150	0	0.37	0.05	1.15	0.23	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	February	Backhoe	5	150	16	0.37	0.05	1.15	0.23	0.01	0.01	193.78	0.00	0.00	0.00	0.00	0.00	0	17
2035	March	Backhoe	5	150	8	0.37	0.05	1.15	0.23	0.01	0.01	193.78	0.00	0.00	0.00	0.00	0.00	0	8
2035	April	Backhoe	5	150	0	0.37	0.05	1.15	0.23	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	May	Backhoe	5	150	0	0.37	0.05	1.15	0.23	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	June	Backhoe	5	150	0	0.37	0.05	1.15	0.23	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	July	Backhoe	5	150	0	0.37	0.05	1.15	0.23	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	August	Backhoe	5	150	0	0.37	0.05	1.15	0.23	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	September	Backhoe	5	150	0	0.37	0.05	1.15	0.23	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	October	Backhoe	5	150	0	0.37	0.05	1.15	0.23	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	November	Backhoe	5	150	0	0.37	0.05	1.15	0.23	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	December	Backhoe	5	150	0	0.37	0.05	1.15	0.23	0.01	0.01	193.78	-	-	-	-	-	-	-
2036	January	Backhoe	5	150	0	0.37	0.05	1.15	0.22	0.01	0.01	193.78	-	-	-	-	-	-	-
2036	February	Backhoe	5	150	16	0.37	0.05	1.15	0.22	0.01	0.01	193.78	0.00	0.00	0.00	0.00	0.00	0	17
2036	March	Backhoe	5	150	0	0.37	0.05	1.15	0.22	0.01	0.01	193.78	-	-	-	-	-	-	-
2036	April	Backhoe	5	150	0	0.37	0.05	1.15	0.22	0.01	0.01	193.78	-	-	-	-	-	-	-
2036	May	Backhoe	5	150	0	0.37	0.05	1.15	0.22	0.01	0.01	193.78	-	-	-	-	-	-	-
2036	June	Backhoe	5	150	0	0.37	0.05	1.15	0.22	0.01	0.01	193.78	-	-	-	-	-	-	-
2036	July	Backhoe	5	150	0	0.37	0.05	1.15	0.22	0.01	0.01	193.78	-	-	-	-	-	-	-
2036	August	Backhoe	5	150	8	0.37	0.05	1.15	0.22	0.01	0.01	193.78	0.00	0.00	0.00	0.00	0.00	0	8
2036	September	Backhoe	5	150	88	0.37	0.05	1.15	0.22	0.01	0.01	193.78	0.00	0.01	0.00	0.00	0.00	1	93
2036	October	Backhoe	5	150	92	0.37	0.05	1.15	0.22	0.01	0.01	193.78	0.00	0.01	0.00	0.00	0.00	1	97
2036	November	Backhoe	5	150	12	0.37	0.05	1.15	0.22	0.01	0.01	193.78	0.00	0.00	0.00	0.00	0.00	0	13
2036	December	Backhoe	5	150	0	0.37	0.05	1.15	0.22	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	January	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	February	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	March	Backhoe	5	150	8	0.37	0.05	1.15	0.21	0.01	0.01	193.78	0.00	0.00	0.00	0.00	0.00	0	8
2037	April	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	May	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	June	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	July	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	August	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	September	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	October	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	November	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	December	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2038	January	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2038	February	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2038	March	Backhoe	5	150	40	0.37	0.05	1.15	0.21	0.01	0.01	193.78	0.00	0.00	0.00	0.00	0.00	0	42
2038	April	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2038	May	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2038	June	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2038	July	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2038	August	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-
2038	September	Backhoe	5	150	0	0.37	0.05	1.15	0.21	0.01	0.01	193.78	-	-	-	-	-	-	-

Phase 1	2026	0.00	0.00	0.00	0.00	0.00	0.52	51
	2027	-	-	-	-	-		
	2028	0.00	0.06	0.02	0.00	0.00		
	2029	0.00	0.03	0.01	0.00	0.00		
	2030	-	-	-	-	-		
Phase 2	2035	0.00	0.00	0.00	0.00	0.00	14.45	1,424
	2036	0.00	0.02	0.00	0.00	0.00		
	2037	0.00	0.00	0.00	0.00	0.00		
	2038	0.00	0.00	0.00	0.00	0.00		
	2040	0.00	0.02	0.00	0.00	0.00		
Days	ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel	
	Emissions (tons)							
132	2026	0.00	0.05	0.02	0.00	0.00	264	264
264	2027	-	-	-	-	-		
264	2028	0.02	0.45	0.13	0.01	0.01		
264	2029	0.01	0.24	0.07	0.00	0.00		
220	2030	-	-	-	-	-		
1144	Phase 1	0.01	0.17	0.05	0.00	0.00	264	264
264	2035	0.00	0.01	0.00	0.00	0.00		
264	2036	0.00	0.11	0.02	0.00	0.00		
264	2037	0.00	0.00	0.00	0.00	0.00		
198	2038	0.00	0.03	0.01	0.00	0.00		
792	Phase 2	0.00	0.05	0.01	0.00	0.00	Average Daily Emissions (pounds)	

		Offroad Construction Equipment Emissions - Unmitigated																	
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)		
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Excavator	6	400		0.38	0.04	0.40	0.26	0.01	0.01	201.32	-	-	-	-	-	-	-
2026	August	Excavator	6	400		0.38	0.04	0.40	0.26	0.01	0.01	201.32	-	-	-	-	-	-	-
2026	September	Excavator	6	400	40	0.38	0.04	0.40	0.26	0.01	0.01	201.32	0.00	0.00	0.00	0.00	0.00	1	121
2026	October	Excavator	6	400		0.38	0.04	0.40	0.26	0.01	0.01	201.32	-	-	-	-	-	-	-
2026	November	Excavator	6	400	16	0.38	0.04	0.40	0.26	0.01	0.01	201.32	0.00	0.00	0.00	0.00	0.00	0	48
2026	December	Excavator	6	400	176	0.38	0.04	0.40	0.26	0.01	0.01	201.32	0.00	0.01	0.01	0.00	0.00	5	531
2027	January	Excavator	6	400	152	0.38	0.04	0.40	0.24	0.01	0.01	201.27	0.00	0.01	0.01	0.00	0.00	5	458
2027	February	Excavator	6	400	152	0.38	0.04	0.40	0.24	0.01	0.01	201.27	0.00	0.01	0.01	0.00	0.00	5	458
2027	March	Excavator	6	400	144	0.38	0.04	0.40	0.24	0.01	0.01	201.27	0.00	0.01	0.01	0.00	0.00	4	434
2027	April	Excavator	6	400		0.38	0.04	0.40	0.24	0.01	0.01	201.27	-	-	-	-	-	-	-
2027	May	Excavator	6	400		0.38	0.04	0.40	0.24	0.01	0.01	201.27	-	-	-	-	-	-	-
2027	June	Excavator	6	400		0.38	0.04	0.40	0.24	0.01	0.01	201.27	-	-	-	-	-	-	-
2027	July	Excavator	6	400		0.38	0.04	0.40	0.24	0.01	0.01	201.27	-	-	-	-	-	-	-
2027	August	Excavator	6	400	64	0.38	0.04	0.40	0.24	0.01	0.01	201.27	0.00	0.00	0.00	0.00	0.00	2	193
2027	September	Excavator	6	400	168	0.38	0.04	0.40	0.24	0.01	0.01	201.27	0.00	0.01	0.01	0.00	0.00	5	506
2027	October	Excavator	6	400	168	0.38	0.04	0.40	0.24	0.01	0.01	201.27	0.00	0.01	0.01	0.00	0.00	5	506
2027	November	Excavator	6	400	192	0.38	0.04	0.40	0.24	0.01	0.01	201.27	0.00	0.01	0.01	0.00	0.00	6	579
2027	December	Excavator	6	400	336	0.38	0.04	0.40	0.24	0.01	0.01	201.27	0.00	0.02	0.01	0.00	0.00	10	1,013
2028	January	Excavator	6	400	168	0.38	0.04	0.40	0.22	0.01	0.01	201.28	0.00	0.01	0.01	0.00	0.00	5	506
2028	February	Excavator	6	400	160	0.38	0.04	0.40	0.22	0.01	0.01	201.28	0.00	0.01	0.01	0.00	0.00	5	482
2028	March	Excavator	6	400		0.38	0.04	0.40	0.22	0.01	0.01	201.28	-	-	-	-	-	-	-
2028	April	Excavator	6	400		0.38	0.04	0.40	0.22	0.01	0.01	201.28	-	-	-	-	-	-	-
2028	May	Excavator	6	400		0.38	0.04	0.40	0.22	0.01	0.01	201.28	-	-	-	-	-	-	-
2028	June	Excavator	6	400	56	0.38	0.04	0.40	0.22	0.01	0.01	201.28	0.00	0.00	0.00	0.00	0.00	2	169
2028	July	Excavator	6	400	152	0.38	0.04	0.40	0.22	0.01	0.01	201.28	0.00	0.01	0.01	0.00	0.00	5	458
2028	August	Excavator	6	400	200	0.38	0.04	0.40	0.22	0.01	0.01	201.28	0.00	0.01	0.01	0.00	0.00	6	603
2028	September	Excavator	6	400	160	0.38	0.04	0.40	0.22	0.01	0.01	201.28	0.00	0.01	0.01	0.00	0.00	5	482
2028	October	Excavator	6	400	176	0.38	0.04	0.40	0.22	0.01	0.01	201.28	0.00	0.01	0.01	0.00	0.00	5	530
2028	November	Excavator	6	400		0.38	0.04	0.40	0.22	0.01	0.01	201.28	-	-	-	-	-	-	-
2028	December	Excavator	6	400	72	0.38	0.04	0.40	0.22	0.01	0.01	201.28	0.00	0.00	0.00	0.00	0.00	2	217
2029	January	Excavator	6	400	160	0.38	0.04	0.40	0.21	0.01	0.01	201.38	0.00	0.01	0.01	0.00	0.00	5	483
2029	February	Excavator	6	400	86	0.38	0.04	0.40	0.21	0.01	0.01	201.38	0.00	0.01	0.00	0.00	0.00	3	259
2029	March	Excavator	6	400	104	0.38	0.04	0.40	0.21	0.01	0.01	201.38	0.00	0.01	0.00	0.00	0.00	3	314
2029	April	Excavator	6	400	200	0.38	0.04	0.40	0.21	0.01	0.01	201.38	0.00	0.01	0.01	0.00	0.00	6	603
2029	May	Excavator	6	400	176	0.38	0.04	0.40	0.21	0.01	0.01	201.38	0.00	0.01	0.01	0.00	0.00	5	531
2029	June	Excavator	6	400	216	0.38	0.04	0.40	0.21	0.01	0.01	201.38	0.00	0.01	0.01	0.00	0.00	7	651
2029	July	Excavator	6	400	432	0.38	0.04	0.40	0.21	0.01	0.01	201.38	0.00	0.03	0.02	0.00	0.00	13	1,303
2029	August	Excavator	6	400	184	0.38	0.04	0.40	0.21	0.01	0.01	201.38	0.00	0.01	0.01	0.00	0.00	6	555
2029	September	Excavator	6	400	152	0.38	0.04	0.40	0.21	0.01	0.01	201.38	0.00	0.01	0.01	0.00	0.00	5	458
2029	October	Excavator	6	400	176	0.38	0.04	0.40	0.21	0.01	0.01	201.38	0.00	0.01	0.01	0.00	0.00	5	531
2029	November	Excavator	6	400	56	0.38	0.04	0.40	0.21	0.01	0.01	201.38	0.00	0.00	0.00	0.00	0.00	2	169
2029	December	Excavator	6	400		0.38	0.04	0.40	0.21	0.01	0.01	201.38	-	-	-	-	-	-	-
2030	January	Excavator	6	400		0.38	0.04	0.40	0.20	0.01	0.01	201.38	-	-	-	-	-	-	-
2030	February	Excavator	6	400		0.38	0.04	0.40	0.20	0.01	0.01	201.38	-	-	-	-	-	-	-
2030	March	Excavator	6	400		0.38	0.04	0.40	0.20	0.01	0.01	201.38	-	-	-	-	-	-	-
2030	April	Excavator	6	400		0.38	0.04	0.40	0.20	0.01	0.01	201.38	-	-	-	-	-	-	-
2030	May	Excavator	6	400		0.38	0.04	0.40	0.20	0.01	0.01	201.38	-	-	-	-	-	-	-
2030	June	Excavator	6	400	56	0.38	0.04	0.40	0.20	0.01	0.01	201.38	0.00	0.00	0.00	0.00	0.00	2	169
2030	July	Excavator	6	400	24	0.38	0.04	0.40	0.20	0.01	0.01	201.38	0.00	0.00	0.00	0.00	0.00	1	72
2030	August	Excavator	6	400	160	0.38	0.04	0.40	0.20	0.01	0.01	201.38	0.00	0.01	0.01	0.00	0.00	5	483
2030	September	Excavator	6	400		0.38	0.04	0.40	0.20	0.01	0.01	201.38	-	-	-	-	-	-	-
2030	October	Excavator	6	400		0.38	0.04	0.40	0.20	0.01	0.01	201.38	-	-	-	-	-	-	-

2035	January	Excavator	6	400	0	0.38	0.04	0.39	0.16	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	February	Excavator	6	400	0	0.38	0.04	0.39	0.16	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	March	Excavator	6	400	0	0.38	0.04	0.39	0.16	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	April	Excavator	6	400	48	0.38	0.04	0.39	0.16	0.01	0.01	201.38	0.00	0.00	0.00	0.00	0.00	1	145
2035	May	Excavator	6	400	0	0.38	0.04	0.39	0.16	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	June	Excavator	6	400	0	0.38	0.04	0.39	0.16	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	July	Excavator	6	400	0	0.38	0.04	0.39	0.16	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	August	Excavator	6	400	0	0.38	0.04	0.39	0.16	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	September	Excavator	6	400	0	0.38	0.04	0.39	0.16	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	October	Excavator	6	400	0	0.38	0.04	0.39	0.16	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	November	Excavator	6	400	0	0.38	0.04	0.39	0.16	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	December	Excavator	6	400	0	0.38	0.04	0.39	0.16	0.01	0.01	201.38	-	-	-	-	-	-	-
2036	January	Excavator	6	400	0	0.38	0.04	0.39	0.15	0.01	0.00	201.38	-	-	-	-	-	-	-
2036	February	Excavator	6	400	96	0.38	0.04	0.39	0.15	0.01	0.00	201.38	0.00	0.01	0.00	0.00	0.00	3	290
2036	March	Excavator	6	400	32	0.38	0.04	0.39	0.15	0.01	0.00	201.38	0.00	0.00	0.00	0.00	0.00	1	97
2036	April	Excavator	6	400	0	0.38	0.04	0.39	0.15	0.01	0.00	201.38	-	-	-	-	-	-	-
2036	May	Excavator	6	400	0	0.38	0.04	0.39	0.15	0.01	0.00	201.38	-	-	-	-	-	-	-
2036	June	Excavator	6	400	40	0.38	0.04	0.39	0.15	0.01	0.00	201.38	0.00	0.00	0.00	0.00	0.00	1	121
2036	July	Excavator	6	400	176	0.38	0.04	0.39	0.15	0.01	0.00	201.38	0.00	0.01	0.00	0.00	0.00	5	531
2036	August	Excavator	6	400	128	0.38	0.04	0.39	0.15	0.01	0.00	201.38	0.00	0.01	0.00	0.00	0.00	4	386
2036	September	Excavator	6	400	168	0.38	0.04	0.39	0.15	0.01	0.00	201.38	0.00	0.01	0.00	0.00	0.00	5	507
2036	October	Excavator	6	400	88	0.38	0.04	0.39	0.15	0.01	0.00	201.38	0.00	0.01	0.00	0.00	0.00	3	265
2036	November	Excavator	6	400	0	0.38	0.04	0.39	0.15	0.01	0.00	201.38	-	-	-	-	-	-	-
2036	December	Excavator	6	400	8	0.38	0.04	0.39	0.15	0.01	0.00	201.38	0.00	0.00	0.00	0.00	0.00	0	24
2037	January	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-
2037	February	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-
2037	March	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-
2037	April	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-
2037	May	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-
2037	June	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-
2037	July	Excavator	6	400	48	0.38	0.04	0.39	0.14	0.01	0.00	201.38	0.00	0.00	0.00	0.00	0.00	1	145
2037	August	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-
2037	September	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-
2037	October	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-
2037	November	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-
2037	December	Excavator	6	400	48	0.38	0.04	0.39	0.14	0.01	0.00	201.38	0.00	0.00	0.00	0.00	0.00	1	145
2038	January	Excavator	6	400	168	0.38	0.04	0.39	0.14	0.01	0.00	201.38	0.00	0.01	0.00	0.00	0.00	5	507
2038	February	Excavator	6	400	144	0.38	0.04	0.39	0.14	0.01	0.00	201.38	0.00	0.01	0.00	0.00	0.00	4	434
2038	March	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-
2038	April	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-
2038	May	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-
2038	June	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-
2038	July	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-
2038	August	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-
2038	September	Excavator	6	400	0	0.38	0.04	0.39	0.14	0.01	0.00	201.38	-	-	-	-	-	-	-

Phase 1	2026	0.00	0.02	0.01	0.00	0.00	7.10	699
	2027	0.01	0.09	0.05	0.00	0.00	42.10	4,147
	2028	0.01	0.08	0.04	0.00	0.00	35.00	3,448
	2029	0.01	0.13	0.07	0.00	0.00	59.44	5,856
	2030	0.00	0.02	0.01	0.00	0.00	7.35	724
		0.03	0.33	0.18	0.01	0.01	150.98	14,875
Phase 2	2035	0.00	0.00	0.00	0.00	0.00	1.47	145
	2036	0.00	0.05	0.02	0.00	0.00	22.53	2,220
	2037	0.00	0.01	0.00	0.00	0.00	2.94	290
	2038	0.00	0.02	0.01	0.00	0.00	9.55	941
		0.01	0.08	0.03	0.00	0.00	36.49	3,595
	ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gas	Diesel

22 Days per Month

10.15 kg/CO₂/gal

Days		Emissions (tons)				
132	2026	0.03	0.23	0.15	0.01	0.00
264	2027	0.07	0.69	0.41	0.01	0.01
264	2028	0.06	0.58	0.32	0.01	0.01
264	2029	0.10	0.98	0.52	0.02	0.02
220	2030	0.01	0.15	0.07	0.00	0.00
1144	Phase 1	0.06	0.57	0.32	0.01	0.01

264	2035	0.00	0.02	0.01	0.00	0.00
264	2036	0.04	0.37	0.14	0.00	0.00
264	2037	0.00	0.05	0.02	0.00	0.00
198	2038	0.02	0.21	0.07	0.00	0.00
792	Phase 2	0.02	0.20	0.07	0.00	0.00

Average Daily Emissions (pounds)

			Offroad Construction Equipment Emissions - Unmitigated																
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)		
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10			PM2.5
2026	July	D3 Dozer	7	150		0.40	0.17	1.41	1.47	0.09	0.08	208.73	-	-	-	-	-	-	-
2026	August	D3 Dozer	7	150		0.40	0.17	1.41	1.47	0.09	0.08	208.73	-	-	-	-	-	-	-
2026	September	D3 Dozer	7	150		0.40	0.17	1.41	1.47	0.09	0.08	208.73	-	-	-	-	-	-	-
2026	October	D3 Dozer	7	150		0.40	0.17	1.41	1.47	0.09	0.08	208.73	-	-	-	-	-	-	-
2026	November	D3 Dozer	7	150	32	0.40	0.17	1.41	1.47	0.09	0.08	208.73	0.00	0.00	0.00	0.00	0.00	0	39
2026	December	D3 Dozer	7	150	320	0.40	0.17	1.41	1.47	0.09	0.08	208.73	0.00	0.03	0.03	0.00	0.00	4	395
2027	January	D3 Dozer	7	150	280	0.40	0.16	1.41	1.34	0.08	0.07	208.62	0.00	0.03	0.02	0.00	0.00	4	345
2027	February	D3 Dozer	7	150	152	0.40	0.16	1.41	1.34	0.08	0.07	208.62	0.00	0.01	0.01	0.00	0.00	2	187
2027	March	D3 Dozer	7	150	144	0.40	0.16	1.41	1.34	0.08	0.07	208.62	0.00	0.01	0.01	0.00	0.00	2	178
2027	April	D3 Dozer	7	150		0.40	0.16	1.41	1.34	0.08	0.07	208.62	-	-	-	-	-	-	-
2027	May	D3 Dozer	7	150		0.40	0.16	1.41	1.34	0.08	0.07	208.62	-	-	-	-	-	-	-
2027	June	D3 Dozer	7	150		0.40	0.16	1.41	1.34	0.08	0.07	208.62	-	-	-	-	-	-	-
2027	July	D3 Dozer	7	150		0.40	0.16	1.41	1.34	0.08	0.07	208.62	-	-	-	-	-	-	-
2027	August	D3 Dozer	7	150		0.40	0.16	1.41	1.34	0.08	0.07	208.62	-	-	-	-	-	-	-
2027	September	D3 Dozer	7	150		0.40	0.16	1.41	1.34	0.08	0.07	208.62	-	-	-	-	-	-	-
2027	October	D3 Dozer	7	150		0.40	0.16	1.41	1.34	0.08	0.07	208.62	-	-	-	-	-	-	-
2027	November	D3 Dozer	7	150		0.40	0.16	1.41	1.34	0.08	0.07	208.62	-	-	-	-	-	-	-
2027	December	D3 Dozer	7	150		0.40	0.16	1.41	1.34	0.08	0.07	208.62	-	-	-	-	-	-	-
2028	January	D3 Dozer	7	150		0.40	0.13	1.40	1.02	0.06	0.05	208.87	-	-	-	-	-	-	-
2028	February	D3 Dozer	7	150		0.40	0.13	1.40	1.02	0.06	0.05	208.87	-	-	-	-	-	-	-
2028	March	D3 Dozer	7	150		0.40	0.13	1.40	1.02	0.06	0.05	208.87	-	-	-	-	-	-	-
2028	April	D3 Dozer	7	150		0.40	0.13	1.40	1.02	0.06	0.05	208.87	-	-	-	-	-	-	-
2028	May	D3 Dozer	7	150		0.40	0.13	1.40	1.02	0.06	0.05	208.87	-	-	-	-	-	-	-
2028	June	D3 Dozer	7	150		0.40	0.13	1.40	1.02	0.06	0.05	208.87	-	-	-	-	-	-	-
2028	July	D3 Dozer	7	150		0.40	0.13	1.40	1.02	0.06	0.05	208.87	-	-	-	-	-	-	-
2028	August	D3 Dozer	7	150	16	0.40	0.13	1.40	1.02	0.06	0.05	208.87	0.00	0.00	0.00	0.00	0.00	0	20
2028	September	D3 Dozer	7	150		0.40	0.13	1.40	1.02	0.06	0.05	208.87	-	-	-	-	-	-	-
2028	October	D3 Dozer	7	150		0.40	0.13	1.40	1.02	0.06	0.05	208.87	-	-	-	-	-	-	-
2028	November	D3 Dozer	7	150		0.40	0.13	1.40	1.02	0.06	0.05	208.87	-	-	-	-	-	-	-
2028	December	D3 Dozer	7	150		0.40	0.13	1.40	1.02	0.06	0.05	208.87	-	-	-	-	-	-	-
2029	January	D3 Dozer	7	150		0.40	0.12	1.40	0.93	0.05	0.05	208.66	-	-	-	-	-	-	-
2029	February	D3 Dozer	7	150		0.40	0.12	1.40	0.93	0.05	0.05	208.66	-	-	-	-	-	-	-
2029	March	D3 Dozer	7	150		0.40	0.12	1.40	0.93	0.05	0.05	208.66	-	-	-	-	-	-	-
2029	April	D3 Dozer	7	150		0.40	0.12	1.40	0.93	0.05	0.05	208.66	-	-	-	-	-	-	-
2029	May	D3 Dozer	7	150		0.40	0.12	1.40	0.93	0.05	0.05	208.66	-	-	-	-	-	-	-
2029	June	D3 Dozer	7	150		0.40	0.12	1.40	0.93	0.05	0.05	208.66	-	-	-	-	-	-	-
2029	July	D3 Dozer	7	150	40	0.40	0.12	1.40	0.93	0.05	0.05	208.66	0.00	0.00	0.00	0.00	0.00	1	49
2029	August	D3 Dozer	7	150	120	0.40	0.12	1.40	0.93	0.05	0.05	208.66	0.00	0.01	0.01	0.00	0.00	2	148
2029	September	D3 Dozer	7	150		0.40	0.12	1.40	0.93	0.05	0.05	208.66	-	-	-	-	-	-	-
2029	October	D3 Dozer	7	150		0.40	0.12	1.40	0.93	0.05	0.05	208.66	-	-	-	-	-	-	-
2029	November	D3 Dozer	7	150		0.40	0.12	1.40	0.93	0.05	0.05	208.66	-	-	-	-	-	-	-
2029	December	D3 Dozer	7	150		0.40	0.12	1.40	0.93	0.05	0.05	208.66	-	-	-	-	-	-	-
2030	January	D3 Dozer	7	150		0.40	0.12	1.40	0.84	0.05	0.05	208.66	-	-	-	-	-	-	-
2030	February	D3 Dozer	7	150		0.40	0.12	1.40	0.84	0.05	0.05	208.66	-	-	-	-	-	-	-
2030	March	D3 Dozer	7	150		0.40	0.12	1.40	0.84	0.05	0.05	208.66	-	-	-	-	-	-	-
2030	April	D3 Dozer	7	150		0.40	0.12	1.40	0.84	0.05	0.05	208.66	-	-	-	-	-	-	-
2030	May	D3 Dozer	7	150		0.40	0.12	1.40	0.84	0.05	0.05	208.66	-	-	-	-	-	-	-
2030	June	D3 Dozer	7	150		0.40	0.12	1.40	0.84	0.05	0.05	208.66	-	-	-	-	-	-	-
2030	July	D3 Dozer	7	150		0.40	0.12	1.40	0.84	0.05	0.05	208.66	-	-	-	-	-	-	-
2030	August	D3 Dozer	7	150		0.40	0.12	1.40	0.84	0.05	0.05	208.66	-	-	-	-	-	-	-
2030	September	D3 Dozer	7	150		0.40	0.12	1.40	0.84	0.05	0.05	208.66	-	-	-	-	-	-	-
2030	October	D3 Dozer	7	150		0.40	0.12	1.40	0.84	0.05	0.05	208.66	-	-	-	-	-	-	-

2035	January	D3 Dozer	7	150	0	0.40	0.11	1.39	0.69	0.04	0.04	208.66	-	-	-	-	-	-	-
2035	February	D3 Dozer	7	150	0	0.40	0.11	1.39	0.69	0.04	0.04	208.66	-	-	-	-	-	-	-
2035	March	D3 Dozer	7	150	0	0.40	0.11	1.39	0.69	0.04	0.04	208.66	-	-	-	-	-	-	-
2035	April	D3 Dozer	7	150	0	0.40	0.11	1.39	0.69	0.04	0.04	208.66	-	-	-	-	-	-	-
2035	May	D3 Dozer	7	150	0	0.40	0.11	1.39	0.69	0.04	0.04	208.66	-	-	-	-	-	-	-
2035	June	D3 Dozer	7	150	0	0.40	0.11	1.39	0.69	0.04	0.04	208.66	-	-	-	-	-	-	-
2035	July	D3 Dozer	7	150	0	0.40	0.11	1.39	0.69	0.04	0.04	208.66	-	-	-	-	-	-	-
2035	August	D3 Dozer	7	150	0	0.40	0.11	1.39	0.69	0.04	0.04	208.66	-	-	-	-	-	-	-
2035	September	D3 Dozer	7	150	0	0.40	0.11	1.39	0.69	0.04	0.04	208.66	-	-	-	-	-	-	-
2035	October	D3 Dozer	7	150	0	0.40	0.11	1.39	0.69	0.04	0.04	208.66	-	-	-	-	-	-	-
2035	November	D3 Dozer	7	150	0	0.40	0.11	1.39	0.69	0.04	0.04	208.66	-	-	-	-	-	-	-
2035	December	D3 Dozer	7	150	0	0.40	0.11	1.39	0.69	0.04	0.04	208.66	-	-	-	-	-	-	-
2036	January	D3 Dozer	7	150	0	0.40	0.10	1.39	0.67	0.03	0.03	208.66	-	-	-	-	-	-	-
2036	February	D3 Dozer	7	150	0	0.40	0.10	1.39	0.67	0.03	0.03	208.66	-	-	-	-	-	-	-
2036	March	D3 Dozer	7	150	0	0.40	0.10	1.39	0.67	0.03	0.03	208.66	-	-	-	-	-	-	-
2036	April	D3 Dozer	7	150	0	0.40	0.10	1.39	0.67	0.03	0.03	208.66	-	-	-	-	-	-	-
2036	May	D3 Dozer	7	150	0	0.40	0.10	1.39	0.67	0.03	0.03	208.66	-	-	-	-	-	-	-
2036	June	D3 Dozer	7	150	0	0.40	0.10	1.39	0.67	0.03	0.03	208.66	-	-	-	-	-	-	-
2036	July	D3 Dozer	7	150	0	0.40	0.10	1.39	0.67	0.03	0.03	208.66	-	-	-	-	-	-	-
2036	August	D3 Dozer	7	150	0	0.40	0.10	1.39	0.67	0.03	0.03	208.66	-	-	-	-	-	-	-
2036	September	D3 Dozer	7	150	0	0.40	0.10	1.39	0.67	0.03	0.03	208.66	-	-	-	-	-	-	-
2036	October	D3 Dozer	7	150	0	0.40	0.10	1.39	0.67	0.03	0.03	208.66	-	-	-	-	-	-	-
2036	November	D3 Dozer	7	150	0	0.40	0.10	1.39	0.67	0.03	0.03	208.66	-	-	-	-	-	-	-
2036	December	D3 Dozer	7	150	0	0.40	0.10	1.39	0.67	0.03	0.03	208.66	-	-	-	-	-	-	-
2037	January	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2037	February	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2037	March	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2037	April	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2037	May	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2037	June	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2037	July	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2037	August	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2037	September	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2037	October	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2037	November	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2037	December	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2038	January	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2038	February	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2038	March	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2038	April	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2038	May	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2038	June	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2038	July	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2038	August	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-
2038	September	D3 Dozer	7	150	0	0.40	0.10	1.39	0.65	0.03	0.03	208.66	-	-	-	-	-	-	-

22 Days per Month	10.15 kg/CO2/gal	2026	0.00	0.03	0.03	0.00	0.00	4.41	434
		2027	0.01	0.05	0.05	0.00	0.00	7.21	710
		2028	0.00	0.00	0.00	0.00	0.00	0.20	20
		2029	0.00	0.01	0.01	0.00	0.00	2.00	197
		2030	-	-	-	-	-	-	-
		Phase 1	0.01	0.10	0.10	0.01	0.01	13.82	1,362
		2035	-	-	-	-	-	-	-
		2036	-	-	-	-	-	-	-
		2037	-	-	-	-	-	-	-
		2038	-	-	-	-	-	-	-
Days	Emissions (tons)	Phase 2	-	-	-	-	-	-	-
		ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel	
		132	2026	0.06	0.50	0.52	0.03	0.03	
		264	2027	0.05	0.41	0.39	0.02	0.02	
		264	2028	0.00	0.01	0.01	0.00	0.00	
		264	2029	0.01	0.11	0.07	0.00	0.00	
		220	2030	-	-	-	-	-	
		1144	Phase 1	0.02	0.18	0.17	0.01	0.01	
		264	2035	-	-	-	-	-	
		264	2036	-	-	-	-	-	
Average Daily Emissions (pounds)		264	2037	-	-	-	-	-	
		198	2038	-	-	-	-	-	
		792	Phase 2	-	-	-	-	-	

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2
2026	July	Loader	8	250		0.36	0.06	0.42	0.48	0.02	0.01	190.52	-	-	-	-	-	-
2026	August	Loader	8	250		0.36	0.06	0.42	0.48	0.02	0.01	190.52	-	-	-	-	-	-
2026	September	Loader	8	250		0.36	0.06	0.42	0.48	0.02	0.01	190.52	-	-	-	-	-	-
2026	October	Loader	8	250		0.36	0.06	0.42	0.48	0.02	0.01	190.52	-	-	-	-	-	-
2026	November	Loader	8	250	16	0.36	0.06	0.42	0.48	0.02	0.01	190.52	0.00	0.00	0.00	0.00	0.00	0
2026	December	Loader	8	250	174	0.36	0.06	0.42	0.48	0.02	0.01	190.52	0.00	0.01	0.01	0.00	0.00	3
2027	January	Loader	8	250	152	0.36	0.06	0.42	0.39	0.01	0.01	190.55	0.00	0.01	0.01	0.00	0.00	3
2027	February	Loader	8	250	152	0.36	0.06	0.42	0.39	0.01	0.01	190.55	0.00	0.01	0.01	0.00	0.00	3
2027	March	Loader	8	250	176	0.36	0.06	0.42	0.39	0.01	0.01	190.55	0.00	0.01	0.01	0.00	0.00	3
2027	April	Loader	8	250	56	0.36	0.06	0.42	0.39	0.01	0.01	190.55	0.00	0.00	0.00	0.00	0.00	1
2027	May	Loader	8	250		0.36	0.06	0.42	0.39	0.01	0.01	190.55	-	-	-	-	-	-
2027	June	Loader	8	250		0.36	0.06	0.42	0.39	0.01	0.01	190.55	-	-	-	-	-	-
2027	July	Loader	8	250		0.36	0.06	0.42	0.39	0.01	0.01	190.55	-	-	-	-	-	-
2027	August	Loader	8	250		0.36	0.06	0.42	0.39	0.01	0.01	190.55	-	-	-	-	-	-
2027	September	Loader	8	250		0.36	0.06	0.42	0.39	0.01	0.01	190.55	-	-	-	-	-	-
2027	October	Loader	8	250		0.36	0.06	0.42	0.39	0.01	0.01	190.55	-	-	-	-	-	-
2027	November	Loader	8	250		0.36	0.06	0.42	0.39	0.01	0.01	190.55	-	-	-	-	-	-
2027	December	Loader	8	250		0.36	0.06	0.42	0.39	0.01	0.01	190.55	-	-	-	-	-	-
2028	January	Loader	8	250	56	0.36	0.06	0.42	0.35	0.01	0.01	190.59	0.00	0.00	0.00	0.00	0.00	1
2028	February	Loader	8	250	40	0.36	0.06	0.42	0.35	0.01	0.01	190.59	0.00	0.00	0.00	0.00	0.00	1
2028	March	Loader	8	250		0.36	0.06	0.42	0.35	0.01	0.01	190.59	-	-	-	-	-	-
2028	April	Loader	8	250		0.36	0.06	0.42	0.35	0.01	0.01	190.59	-	-	-	-	-	-
2028	May	Loader	8	250		0.36	0.06	0.42	0.35	0.01	0.01	190.59	-	-	-	-	-	-
2028	June	Loader	8	250	56	0.36	0.06	0.42	0.35	0.01	0.01	190.59	0.00	0.00	0.00	0.00	0.00	1
2028	July	Loader	8	250	152	0.36	0.06	0.42	0.35	0.01	0.01	190.59	0.00	0.01	0.01	0.00	0.00	3
2028	August	Loader	8	250	96	0.36	0.06	0.42	0.35	0.01	0.01	190.59	0.00	0.00	0.00	0.00	0.00	2
2028	September	Loader	8	250		0.36	0.06	0.42	0.35	0.01	0.01	190.59	-	-	-	-	-	-
2028	October	Loader	8	250		0.36	0.06	0.42	0.35	0.01	0.01	190.59	-	-	-	-	-	-
2028	November	Loader	8	250		0.36	0.06	0.42	0.35	0.01	0.01	190.59	-	-	-	-	-	-
2028	December	Loader	8	250		0.36	0.06	0.42	0.35	0.01	0.01	190.59	-	-	-	-	-	-
2029	January	Loader	8	250		0.36	0.06	0.43	0.33	0.01	0.01	190.56	-	-	-	-	-	-
2029	February	Loader	8	250		0.36	0.06	0.43	0.33	0.01	0.01	190.56	-	-	-	-	-	-
2029	March	Loader	8	250		0.36	0.06	0.43	0.33	0.01	0.01	190.56	-	-	-	-	-	-
2029	April	Loader	8	250		0.36	0.06	0.43	0.33	0.01	0.01	190.56	-	-	-	-	-	-
2029	May	Loader	8	250		0.36	0.06	0.43	0.33	0.01	0.01	190.56	-	-	-	-	-	-
2029	June	Loader	8	250	56	0.36	0.06	0.43	0.33	0.01	0.01	190.56	0.00	0.00	0.00	0.00	0.00	1
2029	July	Loader	8	250	96	0.36	0.06	0.43	0.33	0.01	0.01	190.56	0.00	0.00	0.00	0.00	0.00	2
2029	August	Loader	8	250	120	0.36	0.06	0.43	0.33	0.01	0.01	190.56	0.00	0.01	0.00	0.00	0.00	2
2029	September	Loader	8	250		0.36	0.06	0.43	0.33	0.01	0.01	190.56	-	-	-	-	-	-
2029	October	Loader	8	250		0.36	0.06	0.43	0.33	0.01	0.01	190.56	-	-	-	-	-	-
2029	November	Loader	8	250		0.36	0.06	0.43	0.33	0.01	0.01	190.56	-	-	-	-	-	-
2029	December	Loader	8	250		0.36	0.06	0.43	0.33	0.01	0.01	190.56	-	-	-	-	-	-
2030	January	Loader	8	250		0.36	0.06	0.42	0.31	0.01	0.01	190.56	-	-	-	-	-	-
2030	February	Loader	8	250		0.36	0.06	0.42	0.31	0.01	0.01	190.56	-	-	-	-	-	-
2030	March	Loader	8	250		0.36	0.06	0.42	0.31	0.01	0.01	190.56	-	-	-	-	-	-
2030	April	Loader	8	250		0.36	0.06	0.42	0.31	0.01	0.01	190.56	-	-	-	-	-	-
2030	May	Loader	8	250		0.36	0.06	0.42	0.31	0.01	0.01	190.56	-	-	-	-	-	-
2030	June	Loader	8	250		0.36	0.06	0.42	0.31	0.01	0.01	190.56	-	-	-	-	-	-
2030	July	Loader	8	250		0.36	0.06	0.42	0.31	0.01	0.01	190.56	-	-	-	-	-	-
2030	August	Loader	8	250		0.36	0.06	0.42	0.31	0.01	0.01	190.56	-	-	-	-	-	-
2030	September	Loader	8	250	80	0.36	0.06	0.42	0.31	0.01	0.01	190.56	0.00	0.00	0.00	0.00	0.00	1
2030	October	Loader	8	250		0.36	0.06	0.42	0.31	0.01	0.01	190.56	-	-	-	-	-	-

[illegible]

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2
2026	July	Large Compactor	9	25		0.48	0.09	1.34	1.04	0.04	0.03	183.41	-	-	-	-	-	-
2026	August	Large Compactor	9	25		0.48	0.09	1.34	1.04	0.04	0.03	183.41	-	-	-	-	-	-
2026	September	Large Compactor	9	25		0.48	0.09	1.34	1.04	0.04	0.03	183.41	-	-	-	-	-	-
2026	October	Large Compactor	9	25		0.48	0.09	1.34	1.04	0.04	0.03	183.41	-	-	-	-	-	-
2026	November	Large Compactor	9	25		0.48	0.09	1.34	1.04	0.04	0.03	183.41	-	-	-	-	-	-
2026	December	Large Compactor	9	25		0.48	0.09	1.34	1.04	0.04	0.03	183.41	-	-	-	-	-	-
2027	January	Large Compactor	9	25		0.48	0.09	1.35	1.05	0.04	0.03	185.41	-	-	-	-	-	-
2027	February	Large Compactor	9	25		0.48	0.09	1.35	1.05	0.04	0.03	185.41	-	-	-	-	-	-
2027	March	Large Compactor	9	25	32	0.48	0.09	1.35	1.05	0.04	0.03	185.41	0.00	0.00	0.00	0.00	0.00	0
2027	April	Large Compactor	9	25	56	0.48	0.09	1.35	1.05	0.04	0.03	185.41	0.00	0.00	0.00	0.00	0.00	0
2027	May	Large Compactor	9	25		0.48	0.09	1.35	1.05	0.04	0.03	185.41	-	-	-	-	-	-
2027	June	Large Compactor	9	25		0.48	0.09	1.35	1.05	0.04	0.03	185.41	-	-	-	-	-	-
2027	July	Large Compactor	9	25		0.48	0.09	1.35	1.05	0.04	0.03	185.41	-	-	-	-	-	-
2027	August	Large Compactor	9	25		0.48	0.09	1.35	1.05	0.04	0.03	185.41	-	-	-	-	-	-
2027	September	Large Compactor	9	25		0.48	0.09	1.35	1.05	0.04	0.03	185.41	-	-	-	-	-	-
2027	October	Large Compactor	9	25		0.48	0.09	1.35	1.05	0.04	0.03	185.41	-	-	-	-	-	-
2027	November	Large Compactor	9	25		0.48	0.09	1.35	1.05	0.04	0.03	185.41	-	-	-	-	-	-
2027	December	Large Compactor	9	25		0.48	0.09	1.35	1.05	0.04	0.03	185.41	-	-	-	-	-	-
2028	January	Large Compactor	9	25		0.48	0.09	1.36	1.06	0.04	0.03	187.43	-	-	-	-	-	-
2028	February	Large Compactor	9	25		0.48	0.09	1.36	1.06	0.04	0.03	187.43	-	-	-	-	-	-
2028	March	Large Compactor	9	25		0.48	0.09	1.36	1.06	0.04	0.03	187.43	-	-	-	-	-	-
2028	April	Large Compactor	9	25		0.48	0.09	1.36	1.06	0.04	0.03	187.43	-	-	-	-	-	-
2028	May	Large Compactor	9	25		0.48	0.09	1.36	1.06	0.04	0.03	187.43	-	-	-	-	-	-
2028	June	Large Compactor	9	25		0.48	0.09	1.36	1.06	0.04	0.03	187.43	-	-	-	-	-	-
2028	July	Large Compactor	9	25		0.48	0.09	1.36	1.06	0.04	0.03	187.43	-	-	-	-	-	-
2028	August	Large Compactor	9	25	16	0.48	0.09	1.36	1.06	0.04	0.03	187.43	0.00	0.00	0.00	0.00	0.00	0
2028	September	Large Compactor	9	25		0.48	0.09	1.36	1.06	0.04	0.03	187.43	-	-	-	-	-	-
2028	October	Large Compactor	9	25		0.48	0.09	1.36	1.06	0.04	0.03	187.43	-	-	-	-	-	-
2028	November	Large Compactor	9	25		0.48	0.09	1.36	1.06	0.04	0.03	187.43	-	-	-	-	-	-
2028	December	Large Compactor	9	25		0.48	0.09	1.36	1.06	0.04	0.03	187.43	-	-	-	-	-	-
2029	January	Large Compactor	9	25		0.48	0.09	1.38	1.07	0.04	0.03	189.47	-	-	-	-	-	-
2029	February	Large Compactor	9	25		0.48	0.09	1.38	1.07	0.04	0.03	189.47	-	-	-	-	-	-
2029	March	Large Compactor	9	25		0.48	0.09	1.38	1.07	0.04	0.03	189.47	-	-	-	-	-	-
2029	April	Large Compactor	9	25		0.48	0.09	1.38	1.07	0.04	0.03	189.47	-	-	-	-	-	-
2029	May	Large Compactor	9	25		0.48	0.09	1.38	1.07	0.04	0.03	189.47	-	-	-	-	-	-
2029	June	Large Compactor	9	25	16	0.48	0.09	1.38	1.07	0.04	0.03	189.47	0.00	0.00	0.00	0.00	0.00	0
2029	July	Large Compactor	9	25		0.48	0.09	1.38	1.07	0.04	0.03	189.47	-	-	-	-	-	-
2029	August	Large Compactor	9	25	120	0.48	0.09	1.38	1.07	0.04	0.03	189.47	0.00	0.00	0.00	0.00	0.00	0
2029	September	Large Compactor	9	25		0.48	0.09	1.38	1.07	0.04	0.03	189.47	-	-	-	-	-	-
2029	October	Large Compactor	9	25	24	0.48	0.09	1.38	1.07	0.04	0.03	189.47	0.00	0.00	0.00	0.00	0.00	0
2029	November	Large Compactor	9	25		0.48	0.09	1.38	1.07	0.04	0.03	189.47	-	-	-	-	-	-
2029	December	Large Compactor	9	25		0.48	0.09	1.38	1.07	0.04	0.03	189.47	-	-	-	-	-	-
2030	January	Large Compactor	9	25		0.48	0.09	1.39	1.08	0.04	0.04	191.54	-	-	-	-	-	-
2030	February	Large Compactor	9	25		0.48	0.09	1.39	1.08	0.04	0.04	191.54	-	-	-	-	-	-
2030	March	Large Compactor	9	25		0.48	0.09	1.39	1.08	0.04	0.04	191.54	-	-	-	-	-	-
2030	April	Large Compactor	9	25		0.48	0.09	1.39	1.08	0.04	0.04	191.54	-	-	-	-	-	-
2030	May	Large Compactor	9	25		0.48	0.09	1.39	1.08	0.04	0.04	191.54	-	-	-	-	-	-
2030	June	Large Compactor	9	25		0.48	0.09	1.39	1.08	0.04	0.04	191.54	-	-	-	-	-	-
2030	July	Large Compactor	9	25		0.48	0.09	1.39	1.08	0.04	0.04	191.54	-	-	-	-	-	-
2030	August	Large Compactor	9	25		0.48	0.09	1.39	1.08	0.04	0.04	191.54	-	-	-	-	-	-
2030	September	Large Compactor	9	25		0.48	0.09	1.39	1.08	0.04	0.04	191.54	-	-	-	-	-	-
2030	October	Large Compactor	9	25		0.48	0.09	1.39	1.08	0.04	0.04	191.54	-	-	-	-	-	-

2035	January	Large Compactor	9	25	0	0.48	0.10	1.47	1.00	0.01	0.01	202.21	-	-	-	-	-	-	-
2035	February	Large Compactor	9	25	0	0.48	0.10	1.47	1.00	0.01	0.01	202.21	-	-	-	-	-	-	-
2035	March	Large Compactor	9	25	0	0.48	0.10	1.47	1.00	0.01	0.01	202.21	-	-	-	-	-	-	-
2035	April	Large Compactor	9	25	16	0.48	0.10	1.47	1.00	0.01	0.01	202.21	0.00	0.00	0.00	0.00	0.00	0	4
2035	May	Large Compactor	9	25	0	0.48	0.10	1.47	1.00	0.01	0.01	202.21	-	-	-	-	-	-	-
2035	June	Large Compactor	9	25	32	0.48	0.10	1.47	1.00	0.01	0.01	202.21	0.00	0.00	0.00	0.00	0.00	0	8
2035	July	Large Compactor	9	25	0	0.48	0.10	1.47	1.00	0.01	0.01	202.21	-	-	-	-	-	-	-
2035	August	Large Compactor	9	25	0	0.48	0.10	1.47	1.00	0.01	0.01	202.21	-	-	-	-	-	-	-
2035	September	Large Compactor	9	25	0	0.48	0.10	1.47	1.00	0.01	0.01	202.21	-	-	-	-	-	-	-
2035	October	Large Compactor	9	25	0	0.48	0.10	1.47	1.00	0.01	0.01	202.21	-	-	-	-	-	-	-
2035	November	Large Compactor	9	25	0	0.48	0.10	1.47	1.00	0.01	0.01	202.21	-	-	-	-	-	-	-
2035	December	Large Compactor	9	25	0	0.48	0.10	1.47	1.00	0.01	0.01	202.21	-	-	-	-	-	-	-
2036	January	Large Compactor	9	25	0	0.48	0.10	1.49	1.01	0.01	0.01	204.41	-	-	-	-	-	-	-
2036	February	Large Compactor	9	25	0	0.48	0.10	1.49	1.01	0.01	0.01	204.41	-	-	-	-	-	-	-
2036	March	Large Compactor	9	25	16	0.48	0.10	1.49	1.01	0.01	0.01	204.41	0.00	0.00	0.00	0.00	0.00	0	4
2036	April	Large Compactor	9	25	0	0.48	0.10	1.49	1.01	0.01	0.01	204.41	-	-	-	-	-	-	-
2036	May	Large Compactor	9	25	0	0.48	0.10	1.49	1.01	0.01	0.01	204.41	-	-	-	-	-	-	-
2036	June	Large Compactor	9	25	0	0.48	0.10	1.49	1.01	0.01	0.01	204.41	-	-	-	-	-	-	-
2036	July	Large Compactor	9	25	0	0.48	0.10	1.49	1.01	0.01	0.01	204.41	-	-	-	-	-	-	-
2036	August	Large Compactor	9	25	32	0.48	0.10	1.49	1.01	0.01	0.01	204.41	0.00	0.00	0.00	0.00	0.00	0	8
2036	September	Large Compactor	9	25	0	0.48	0.10	1.49	1.01	0.01	0.01	204.41	-	-	-	-	-	-	-
2036	October	Large Compactor	9	25	24	0.48	0.10	1.49	1.01	0.01	0.01	204.41	0.00	0.00	0.00	0.00	0.00	0	6
2036	November	Large Compactor	9	25	0	0.48	0.10	1.49	1.01	0.01	0.01	204.41	-	-	-	-	-	-	-
2036	December	Large Compactor	9	25	8	0.48	0.10	1.49	1.01	0.01	0.01	204.41	0.00	0.00	0.00	0.00	0.00	0	2
2037	January	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2037	February	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2037	March	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2037	April	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2037	May	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2037	June	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2037	July	Large Compactor	9	25	8	0.48	0.10	1.50	1.02	0.01	0.01	206.64	0.00	0.00	0.00	0.00	0.00	0	2
2037	August	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2037	September	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2037	October	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2037	November	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2037	December	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2038	January	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2038	February	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2038	March	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2038	April	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2038	May	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2038	June	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2038	July	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2038	August	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-
2038	September	Large Compactor	9	25	0	0.48	0.10	1.50	1.02	0.01	0.01	206.64	-	-	-	-	-	-	-

22 Days per Month	10.15 kg/CO2/gal	Days	2026	-	-	-	-	-	-	-	-
			132	0.00	0.00	0.00	0.00	0.00	0.00	0.20	19
			264	0.00	0.00	0.00	0.00	0.00	0.00	0.04	4
			264	0.00	0.00	0.00	0.00	0.00	0.00	0.36	36
			264	0.00	0.00	0.00	0.00	0.00	0.00	-	-
			220	-	-	-	-	-	-	-	-
			1144	Phase 1	0.00	0.00	0.00	0.00	0.00	0.60	59
			264	2035	0.00	0.00	0.00	0.00	0.00	0.12	11
			264	2036	0.00	0.00	0.00	0.00	0.00	0.20	19
			264	2037	0.00	0.00	0.00	0.00	0.00	0.02	2
		Days	2038	-	-	-	-	-	-	-	-
			792	Phase 2	0.00	0.00	0.00	0.00	0.00	0.33	33
				ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel	
				Emissions (tons)							
			2026	-	-	-	-	-			
			264	2027	0.00	0.01	0.01	0.00	0.00		
			264	2028	0.00	0.00	0.00	0.00	0.00		
			264	2029	0.00	0.02	0.02	0.00	0.00		
			220	2030	-	-	-	-	-		
			1144	Phase 1	0.00	0.01	0.01	0.00	0.00		
		Days	264	2035	0.00	0.01	0.00	0.00	0.00		
			264	2036	0.00	0.01	0.01	0.00	0.00		
			264	2037	0.00	0.00	0.00	0.00	0.00		
			198	2038	-	-	-	-	-		
			792	Phase 2	0.00	0.01	0.00	0.00	0.00		
				Average Daily Emissions (pounds)							

		Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Load		Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)		
					Hours	Factor	ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel	
2026	July	Small Compactor	10	15		0.48	0.86	80.82	1.23	0.03	0.02	438.68	-	-	-	-	-	-	-	
2026	August	Small Compactor	10	15		0.48	0.86	80.82	1.23	0.03	0.02	438.68	-	-	-	-	-	-	-	
2026	September	Small Compactor	10	15		0.48	0.86	80.82	1.23	0.03	0.02	438.68	-	-	-	-	-	-	-	
2026	October	Small Compactor	10	15		0.48	0.86	80.82	1.23	0.03	0.02	438.68	-	-	-	-	-	-	-	
2026	November	Small Compactor	10	15		0.48	0.86	80.82	1.23	0.03	0.02	438.68	-	-	-	-	-	-	-	
2026	December	Small Compactor	10	15	40	0.48	0.86	80.82	1.23	0.03	0.02	438.68	0.00	0.03	0.00	0.00	0.00	0	12	
2027	January	Small Compactor	10	15		0.48	0.84	81.04	1.20	0.03	0.02	438.63	-	-	-	-	-	-	-	
2027	February	Small Compactor	10	15		0.48	0.84	81.04	1.20	0.03	0.02	438.63	-	-	-	-	-	-	-	
2027	March	Small Compactor	10	15		0.48	0.84	81.04	1.20	0.03	0.02	438.63	-	-	-	-	-	-	-	
2027	April	Small Compactor	10	15		0.48	0.84	81.04	1.20	0.03	0.02	438.63	-	-	-	-	-	-	-	
2027	May	Small Compactor	10	15		0.48	0.84	81.04	1.20	0.03	0.02	438.63	-	-	-	-	-	-	-	
2027	June	Small Compactor	10	15		0.48	0.84	81.04	1.20	0.03	0.02	438.63	-	-	-	-	-	-	-	
2027	July	Small Compactor	10	15		0.48	0.84	81.04	1.20	0.03	0.02	438.63	-	-	-	-	-	-	-	
2027	August	Small Compactor	10	15		0.48	0.84	81.04	1.20	0.03	0.02	438.63	-	-	-	-	-	-	-	
2027	September	Small Compactor	10	15		0.48	0.84	81.04	1.20	0.03	0.02	438.63	-	-	-	-	-	-	-	
2027	October	Small Compactor	10	15		0.48	0.84	81.04	1.20	0.03	0.02	438.63	-	-	-	-	-	-	-	
2027	November	Small Compactor	10	15		0.48	0.84	81.04	1.20	0.03	0.02	438.63	-	-	-	-	-	-	-	
2027	December	Small Compactor	10	15		0.48	0.84	81.04	1.20	0.03	0.02	438.63	-	-	-	-	-	-	-	
2028	January	Small Compactor	10	15	56	0.48	0.82	81.24	1.17	0.03	0.02	438.71	0.00	0.04	0.00	0.00	0.00	0	17	
2028	February	Small Compactor	10	15	40	0.48	0.82	81.24	1.17	0.03	0.02	438.71	0.00	0.03	0.00	0.00	0.00	0	12	
2028	March	Small Compactor	10	15		0.48	0.82	81.24	1.17	0.03	0.02	438.71	-	-	-	-	-	-	-	
2028	April	Small Compactor	10	15		0.48	0.82	81.24	1.17	0.03	0.02	438.71	-	-	-	-	-	-	-	
2028	May	Small Compactor	10	15		0.48	0.82	81.24	1.17	0.03	0.02	438.71	-	-	-	-	-	-	-	
2028	June	Small Compactor	10	15	56	0.48	0.82	81.24	1.17	0.03	0.02	438.71	0.00	0.04	0.00	0.00	0.00	0	17	
2028	July	Small Compactor	10	15	152	0.48	0.82	81.24	1.17	0.03	0.02	438.71	0.00	0.10	0.00	0.00	0.00	0	47	
2028	August	Small Compactor	10	15	80	0.48	0.82	81.24	1.17	0.03	0.02	438.71	0.00	0.05	0.00	0.00	0.00	0	25	
2028	September	Small Compactor	10	15		0.48	0.82	81.24	1.17	0.03	0.02	438.71	-	-	-	-	-	-	-	
2028	October	Small Compactor	10	15		0.48	0.82	81.24	1.17	0.03	0.02	438.71	-	-	-	-	-	-	-	
2028	November	Small Compactor	10	15		0.48	0.82	81.24	1.17	0.03	0.02	438.71	-	-	-	-	-	-	-	
2028	December	Small Compactor	10	15		0.48	0.82	81.24	1.17	0.03	0.02	438.71	-	-	-	-	-	-	-	
2029	January	Small Compactor	10	15		0.48	0.80	81.39	1.14	0.03	0.02	438.53	-	-	-	-	-	-	-	
2029	February	Small Compactor	10	15		0.48	0.80	81.39	1.14	0.03	0.02	438.53	-	-	-	-	-	-	-	
2029	March	Small Compactor	10	15		0.48	0.80	81.39	1.14	0.03	0.02	438.53	-	-	-	-	-	-	-	
2029	April	Small Compactor	10	15		0.48	0.80	81.39	1.14	0.03	0.02	438.53	-	-	-	-	-	-	-	
2029	May	Small Compactor	10	15		0.48	0.80	81.39	1.14	0.03	0.02	438.53	-	-	-	-	-	-	-	
2029	June	Small Compactor	10	15	64	0.48	0.80	81.39	1.14	0.03	0.02	438.53	0.00	0.04	0.00	0.00	0.00	0	20	
2029	July	Small Compactor	10	15	112	0.48	0.80	81.39	1.14	0.03	0.02	438.53	0.00	0.07	0.00	0.00	0.00	0	35	
2029	August	Small Compactor	10	15		0.48	0.80	81.39	1.14	0.03	0.02	438.53	-	-	-	-	-	-	-	
2029	September	Small Compactor	10	15		0.48	0.80	81.39	1.14	0.03	0.02	438.53	-	-	-	-	-	-	-	
2029	October	Small Compactor	10	15		0.48	0.80	81.39	1.14	0.03	0.02	438.53	-	-	-	-	-	-	-	
2029	November	Small Compactor	10	15		0.48	0.80	81.39	1.14	0.03	0.02	438.53	-	-	-	-	-	-	-	
2029	December	Small Compactor	10	15		0.48	0.80	81.39	1.14	0.03	0.02	438.53	-	-	-	-	-	-	-	
2030	January	Small Compactor	10	15		0.48	0.78	81.57	1.12	0.03	0.02	438.64	-	-	-	-	-	-	-	
2030	February	Small Compactor	10	15		0.48	0.78	81.57	1.12	0.03	0.02	438.64	-	-	-	-	-	-	-	
2030	March	Small Compactor	10	15		0.48	0.78	81.57	1.12	0.03	0.02	438.64	-	-	-	-	-	-	-	
2030	April	Small Compactor	10	15		0.48	0.78	81.57	1.12	0.03	0.02	438.64	-	-	-	-	-	-	-	
2030	May	Small Compactor	10	15		0.48	0.78	81.57	1.12	0.03	0.02	438.64	-	-	-	-	-	-	-	
2030	June	Small Compactor	10	15		0.48	0.78	81.57	1.12	0.03	0.02	438.64	-	-	-	-	-	-	-	
2030	July	Small Compactor	10	15		0.48	0.78	81.57	1.12	0.03	0.02	438.64	-	-	-	-	-	-	-	
2030	August	Small Compactor	10	15		0.48	0.78	81.57	1.12	0.03	0.02	438.64	-	-	-	-	-	-	-	
2030	September	Small Compactor	10	15	80	0.48	0.78	81.57	1.12	0.03	0.02	438.64	0.00	0.05	0.00	0.00	0.00	0	25	
2030	October	Small Compactor	10	15		0.48	0.78	81.57	1.12	0.03	0.02	438.64	-	-	-	-	-	-	-	

2035	January	Small Compactor	10	15	0	0.48	0.76	82.17	1.07	0.03	0.02	438.58	-	-	-	-	-	-	-
2035	February	Small Compactor	10	15	0	0.48	0.76	82.17	1.07	0.03	0.02	438.58	-	-	-	-	-	-	-
2035	March	Small Compactor	10	15	0	0.48	0.76	82.17	1.07	0.03	0.02	438.58	-	-	-	-	-	-	-
2035	April	Small Compactor	10	15	0	0.48	0.76	82.17	1.07	0.03	0.02	438.58	-	-	-	-	-	-	-
2035	May	Small Compactor	10	15	0	0.48	0.76	82.17	1.07	0.03	0.02	438.58	-	-	-	-	-	-	-
2035	June	Small Compactor	10	15	0	0.48	0.76	82.17	1.07	0.03	0.02	438.58	-	-	-	-	-	-	-
2035	July	Small Compactor	10	15	0	0.48	0.76	82.17	1.07	0.03	0.02	438.58	-	-	-	-	-	-	-
2035	August	Small Compactor	10	15	0	0.48	0.76	82.17	1.07	0.03	0.02	438.58	-	-	-	-	-	-	-
2035	September	Small Compactor	10	15	0	0.48	0.76	82.17	1.07	0.03	0.02	438.58	-	-	-	-	-	-	-
2035	October	Small Compactor	10	15	0	0.48	0.76	82.17	1.07	0.03	0.02	438.58	-	-	-	-	-	-	-
2035	November	Small Compactor	10	15	0	0.48	0.76	82.17	1.07	0.03	0.02	438.58	-	-	-	-	-	-	-
2035	December	Small Compactor	10	15	0	0.48	0.76	82.17	1.07	0.03	0.02	438.58	-	-	-	-	-	-	-
2036	January	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.68	-	-	-	-	-	-	-
2036	February	Small Compactor	10	15	96	0.48	0.76	82.24	1.06	0.03	0.02	438.68	0.00	0.06	0.00	0.00	0.00	0	30
2036	March	Small Compactor	10	15	32	0.48	0.76	82.24	1.06	0.03	0.02	438.68	0.00	0.02	0.00	0.00	0.00	0	10
2036	April	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.68	-	-	-	-	-	-	-
2036	May	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.68	-	-	-	-	-	-	-
2036	June	Small Compactor	10	15	40	0.48	0.76	82.24	1.06	0.03	0.02	438.68	0.00	0.03	0.00	0.00	0.00	0	12
2036	July	Small Compactor	10	15	216	0.48	0.76	82.24	1.06	0.03	0.02	438.68	0.00	0.14	0.00	0.00	0.00	1	67
2036	August	Small Compactor	10	15	128	0.48	0.76	82.24	1.06	0.03	0.02	438.68	0.00	0.08	0.00	0.00	0.00	0	40
2036	September	Small Compactor	10	15	168	0.48	0.76	82.24	1.06	0.03	0.02	438.68	0.00	0.11	0.00	0.00	0.00	1	52
2036	October	Small Compactor	10	15	88	0.48	0.76	82.24	1.06	0.03	0.02	438.68	0.00	0.06	0.00	0.00	0.00	0	27
2036	November	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.68	-	-	-	-	-	-	-
2036	December	Small Compactor	10	15	8	0.48	0.76	82.24	1.06	0.03	0.02	438.68	0.00	0.01	0.00	0.00	0.00	0	2
2037	January	Small Compactor	10	15	8	0.48	0.76	82.24	1.06	0.03	0.02	438.67	0.00	0.01	0.00	0.00	0.00	0	2
2037	February	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-
2037	March	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-
2037	April	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-
2037	May	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-
2037	June	Small Compactor	10	15	16	0.48	0.76	82.24	1.06	0.03	0.02	438.67	0.00	0.01	0.00	0.00	0.00	0	5
2037	July	Small Compactor	10	15	128	0.48	0.76	82.24	1.06	0.03	0.02	438.67	0.00	0.08	0.00	0.00	0.00	0	40
2037	August	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-
2037	September	Small Compactor	10	15	40	0.48	0.76	82.24	1.06	0.03	0.02	438.67	0.00	0.03	0.00	0.00	0.00	0	12
2037	October	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-
2037	November	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-
2037	December	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-
2038	January	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-
2038	February	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-
2038	March	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-
2038	April	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-
2038	May	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-
2038	June	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-
2038	July	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-
2038	August	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-
2038	September	Small Compactor	10	15	0	0.48	0.76	82.24	1.06	0.03	0.02	438.67	-	-	-	-	-	-	-

22 Days per Month 10.15 kg/CO2/gal	Phase 1	2026	0.00	0.03	0.00	0.00	0.00	0.13	12
		2027	-	-	-	-	-	-	-
		2028	0.00	0.25	0.00	0.00	0.00	1.21	120
		2029	0.00	0.11	0.00	0.00	0.00	0.56	55
		2030	0.00	0.05	0.00	0.00	0.00	0.25	25
		Phase 1	0.00	0.44	0.01	0.00	0.00	2.15	212
		2035	-	-	-	-	-	-	-
		2036	0.00	0.51	0.01	0.00	0.00	2.45	241
		2037	0.00	0.13	0.00	0.00	0.00	0.61	60
		2038	-	-	-	-	-	-	-
	Phase 2	2026	0.01	0.63	0.01	0.00	0.00	3.06	301
		ROG							
		CO							
		NOX							
		PM10							
		PM2.5							
		CO2 (metric tons)							
		gals Diesel							
		Days							
		132	2026	0.00	0.39	0.01	0.00	0.00	
	Average Daily Emissions (pounds)	264	2027	-	-	-	-	-	
		264	2028	0.02	1.88	0.03	0.00	0.00	
		264	2029	0.01	0.86	0.01	0.00	0.00	
		220	2030	0.00	0.47	0.01	0.00	0.00	
		1144	Phase 1	0.01	0.77	0.01	0.00	0.00	
		264	2035	-	-	-	-	-	
		264	2036	0.04	3.84	0.05	0.00	0.00	
		264	2037	0.01	0.95	0.01	0.00	0.00	
		198	2038	-	-	-	-	-	
		792	Phase 2	0.01	1.60	0.02	0.00	0.00	

		Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Load		Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)		
					Hours	Factor	ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel	
2026	July	Water Truck	11	275		0.38	0.07	0.47	0.41	0.02	0.01	200.94	-	-	-	-	-	-	-	
2026	August	Water Truck	11	275		0.38	0.07	0.47	0.41	0.02	0.01	200.94	-	-	-	-	-	-	-	
2026	September	Water Truck	11	275		0.38	0.07	0.47	0.41	0.02	0.01	200.94	-	-	-	-	-	-	-	
2026	October	Water Truck	11	275		0.38	0.07	0.47	0.41	0.02	0.01	200.94	-	-	-	-	-	-	-	
2026	November	Water Truck	11	275		0.38	0.07	0.47	0.41	0.02	0.01	200.94	-	-	-	-	-	-	-	
2026	December	Water Truck	11	275	2	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.00	0.00	0.00	0.00	0	5	
2027	January	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2027	February	Water Truck	11	275	4	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.00	0.00	0.00	0.00	0	8	
2027	March	Water Truck	11	275	3	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.00	0.00	0.00	0.00	0	7	
2027	April	Water Truck	11	275	6	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.00	0.00	0.00	0.00	0	12	
2027	May	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2027	June	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2027	July	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2027	August	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2027	September	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2027	October	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2027	November	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2027	December	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2028	January	Water Truck	11	275	6	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.00	0.00	0.00	0.00	0	12	
2028	February	Water Truck	11	275	4	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.00	0.00	0.00	0.00	0	8	
2028	March	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	200.94	-	-	-	-	-	-	-	
2028	April	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	200.94	-	-	-	-	-	-	-	
2028	May	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	200.94	-	-	-	-	-	-	-	
2028	June	Water Truck	11	275	6	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.00	0.00	0.00	0.00	0	12	
2028	July	Water Truck	11	275	15	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.00	0.00	0.00	0.00	0	31	
2028	August	Water Truck	11	275	10	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.00	0.00	0.00	0.00	0	20	
2028	September	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	200.94	-	-	-	-	-	-	-	
2028	October	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	200.94	-	-	-	-	-	-	-	
2028	November	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	200.94	-	-	-	-	-	-	-	
2028	December	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	200.94	-	-	-	-	-	-	-	
2029	January	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	February	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	March	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	April	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	May	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	June	Water Truck	11	275	3	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	0	7	
2029	July	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	August	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	September	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	October	Water Truck	11	275	12	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	0	25	
2029	November	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	December	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	January	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	February	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	March	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	April	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	May	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	June	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	July	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	August	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	September	Water Truck	11	275	8	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	0	17	
2030	October	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	

			2026	0.00	0.00	0.00	0.00	0.00		0.05	5
			2027	0.00	0.00	0.00	0.00	0.00		0.27	26
			2028	0.00	0.00	0.00	0.00	0.00		0.84	83
			2029	0.00	0.00	0.00	0.00	0.00		0.32	31
			2030	0.00	0.00	0.00	0.00	0.00		0.17	17
		Phase 1		0.00	0.00	0.00	0.00	0.00		1.65	162
			2035	0.00	0.00	0.00	0.00	0.00		0.37	36
			2036	0.00	0.01	0.01	0.00	0.00		4.24	418
			2037	0.00	0.00	0.00	0.00	0.00		1.03	101
			2038	-	-	-	-	-		-	-
		Phase 2		0.00	0.01	0.01	0.00	0.00		5.64	555
			ROG	CO	NOX	PM10	PM2.5		CO2 (metric tons)		gals Diesel
			Emissions (tons)								
	22 Days per Month	Days	132	2026	0.00	0.00	0.00	0.00			
			264	2027	0.00	0.01	0.00	0.00	0.00		
	10.15 kg/CO2/gal		264	2028	0.00	0.02	0.01	0.00	0.00		
			264	2029	0.00	0.01	0.00	0.00	0.00		
			220	2030	0.00	0.00	0.00	0.00	0.00		
		1144	Phase 1		0.00	0.01	0.01	0.00	0.00		
			264	2035	0.00	0.01	0.00	0.00	0.00		
			264	2036	0.01	0.08	0.04	0.00	0.00		
			264	2037	0.00	0.02	0.01	0.00	0.00		
			198	2038	-	-	-	-	-		
		792	Phase 2		0.00	0.04	0.02	0.00	0.00		
			Average Daily Emissions (pounds)								

		Offroad Construction Equipment Emissions - Unmitigated																	
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)		
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	CO2
2026	July	Crane	12	300		0.29	0.07	0.43	0.72	0.03	0.03	151.99	-	-	-	-	-	-	-
2026	August	Crane	12	300		0.29	0.07	0.43	0.72	0.03	0.03	151.99	-	-	-	-	-	-	-
2026	September	Crane	12	300		0.29	0.07	0.43	0.72	0.03	0.03	151.99	-	-	-	-	-	-	-
2026	October	Crane	12	300		0.29	0.07	0.43	0.72	0.03	0.03	151.99	-	-	-	-	-	-	-
2026	November	Crane	12	300	144	0.29	0.07	0.43	0.72	0.03	0.03	151.99	0.00	0.01	0.01	0.00	0.00	2	188
2026	December	Crane	12	300	226	0.29	0.07	0.43	0.72	0.03	0.03	151.99	0.00	0.01	0.02	0.00	0.00	3	295
2027	January	Crane	12	300	80	0.29	0.07	0.42	0.65	0.03	0.02	151.99	0.00	0.00	0.00	0.00	0.00	1	104
2027	February	Crane	12	300	128	0.29	0.07	0.42	0.65	0.03	0.02	151.99	0.00	0.01	0.01	0.00	0.00	2	167
2027	March	Crane	12	300	166	0.29	0.07	0.42	0.65	0.03	0.02	151.99	0.00	0.01	0.01	0.00	0.00	2	216
2027	April	Crane	12	300	184	0.29	0.07	0.42	0.65	0.03	0.02	151.99	0.00	0.01	0.01	0.00	0.00	2	240
2027	May	Crane	12	300	32	0.29	0.07	0.42	0.65	0.03	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0	42
2027	June	Crane	12	300	216	0.29	0.07	0.42	0.65	0.03	0.02	151.99	0.00	0.01	0.01	0.00	0.00	3	281
2027	July	Crane	12	300	236	0.29	0.07	0.42	0.65	0.03	0.02	151.99	0.00	0.01	0.01	0.00	0.00	3	307
2027	August	Crane	12	300	152	0.29	0.07	0.42	0.65	0.03	0.02	151.99	0.00	0.01	0.01	0.00	0.00	2	198
2027	September	Crane	12	300	258	0.29	0.07	0.42	0.65	0.03	0.02	151.99	0.00	0.01	0.02	0.00	0.00	3	336
2027	October	Crane	12	300	124	0.29	0.07	0.42	0.65	0.03	0.02	151.99	0.00	0.00	0.01	0.00	0.00	2	162
2027	November	Crane	12	300	76	0.29	0.07	0.42	0.65	0.03	0.02	151.99	0.00	0.00	0.00	0.00	0.00	1	99
2027	December	Crane	12	300	88	0.29	0.07	0.42	0.65	0.03	0.02	151.99	0.00	0.00	0.01	0.00	0.00	1	115
2028	January	Crane	12	300	104	0.29	0.07	0.41	0.61	0.03	0.02	151.98	0.00	0.00	0.01	0.00	0.00	1	135
2028	February	Crane	12	300	104	0.29	0.07	0.41	0.61	0.03	0.02	151.98	0.00	0.00	0.01	0.00	0.00	1	135
2028	March	Crane	12	300	24	0.29	0.07	0.41	0.61	0.03	0.02	151.98	0.00	0.00	0.00	0.00	0.00	0	31
2028	April	Crane	12	300	188	0.29	0.07	0.41	0.61	0.03	0.02	151.98	0.00	0.01	0.01	0.00	0.00	2	245
2028	May	Crane	12	300	220	0.29	0.07	0.41	0.61	0.03	0.02	151.98	0.00	0.01	0.01	0.00	0.00	3	287
2028	June	Crane	12	300	196	0.29	0.07	0.41	0.61	0.03	0.02	151.98	0.00	0.01	0.01	0.00	0.00	3	255
2028	July	Crane	12	300	152	0.29	0.07	0.41	0.61	0.03	0.02	151.98	0.00	0.01	0.01	0.00	0.00	2	198
2028	August	Crane	12	300	218	0.29	0.07	0.41	0.61	0.03	0.02	151.98	0.00	0.01	0.01	0.00	0.00	3	284
2028	September	Crane	12	300	225	0.29	0.07	0.41	0.61	0.03	0.02	151.98	0.00	0.01	0.01	0.00	0.00	3	293
2028	October	Crane	12	300	130	0.29	0.07	0.41	0.61	0.03	0.02	151.98	0.00	0.01	0.01	0.00	0.00	2	170
2028	November	Crane	12	300	98	0.29	0.07	0.41	0.61	0.03	0.02	151.98	0.00	0.00	0.01	0.00	0.00	1	128
2028	December	Crane	12	300	118	0.29	0.07	0.41	0.61	0.03	0.02	151.98	0.00	0.00	0.01	0.00	0.00	2	154
2029	January	Crane	12	300	108	0.29	0.06	0.41	0.59	0.02	0.02	151.99	0.00	0.00	0.01	0.00	0.00	1	141
2029	February	Crane	12	300	15	0.29	0.06	0.41	0.59	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0	20
2029	March	Crane	12	300	37	0.29	0.06	0.41	0.59	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0	48
2029	April	Crane	12	300	8	0.29	0.06	0.41	0.59	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0	10
2029	May	Crane	12	300	10	0.29	0.06	0.41	0.59	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0	13
2029	June	Crane	12	300	72	0.29	0.06	0.41	0.59	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	1	94
2029	July	Crane	12	300	36	0.29	0.06	0.41	0.59	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0	47
2029	August	Crane	12	300	120	0.29	0.06	0.41	0.59	0.02	0.02	151.99	0.00	0.00	0.01	0.00	0.00	2	156
2029	September	Crane	12	300	88	0.29	0.06	0.41	0.59	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	1	115
2029	October	Crane	12	300	38	0.29	0.06	0.41	0.59	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0	49
2029	November	Crane	12	300	17	0.29	0.06	0.41	0.59	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0	22
2029	December	Crane	12	300	2	0.29	0.06	0.41	0.59	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0	2
2030	January	Crane	12	300		0.29	0.06	0.39	0.54	0.02	0.02	151.99	-	-	-	-	-	-	-
2030	February	Crane	12	300	80	0.29	0.06	0.39	0.54	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	1	104
2030	March	Crane	12	300		0.29	0.06	0.39	0.54	0.02	0.02	151.99	-	-	-	-	-	-	-
2030	April	Crane	12	300	6	0.29	0.06	0.39	0.54	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0	8
2030	May	Crane	12	300	10	0.29	0.06	0.39	0.54	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0	13
2030	June	Crane	12	300	6	0.29	0.06	0.39	0.54	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0	7
2030	July	Crane	12	300	17	0.29	0.06	0.39	0.54	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0	22
2030	August	Crane	12	300	2	0.29	0.06	0.39	0.54	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0	2
2030	September	Crane	12	300		0.29	0.06	0.39	0.54	0.02	0.02	151.99	-	-	-	-	-	-	-
2030	October	Crane	12	300		0.29	0.06	0.39	0.54	0.02	0.02	151.99	-	-	-	-	-	-	-

2035	January	Crane	12	300	0	0.29	0.05	0.37	0.41	0.02	0.02	151.99	-	-	-	-	-	-	-
2035	February	Crane	12	300	0	0.29	0.05	0.37	0.41	0.02	0.02	151.99	-	-	-	-	-	-	-
2035	March	Crane	12	300	0	0.29	0.05	0.37	0.41	0.02	0.02	151.99	-	-	-	-	-	-	-
2035	April	Crane	12	300	44	0.29	0.05	0.37	0.41	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0.00	1
2035	May	Crane	12	300	52	0.29	0.05	0.37	0.41	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0.00	1
2035	June	Crane	12	300	56	0.29	0.05	0.37	0.41	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0.00	1
2035	July	Crane	12	300	36	0.29	0.05	0.37	0.41	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0.00	0
2035	August	Crane	12	300	4	0.29	0.05	0.37	0.41	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0.00	0
2035	September	Crane	12	300	40	0.29	0.05	0.37	0.41	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0.00	1
2035	October	Crane	12	300	68	0.29	0.05	0.37	0.41	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0.00	1
2035	November	Crane	12	300	160	0.29	0.05	0.37	0.41	0.02	0.02	151.99	0.00	0.01	0.01	0.00	0.00	0.00	2
2035	December	Crane	12	300	96	0.29	0.05	0.37	0.41	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0.00	1
2036	January	Crane	12	300	140	0.29	0.05	0.36	0.38	0.02	0.02	151.99	0.00	0.00	0.01	0.00	0.00	0.00	2
2036	February	Crane	12	300	120	0.29	0.05	0.36	0.38	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0.00	2
2036	March	Crane	12	300	132	0.29	0.05	0.36	0.38	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0.00	2
2036	April	Crane	12	300	196	0.29	0.05	0.36	0.38	0.02	0.02	151.99	0.00	0.01	0.01	0.00	0.00	0.00	3
2036	May	Crane	12	300	144	0.29	0.05	0.36	0.38	0.02	0.02	151.99	0.00	0.01	0.01	0.00	0.00	0.00	2
2036	June	Crane	12	300	68	0.29	0.05	0.36	0.38	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0.00	1
2036	July	Crane	12	300	294	0.29	0.05	0.36	0.38	0.02	0.02	151.99	0.00	0.01	0.01	0.00	0.00	0.00	4
2036	August	Crane	12	300	388	0.29	0.05	0.36	0.38	0.02	0.02	151.99	0.00	0.01	0.01	0.00	0.00	0.00	5
2036	September	Crane	12	300	290.4	0.29	0.05	0.36	0.38	0.02	0.02	151.99	0.00	0.01	0.01	0.00	0.00	0.00	4
2036	October	Crane	12	300	181.6	0.29	0.05	0.36	0.38	0.02	0.02	151.99	0.00	0.01	0.01	0.00	0.00	0.00	2
2036	November	Crane	12	300	60	0.29	0.05	0.36	0.38	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0.00	1
2036	December	Crane	12	300	96	0.29	0.05	0.36	0.38	0.02	0.02	151.99	0.00	0.00	0.00	0.00	0.00	0.00	1
2037	January	Crane	12	300	108	0.29	0.05	0.36	0.36	0.02	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0.00	1
2037	February	Crane	12	300	178.4	0.29	0.05	0.36	0.36	0.02	0.01	151.99	0.00	0.01	0.01	0.00	0.00	0.00	2
2037	March	Crane	12	300	231.2	0.29	0.05	0.36	0.36	0.02	0.01	151.99	0.00	0.01	0.01	0.00	0.00	0.00	3
2037	April	Crane	12	300	57.6	0.29	0.05	0.36	0.36	0.02	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0.00	1
2037	May	Crane	12	300	176	0.29	0.05	0.36	0.36	0.02	0.01	151.99	0.00	0.01	0.01	0.00	0.00	0.00	2
2037	June	Crane	12	300	220	0.29	0.05	0.36	0.36	0.02	0.01	151.99	0.00	0.01	0.01	0.00	0.00	0.00	3
2037	July	Crane	12	300	306	0.29	0.05	0.36	0.36	0.02	0.01	151.99	0.00	0.01	0.01	0.00	0.00	0.00	4
2037	August	Crane	12	300	144	0.29	0.05	0.36	0.36	0.02	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0.00	2
2037	September	Crane	12	300	128	0.29	0.05	0.36	0.36	0.02	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0.00	2
2037	October	Crane	12	300	200	0.29	0.05	0.36	0.36	0.02	0.01	151.99	0.00	0.01	0.01	0.00	0.00	0.00	3
2037	November	Crane	12	300	33.2	0.29	0.05	0.36	0.36	0.02	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0.00	0
2037	December	Crane	12	300	106.8	0.29	0.05	0.36	0.36	0.02	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0.00	1
2038	January	Crane	12	300	166.8	0.29	0.05	0.36	0.36	0.02	0.01	151.99	0.00	0.01	0.01	0.00	0.00	0.00	2
2038	February	Crane	12	300	160	0.29	0.05	0.36	0.36	0.02	0.01	151.99	0.00	0.01	0.01	0.00	0.00	0.00	2
2038	March	Crane	12	300	96	0.29	0.05	0.36	0.36	0.02	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0.00	1
2038	April	Crane	12	300	0	0.29	0.05	0.36	0.36	0.02	0.01	151.99	-	-	-	-	-	-	-
2038	May	Crane	12	300	0	0.29	0.05	0.36	0.36	0.02	0.01	151.99	-	-	-	-	-	-	-
2038	June	Crane	12	300	0	0.29	0.05	0.36	0.36	0.02	0.01	151.99	-	-	-	-	-	-	-
2038	July	Crane	12	300	0	0.29	0.05	0.36	0.36	0.02	0.01	151.99	-	-	-	-	-	-	-
2038	August	Crane	12	300	0	0.29	0.05	0.36	0.36	0.02	0.01	151.99	-	-	-	-	-	-	-
2038	September	Crane	12	300	0	0.29	0.05	0.36	0.36	0.02	0.01	151.99	-	-	-	-	-	-	-

Phase 1	2026	0.00	0.02	0.03	0.00	0.00	4.90	483
	2027	0.01	0.07	0.11	0.00	0.00	23.01	2,267
	2028	0.01	0.07	0.10	0.00	0.00	23.50	2,316
	2029	0.00	0.02	0.03	0.00	0.00	7.28	717
	2030	0.00	0.00	0.01	0.00	0.00	1.59	156
		0.03	0.18	0.27	0.01	0.01	60.28	5,939
	2035	0.00	0.02	0.02	0.00	0.00	7.35	724
	2036	0.01	0.07	0.08	0.00	0.00	27.90	2,749
	2037	0.01	0.06	0.06	0.00	0.00	24.98	2,461
	2038	0.00	0.01	0.01	0.00	0.00	5.59	551
Phase 2	0.02	0.17	0.18	0.01	0.01	65.83	6,485	
	ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel	
Days	Emissions (tons)							
132	2026	0.04	0.23	0.39	0.02	0.01		
264	2027	0.09	0.53	0.82	0.03	0.03		
264	2028	0.08	0.53	0.78	0.03	0.03		
264	2029	0.03	0.16	0.23	0.01	0.01		
220	2030	0.01	0.04	0.06	0.00	0.00		
1144	Phase 1	0.05	0.31	0.48	0.02	0.02		
264	2035	0.02	0.15	0.16	0.01	0.01		
264	2036	0.08	0.56	0.59	0.03	0.02		
264	2037	0.07	0.49	0.49	0.02	0.02		
198	2038	0.02	0.15	0.15	0.01	0.01		
792	Phase 2	0.06	0.44	0.45	0.02	0.02		
	Average Daily Emissions (pounds)							

Year	Month	Equipment	Offroad Construction Equipment Emissions - Unmitigated																			
			Total					Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)			
			ID	HP	Hours	ROG	CO		NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals	Diesel		
2026	July	Manlift	13	100		0.31	0.03	0.97	0.44	0.01	0.00	162.70	-	-	-	-	-	-	-	-		
2026	August	Manlift	13	100		0.31	0.03	0.97	0.44	0.01	0.00	162.70	-	-	-	-	-	-	-	-		
2026	September	Manlift	13	100		0.31	0.03	0.97	0.44	0.01	0.00	162.70	-	-	-	-	-	-	-	-		
2026	October	Manlift	13	100		0.31	0.03	0.97	0.44	0.01	0.00	162.70	-	-	-	-	-	-	-	-		
2026	November	Manlift	13	100		0.31	0.03	0.97	0.44	0.01	0.00	162.70	-	-	-	-	-	-	-	-		
2026	December	Manlift	13	100	48	0.31	0.03	0.97	0.44	0.01	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	0	24		
2027	January	Manlift	13	100		0.31	0.03	0.96	0.43	0.01	0.00	162.69	-	-	-	-	-	-	-	-		
2027	February	Manlift	13	100	320	0.31	0.03	0.96	0.43	0.01	0.00	162.69	0.00	0.01	0.00	0.00	0.00	0.00	2	159		
2027	March	Manlift	13	100	520	0.31	0.03	0.96	0.43	0.01	0.00	162.69	0.00	0.02	0.01	0.00	0.00	0.00	3	258		
2027	April	Manlift	13	100		0.31	0.03	0.96	0.43	0.01	0.00	162.69	-	-	-	-	-	-	-	-		
2027	May	Manlift	13	100		0.31	0.03	0.96	0.43	0.01	0.00	162.69	-	-	-	-	-	-	-	-		
2027	June	Manlift	13	100		0.31	0.03	0.96	0.43	0.01	0.00	162.69	-	-	-	-	-	-	-	-		
2027	July	Manlift	13	100		0.31	0.03	0.96	0.43	0.01	0.00	162.69	-	-	-	-	-	-	-	-		
2027	August	Manlift	13	100		0.31	0.03	0.96	0.43	0.01	0.00	162.69	-	-	-	-	-	-	-	-		
2027	September	Manlift	13	100	88	0.31	0.03	0.96	0.43	0.01	0.00	162.69	0.00	0.00	0.00	0.00	0.00	0.00	0	44		
2027	October	Manlift	13	100	112	0.31	0.03	0.96	0.43	0.01	0.00	162.69	0.00	0.00	0.00	0.00	0.00	0.00	1	56		
2027	November	Manlift	13	100		0.31	0.03	0.96	0.43	0.01	0.00	162.69	-	-	-	-	-	-	-	-		
2027	December	Manlift	13	100	24	0.31	0.03	0.96	0.43	0.01	0.00	162.69	0.00	0.00	0.00	0.00	0.00	0.00	0	12		
2028	January	Manlift	13	100	16	0.31	0.02	0.96	0.43	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	0	8		
2028	February	Manlift	13	100	88	0.31	0.02	0.96	0.43	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	0	44		
2028	March	Manlift	13	100		0.31	0.02	0.96	0.43	0.00	0.00	162.70	-	-	-	-	-	-	-	-		
2028	April	Manlift	13	100	160	0.31	0.02	0.96	0.43	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	1	80		
2028	May	Manlift	13	100	40	0.31	0.02	0.96	0.43	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	0	20		
2028	June	Manlift	13	100	200	0.31	0.02	0.96	0.43	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	1	99		
2028	July	Manlift	13	100		0.31	0.02	0.96	0.43	0.00	0.00	162.70	-	-	-	-	-	-	-	-		
2028	August	Manlift	13	100	40	0.31	0.02	0.96	0.43	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	0	20		
2028	September	Manlift	13	100	48	0.31	0.02	0.96	0.43	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	0	24		
2028	October	Manlift	13	100	664	0.31	0.02	0.96	0.43	0.00	0.00	162.70	0.00	0.02	0.01	0.00	0.00	0.00	3	330		
2028	November	Manlift	13	100	1088	0.31	0.02	0.96	0.43	0.00	0.00	162.70	0.00	0.04	0.02	0.00	0.00	0.00	5	541		
2028	December	Manlift	13	100	968	0.31	0.02	0.96	0.43	0.00	0.00	162.70	0.00	0.03	0.01	0.00	0.00	0.00	5	481		
2029	January	Manlift	13	100	584	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.02	0.01	0.00	0.00	0.00	3	290		
2029	February	Manlift	13	100	448	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.01	0.01	0.00	0.00	0.00	2	223		
2029	March	Manlift	13	100	672	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.02	0.01	0.00	0.00	0.00	3	334		
2029	April	Manlift	13	100	244	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	1	121		
2029	May	Manlift	13	100	576	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.02	0.01	0.00	0.00	0.00	3	286		
2029	June	Manlift	13	100	396	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.01	0.01	0.00	0.00	0.00	2	197		
2029	July	Manlift	13	100	32	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	0	16		
2029	August	Manlift	13	100	104	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	1	52		
2029	September	Manlift	13	100	56	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	0	28		
2029	October	Manlift	13	100	312	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	2	155		
2029	November	Manlift	13	100	768	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.03	0.01	0.00	0.00	0.00	4	382		
2029	December	Manlift	13	100	400	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.01	0.01	0.00	0.00	0.00	2	199		
2030	January	Manlift	13	100	240	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	1	119		
2030	February	Manlift	13	100	200	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	1	99		
2030	March	Manlift	13	100	408	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.01	0.01	0.00	0.00	0.00	2	203		
2030	April	Manlift	13	100	304	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	2	151		
2030	May	Manlift	13	100	288	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	1	143		
2030	June	Manlift	13	100		0.31	0.03	0.97	0.43	0.00	0.00	162.70	-	-	-	-	-	-	-	-		
2030	July	Manlift	13	100	288	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	1	143		
2030	August	Manlift	13	100	32	0.31	0.03	0.97	0.43	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	0	16		
2030	September	Manlift	13	100		0.31	0.03	0.97	0.43	0.00	0.00	162.70	-	-	-	-	-	-	-	-		
2030	October	Manlift	13	100		0.31	0.03	0.97	0.43	0.00	0.00	162.70	-	-	-	-	-	-	-	-		

2035	January	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-
2035	February	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-
2035	March	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-
2035	April	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-
2035	May	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-
2035	June	Manlift	13	100	16	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	8
2035	July	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-
2035	August	Manlift	13	100	16	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	8
2035	September	Manlift	13	100	16	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	8
2035	October	Manlift	13	100	16	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	8
2035	November	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-
2035	December	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-
2036	January	Manlift	13	100	40	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	20
2036	February	Manlift	13	100	432	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.01	0.01	0.00	0.00	0.00	215
2036	March	Manlift	13	100	304	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	151
2036	April	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-
2036	May	Manlift	13	100	240	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	119
2036	June	Manlift	13	100	240	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	119
2036	July	Manlift	13	100	40	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	20
2036	August	Manlift	13	100	176	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	87
2036	September	Manlift	13	100	720	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.02	0.01	0.00	0.00	0.00	358
2036	October	Manlift	13	100	80	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	40
2036	November	Manlift	13	100	336	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	167
2036	December	Manlift	13	100	144	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	72
2037	January	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-
2037	February	Manlift	13	100	560	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.02	0.01	0.00	0.00	0.00	278
2037	March	Manlift	13	100	160	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	80
2037	April	Manlift	13	100	920	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.03	0.01	0.00	0.00	0.00	457
2037	May	Manlift	13	100	16	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	8
2037	June	Manlift	13	100	64	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	32
2037	July	Manlift	13	100	24	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	12
2037	August	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-
2037	September	Manlift	13	100	40	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.00	0.00	0.00	0.00	0.00	20
2037	October	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-
2037	November	Manlift	13	100	152	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	76
2037	December	Manlift	13	100	1260	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.04	0.02	0.00	0.00	0.00	626
2038	January	Manlift	13	100	868	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.03	0.01	0.00	0.00	0.00	431
2038	February	Manlift	13	100	232	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	115
2038	March	Manlift	13	100	360	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.01	0.01	0.00	0.00	0.00	179
2038	April	Manlift	13	100	216	0.31	0.02	0.97	0.42	0.00	0.00	162.70	0.00	0.01	0.00	0.00	0.00	0.00	107
2038	May	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-
2038	June	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-
2038	July	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-
2038	August	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-
2038	September	Manlift	13	100	0	0.31	0.02	0.97	0.42	0.00	0.00	162.70	-	-	-	-	-	-	-

22 Days per Month 10.15 kg/CO2/gal	Days	2026	0.00	0.00	0.00	0.00	0.00	0.24	24
		2027	0.00	0.04	0.02	0.00	0.00	5.37	529
		2028	0.00	0.11	0.05	0.00	0.00	16.70	1,646
		2029	0.00	0.15	0.07	0.00	0.00	23.16	2,282
		2030	0.00	0.06	0.03	0.00	0.00	8.88	875
		Phase 1	0.01	0.36	0.16	0.00	0.00	54.35	5,355
		2035	0.00	0.00	0.00	0.00	0.00	0.32	32
		2036	0.00	0.09	0.04	0.00	0.00	13.88	1,367
		2037	0.00	0.11	0.05	0.00	0.00	16.12	1,588
		2038	0.00	0.06	0.02	0.00	0.00	8.45	833
	Average Daily Emissions (pounds)	Phase 2	0.01	0.25	0.11	0.00	0.00	38.78	3,820
		ROG							
		CO							
		NOX							
		PM10							
		PM2.5							
		CO2 (metric tons)							
		gals Diesel							
		264	2035	0.00	0.02	0.01	0.00	0.00	
		264	2036	0.02	0.69	0.30	0.00	0.00	
		264	2037	0.02	0.80	0.35	0.00	0.00	
		198	2038	0.01	0.56	0.24	0.00	0.00	
		792	Phase 2	0.02	0.64	0.28	0.00	0.00	

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2
2026	July	Welding Machine	14	25		0.45	0.20	2.00	1.59	0.04	0.04	255.73	-	-	-	-	-	-
2026	August	Welding Machine	14	25		0.45	0.20	2.00	1.59	0.04	0.04	255.73	-	-	-	-	-	-
2026	September	Welding Machine	14	25		0.45	0.20	2.00	1.59	0.04	0.04	255.73	-	-	-	-	-	-
2026	October	Welding Machine	14	25		0.45	0.20	2.00	1.59	0.04	0.04	255.73	-	-	-	-	-	-
2026	November	Welding Machine	14	25		0.45	0.20	2.00	1.59	0.04	0.04	255.73	-	-	-	-	-	-
2026	December	Welding Machine	14	25	72	0.45	0.20	2.00	1.59	0.04	0.04	255.73	0.00	0.00	0.00	0.00	0.00	0
2027	January	Welding Machine	14	25	16	0.45	0.19	1.98	1.54	0.03	0.03	255.73	0.00	0.00	0.00	0.00	0.00	0
2027	February	Welding Machine	14	25	624	0.45	0.19	1.98	1.54	0.03	0.03	255.73	0.00	0.02	0.01	0.00	0.00	2
2027	March	Welding Machine	14	25	600	0.45	0.19	1.98	1.54	0.03	0.03	255.73	0.00	0.01	0.01	0.00	0.00	2
2027	April	Welding Machine	14	25		0.45	0.19	1.98	1.54	0.03	0.03	255.73	-	-	-	-	-	-
2027	May	Welding Machine	14	25		0.45	0.19	1.98	1.54	0.03	0.03	255.73	-	-	-	-	-	-
2027	June	Welding Machine	14	25		0.45	0.19	1.98	1.54	0.03	0.03	255.73	-	-	-	-	-	-
2027	July	Welding Machine	14	25		0.45	0.19	1.98	1.54	0.03	0.03	255.73	-	-	-	-	-	-
2027	August	Welding Machine	14	25	64	0.45	0.19	1.98	1.54	0.03	0.03	255.73	0.00	0.00	0.00	0.00	0.00	0
2027	September	Welding Machine	14	25	168	0.45	0.19	1.98	1.54	0.03	0.03	255.73	0.00	0.00	0.00	0.00	0.00	0
2027	October	Welding Machine	14	25	168	0.45	0.19	1.98	1.54	0.03	0.03	255.73	0.00	0.00	0.00	0.00	0.00	0
2027	November	Welding Machine	14	25		0.45	0.19	1.98	1.54	0.03	0.03	255.73	-	-	-	-	-	-
2027	December	Welding Machine	14	25	168	0.45	0.19	1.98	1.54	0.03	0.03	255.73	0.00	0.00	0.00	0.00	0.00	0
2028	January	Welding Machine	14	25	16	0.45	0.18	1.97	1.50	0.03	0.02	255.74	0.00	0.00	0.00	0.00	0.00	0
2028	February	Welding Machine	14	25		0.45	0.18	1.97	1.50	0.03	0.02	255.74	-	-	-	-	-	-
2028	March	Welding Machine	14	25		0.45	0.18	1.97	1.50	0.03	0.02	255.74	-	-	-	-	-	-
2028	April	Welding Machine	14	25		0.45	0.18	1.97	1.50	0.03	0.02	255.74	-	-	-	-	-	-
2028	May	Welding Machine	14	25	112	0.45	0.18	1.97	1.50	0.03	0.02	255.74	0.00	0.00	0.00	0.00	0.00	0
2028	June	Welding Machine	14	25	352	0.45	0.18	1.97	1.50	0.03	0.02	255.74	0.00	0.01	0.01	0.00	0.00	1
2028	July	Welding Machine	14	25	304	0.45	0.18	1.97	1.50	0.03	0.02	255.74	0.00	0.01	0.01	0.00	0.00	1
2028	August	Welding Machine	14	25	672	0.45	0.18	1.97	1.50	0.03	0.02	255.74	0.00	0.02	0.01	0.00	0.00	2
2028	September	Welding Machine	14	25	648	0.45	0.18	1.97	1.50	0.03	0.02	255.74	0.00	0.02	0.01	0.00	0.00	2
2028	October	Welding Machine	14	25	848	0.45	0.18	1.97	1.50	0.03	0.02	255.74	0.00	0.02	0.02	0.00	0.00	2
2028	November	Welding Machine	14	25	1120	0.45	0.18	1.97	1.50	0.03	0.02	255.74	0.00	0.03	0.02	0.00	0.00	3
2028	December	Welding Machine	14	25	1144	0.45	0.18	1.97	1.50	0.03	0.02	255.74	0.00	0.03	0.02	0.00	0.00	3
2029	January	Welding Machine	14	25	688	0.45	0.17	1.96	1.48	0.02	0.02	255.73	0.00	0.02	0.01	0.00	0.00	2
2029	February	Welding Machine	14	25	456	0.45	0.17	1.96	1.48	0.02	0.02	255.73	0.00	0.01	0.01	0.00	0.00	1
2029	March	Welding Machine	14	25	216	0.45	0.17	1.96	1.48	0.02	0.02	255.73	0.00	0.01	0.00	0.00	0.00	1
2029	April	Welding Machine	14	25	240	0.45	0.17	1.96	1.48	0.02	0.02	255.73	0.00	0.01	0.00	0.00	0.00	1
2029	May	Welding Machine	14	25		0.45	0.17	1.96	1.48	0.02	0.02	255.73	-	-	-	-	-	-
2029	June	Welding Machine	14	25		0.45	0.17	1.96	1.48	0.02	0.02	255.73	-	-	-	-	-	-
2029	July	Welding Machine	14	25		0.45	0.17	1.96	1.48	0.02	0.02	255.73	-	-	-	-	-	-
2029	August	Welding Machine	14	25	336	0.45	0.17	1.96	1.48	0.02	0.02	255.73	0.00	0.01	0.01	0.00	0.00	1
2029	September	Welding Machine	14	25	304	0.45	0.17	1.96	1.48	0.02	0.02	255.73	0.00	0.01	0.01	0.00	0.00	1
2029	October	Welding Machine	14	25	488	0.45	0.17	1.96	1.48	0.02	0.02	255.73	0.00	0.01	0.01	0.00	0.00	1
2029	November	Welding Machine	14	25	504	0.45	0.17	1.96	1.48	0.02	0.02	255.73	0.00	0.01	0.01	0.00	0.00	1
2029	December	Welding Machine	14	25	48	0.45	0.17	1.96	1.48	0.02	0.02	255.73	0.00	0.00	0.00	0.00	0.00	0
2030	January	Welding Machine	14	25		0.45	0.16	1.95	1.46	0.02	0.02	255.74	-	-	-	-	-	-
2030	February	Welding Machine	14	25	80	0.45	0.16	1.95	1.46	0.02	0.02	255.74	0.00	0.00	0.00	0.00	0.00	0
2030	March	Welding Machine	14	25		0.45	0.16	1.95	1.46	0.02	0.02	255.74	-	-	-	-	-	-
2030	April	Welding Machine	14	25	192	0.45	0.16	1.95	1.46	0.02	0.02	255.74	0.00	0.00	0.00	0.00	0.00	1
2030	May	Welding Machine	14	25	288	0.45	0.16	1.95	1.46	0.02	0.02	255.74	0.00	0.01	0.01	0.00	0.00	1
2030	June	Welding Machine	14	25		0.45	0.16	1.95	1.46	0.02	0.02	255.74	-	-	-	-	-	-
2030	July	Welding Machine	14	25		0.45	0.16	1.95	1.46	0.02	0.02	255.74	-	-	-	-	-	-
2030	August	Welding Machine	14	25		0.45	0.16	1.95	1.46	0.02	0.02	255.74	-	-	-	-	-	-
2030	September	Welding Machine	14	25		0.45	0.16	1.95	1.46	0.02	0.02	255.74	-	-	-	-	-	-
2030	October	Welding Machine	14	25		0.45	0.16	1.95	1.46	0.02	0.02	255.74	-	-	-	-	-	-

2035	January	Welding Machine	14	25	0	0.45	0.15	1.93	1.41	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2035	February	Welding Machine	14	25	0	0.45	0.15	1.93	1.41	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2035	March	Welding Machine	14	25	0	0.45	0.15	1.93	1.41	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2035	April	Welding Machine	14	25	0	0.45	0.15	1.93	1.41	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2035	May	Welding Machine	14	25	0	0.45	0.15	1.93	1.41	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2035	June	Welding Machine	14	25	0	0.45	0.15	1.93	1.41	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2035	July	Welding Machine	14	25	0	0.45	0.15	1.93	1.41	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2035	August	Welding Machine	14	25	0	0.45	0.15	1.93	1.41	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2035	September	Welding Machine	14	25	0	0.45	0.15	1.93	1.41	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2035	October	Welding Machine	14	25	0	0.45	0.15	1.93	1.41	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2035	November	Welding Machine	14	25	36	0.45	0.15	1.93	1.41	0.01	0.01	255.74	0.00	0.00	0.00	0.00	0.00	0.00	0	10
2035	December	Welding Machine	14	25	24	0.45	0.15	1.93	1.41	0.01	0.01	255.74	0.00	0.00	0.00	0.00	0.00	0.00	0	7
2036	January	Welding Machine	14	25	0	0.45	0.15	1.93	1.40	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2036	February	Welding Machine	14	25	0	0.45	0.15	1.93	1.40	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2036	March	Welding Machine	14	25	16	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.00	0.00	0.00	0.00	0.00	1	5
2036	April	Welding Machine	14	25	176	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.00	0.00	0.00	0.00	0.00	0	50
2036	May	Welding Machine	14	25	408	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.01	0.01	0.00	0.00	0.00	1	116
2036	June	Welding Machine	14	25	360	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.01	0.01	0.01	0.00	0.00	1	102
2036	July	Welding Machine	14	25	48	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.00	0.00	0.00	0.00	0.00	0	14
2036	August	Welding Machine	14	25	168	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.00	0.00	0.00	0.00	0.00	0	48
2036	September	Welding Machine	14	25	456	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.01	0.01	0.00	0.00	0.00	1	129
2036	October	Welding Machine	14	25	48	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.00	0.00	0.00	0.00	0.00	0	14
2036	November	Welding Machine	14	25	0	0.45	0.15	1.93	1.40	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2036	December	Welding Machine	14	25	0	0.45	0.15	1.93	1.40	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2037	January	Welding Machine	14	25	24	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.00	0.00	0.00	0.00	0.00	0	7
2037	February	Welding Machine	14	25	448	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.01	0.01	0.00	0.00	0.00	1	127
2037	March	Welding Machine	14	25	256	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.01	0.00	0.00	0.00	0.00	1	73
2037	April	Welding Machine	14	25	528	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.01	0.01	0.00	0.00	0.00	2	150
2037	May	Welding Machine	14	25	88	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.00	0.00	0.00	0.00	0.00	0	25
2037	June	Welding Machine	14	25	152	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.00	0.00	0.00	0.00	0.00	0	43
2037	July	Welding Machine	14	25	152	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.00	0.00	0.00	0.00	0.00	0	43
2037	August	Welding Machine	14	25	88	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.00	0.00	0.00	0.00	0.00	0	25
2037	September	Welding Machine	14	25	64	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.00	0.00	0.00	0.00	0.00	0	18
2037	October	Welding Machine	14	25	176	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.00	0.00	0.00	0.00	0.00	1	50
2037	November	Welding Machine	14	25	216	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.01	0.00	0.00	0.00	0.00	1	61
2037	December	Welding Machine	14	25	1044	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.03	0.02	0.00	0.00	0.00	3	296
2038	January	Welding Machine	14	25	444	0.45	0.15	1.93	1.40	0.01	0.01	255.74	0.00	0.01	0.01	0.00	0.00	0.00	1	126
2038	February	Welding Machine	14	25	0	0.45	0.15	1.93	1.40	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2038	March	Welding Machine	14	25	0	0.45	0.15	1.93	1.40	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2038	April	Welding Machine	14	25	0	0.45	0.15	1.93	1.40	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2038	May	Welding Machine	14	25	0	0.45	0.15	1.93	1.40	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2038	June	Welding Machine	14	25	0	0.45	0.15	1.93	1.40	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2038	July	Welding Machine	14	25	0	0.45	0.15	1.93	1.40	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2038	August	Welding Machine	14	25	0	0.45	0.15	1.93	1.40	0.01	0.01	255.74	-	-	-	-	-	-	-	-
2038	September	Welding Machine	14	25	0	0.45	0.15	1.93	1.40	0.01	0.01	255.74	-	-	-	-	-	-	-	-

Phase 1	2026	0.00	0.00	0.00	0.00	0.00	0.21	20
	2027	0.00	0.04	0.03	0.00	0.00	5.20	512
	2028	0.01	0.13	0.10	0.00	0.00	15.01	1,478
	2029	0.01	0.08	0.06	0.00	0.00	9.44	930
	2030	0.00	0.01	0.01	0.00	0.00	1.61	159
		0.02	0.27	0.20	0.00	0.00	31.46	3,100
	2035	0.00	0.00	0.00	0.00	0.00	0.17	17
	2036	0.00	0.04	0.03	0.00	0.00	4.83	476
	2037	0.01	0.08	0.06	0.00	0.00	9.31	917
	2038	0.00	0.01	0.01	0.00	0.00	1.28	126
Phase 2		0.01	0.13	0.09	0.00	0.00	15.59	1,536
	ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel	

22 Days per Month

10.15 kg/CO₂/gal

Days		Emissions (tons)				
132	2026	0.00	0.03	0.02	0.00	0.00
264	2027	0.03	0.34	0.26	0.01	0.01
264	2028	0.09	0.96	0.74	0.01	0.01
264	2029	0.05	0.60	0.46	0.01	0.01
220	2030	0.01	0.12	0.09	0.00	0.00
1144	Phase 1	0.04	0.47	0.36	0.01	0.01
264	2035	0.00	0.01	0.01	0.00	0.00
264	2036	0.02	0.31	0.22	0.00	0.00
264	2037	0.04	0.59	0.42	0.00	0.00
198	2038	0.01	0.11	0.08	0.00	0.00
792	Phase 2	0.02	0.33	0.24	0.00	0.00

Average Daily Emissions (pounds)

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2
2026	July	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2026	August	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2026	September	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2026	October	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2026	November	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2026	December	Cutting Torch	15	25	24	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2027	January	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	February	Cutting Torch	15	25	160	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.01	0.00	0.00	0.00	0
2027	March	Cutting Torch	15	25	200	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.01	0.00	0.00	0.00	0
2027	April	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	May	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	June	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	July	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	August	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	September	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	October	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	November	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	December	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	January	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	February	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	March	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	April	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	May	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	June	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	July	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	August	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	September	Cutting Torch	15	25	8	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2028	October	Cutting Torch	15	25	224	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.01	0.01	0.00	0.00	0
2028	November	Cutting Torch	15	25	304	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.01	0.01	0.00	0.00	1
2028	December	Cutting Torch	15	25	280	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.01	0.01	0.00	0.00	0
2029	January	Cutting Torch	15	25	160	0.34	0.13	1.55	1.16	0.03	0.02	200.86	0.00	0.00	0.00	0.00	0.00	0
2029	February	Cutting Torch	15	25	152	0.34	0.13	1.55	1.16	0.03	0.02	200.86	0.00	0.00	0.00	0.00	0.00	0
2029	March	Cutting Torch	15	25	72	0.34	0.13	1.55	1.16	0.03	0.02	200.86	0.00	0.00	0.00	0.00	0.00	0
2029	April	Cutting Torch	15	25	80	0.34	0.13	1.55	1.16	0.03	0.02	200.86	0.00	0.00	0.00	0.00	0.00	0
2029	May	Cutting Torch	15	25		0.34	0.13	1.55	1.16	0.03	0.02	200.86	-	-	-	-	-	-
2029	June	Cutting Torch	15	25		0.34	0.13	1.55	1.16	0.03	0.02	200.86	-	-	-	-	-	-
2029	July	Cutting Torch	15	25		0.34	0.13	1.55	1.16	0.03	0.02	200.86	-	-	-	-	-	-
2029	August	Cutting Torch	15	25		0.34	0.13	1.55	1.16	0.03	0.02	200.86	-	-	-	-	-	-
2029	September	Cutting Torch	15	25		0.34	0.13	1.55	1.16	0.03	0.02	200.86	-	-	-	-	-	-
2029	October	Cutting Torch	15	25	136	0.34	0.13	1.55	1.16	0.03	0.02	200.86	0.00	0.00	0.00	0.00	0.00	0
2029	November	Cutting Torch	15	25	168	0.34	0.13	1.55	1.16	0.03	0.02	200.86	0.00	0.00	0.00	0.00	0.00	0
2029	December	Cutting Torch	15	25	16	0.34	0.13	1.55	1.16	0.03	0.02	200.86	0.00	0.00	0.00	0.00	0.00	0
2030	January	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2030	February	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2030	March	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2030	April	Cutting Torch	15	25	64	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2030	May	Cutting Torch	15	25	96	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2030	June	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2030	July	Cutting Torch	15	25	144	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.01	0.00	0.00	0.00	0
2030	August	Cutting Torch	15	25	16	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2030	September	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2030	October	Cutting Torch	15	25		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-

		Emissions (tons)					CO2 (metric tons)		gals Diesel		
		ROG	CO	NOX	PM10	PM2.5					
10.15 kg/CO2/gal	22 Days per Month	2026	0.00	0.00	0.00	0.00	0.00		0.04	4	
		2027	0.00	0.01	0.01	0.00	0.00		0.61	60	
		2028	0.01	0.03	0.02	0.00	0.00		1.39	137	
		2029	0.00	0.01	0.01	0.00	0.00		1.34	132	
		2030	0.00	0.01	0.01	0.00	0.00		0.55	54	
		Phase 1	0.02	0.07	0.05	0.01	0.00		3.93	387	
		2035	-	-	-	-	-		-	-	
		2036	0.01	0.01	0.01	0.00	0.00		0.68	67	
		2037	0.01	0.03	0.02	0.00	0.00		1.25	123	
		2038	0.00	0.01	0.00	0.00	0.00		0.25	25	
		Phase 2	0.02	0.05	0.03	0.00	0.00		2.18	215	
		Days		ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)		gals Diesel
		Average Daily Emissions (pounds)									
		264	2026	0.00	0.01	0.01	0.00	0.00			
		264	2027	0.04	0.10	0.07	0.01	0.01			
264	2028	0.08	0.22	0.15	0.02	0.02					
264	2029	0.01	0.09	0.06	0.00	0.00					
220	2030	0.04	0.10	0.07	0.01	0.01					
1144	Phase 1	0.04	0.11	0.08	0.01	0.01					
264	2035	-	-	-	-	-					
264	2036	0.04	0.11	0.07	0.01	0.01					
264	2037	0.07	0.20	0.14	0.02	0.02					
198	2038	0.02	0.05	0.04	0.01	0.00					
792	Phase 2	0.04	0.12	0.08	0.01	0.01					

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	
2026	July	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2026	August	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2026	September	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2026	October	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2026	November	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2026	December	Pipe Fitter Tools	15	10	24	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2027	January	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	February	Pipe Fitter Tools	15	10	160	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2027	March	Pipe Fitter Tools	15	10	200	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2027	April	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	May	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	June	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	July	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	August	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	September	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	October	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	November	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2027	December	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	January	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	February	Pipe Fitter Tools	15	10	4	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2028	March	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	April	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	May	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	June	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	July	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	August	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2028	September	Pipe Fitter Tools	15	10	8	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2028	October	Pipe Fitter Tools	15	10	224	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2028	November	Pipe Fitter Tools	15	10	304	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2028	December	Pipe Fitter Tools	15	10	280	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2029	January	Pipe Fitter Tools	15	10	160	0.34	0.13	1.55	1.16	0.03	0.02	200.86	0.00	0.00	0.00	0.00	0.00	0
2029	February	Pipe Fitter Tools	15	10	152	0.34	0.13	1.55	1.16	0.03	0.02	200.86	0.00	0.00	0.00	0.00	0.00	0
2029	March	Pipe Fitter Tools	15	10	72	0.34	0.13	1.55	1.16	0.03	0.02	200.86	0.00	0.00	0.00	0.00	0.00	0
2029	April	Pipe Fitter Tools	15	10	80	0.34	0.13	1.55	1.16	0.03	0.02	200.86	0.00	0.00	0.00	0.00	0.00	0
2029	May	Pipe Fitter Tools	15	10		0.34	0.13	1.55	1.16	0.03	0.02	200.86	-	-	-	-	-	-
2029	June	Pipe Fitter Tools	15	10		0.34	0.13	1.55	1.16	0.03	0.02	200.86	-	-	-	-	-	-
2029	July	Pipe Fitter Tools	15	10		0.34	0.13	1.55	1.16	0.03	0.02	200.86	-	-	-	-	-	-
2029	August	Pipe Fitter Tools	15	10		0.34	0.13	1.55	1.16	0.03	0.02	200.86	-	-	-	-	-	-
2029	September	Pipe Fitter Tools	15	10		0.34	0.13	1.55	1.16	0.03	0.02	200.86	-	-	-	-	-	-
2029	October	Pipe Fitter Tools	15	10	136	0.34	0.13	1.55	1.16	0.03	0.02	200.86	0.00	0.00	0.00	0.00	0.00	0
2029	November	Pipe Fitter Tools	15	10	168	0.34	0.13	1.55	1.16	0.03	0.02	200.86	0.00	0.00	0.00	0.00	0.00	0
2029	December	Pipe Fitter Tools	15	10	16	0.34	0.13	1.55	1.16	0.03	0.02	200.86	0.00	0.00	0.00	0.00	0.00	0
2030	January	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2030	February	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2030	March	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2030	April	Pipe Fitter Tools	15	10	64	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2030	May	Pipe Fitter Tools	15	10	96	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2030	June	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2030	July	Pipe Fitter Tools	15	10	144	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2030	August	Pipe Fitter Tools	15	10	16	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0
2030	September	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-
2030	October	Pipe Fitter Tools	15	10		0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-

2035	January	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2035	February	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2035	March	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2035	April	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2035	May	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2035	June	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2035	July	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2035	August	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2035	September	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2035	October	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2035	November	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2035	December	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2036	January	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2036	February	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2036	March	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2036	April	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2036	May	Pipe Fitter Tools	15	10	120	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0	8
2036	June	Pipe Fitter Tools	15	10	120	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0	8
2036	July	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2036	August	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2036	September	Pipe Fitter Tools	15	10	144	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0	10
2036	October	Pipe Fitter Tools	15	10	16	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0	1
2036	November	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2036	December	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2037	January	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2037	February	Pipe Fitter Tools	15	10	104	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0	7
2037	March	Pipe Fitter Tools	15	10	32	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0	2
2037	April	Pipe Fitter Tools	15	10	176	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0	12
2037	May	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2037	June	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2037	July	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2037	August	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2037	September	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2037	October	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2037	November	Pipe Fitter Tools	15	10	72	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0	5
2037	December	Pipe Fitter Tools	15	10	420	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.01	0.00	0.00	0.00	0	28
2038	January	Pipe Fitter Tools	15	10	300	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0	20
2038	February	Pipe Fitter Tools	15	10	160	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0	11
2038	March	Pipe Fitter Tools	15	10	96	0.34	1.39	3.81	2.62	0.36	0.33	200.58	0.00	0.00	0.00	0.00	0.00	0	6
2038	April	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2038	May	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2038	June	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2038	July	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2038	August	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-
2038	September	Pipe Fitter Tools	15	10	0	0.34	1.39	3.81	2.62	0.36	0.33	200.58	-	-	-	-	-	-	-

22 Days per Month 10.15 kg/CO2/gal	Phase 1	2026	0.00	0.00	0.00	0.00	0.00	0.02	2
		2027	0.00	0.01	0.00	0.00	0.00	0.25	24
		2028	0.00	0.01	0.01	0.00	0.00	0.56	55
		2029	0.00	0.00	0.00	0.00	0.00	0.54	53
		2030	0.00	0.00	0.00	0.00	0.00	0.22	22
		Phase 1	0.01	0.03	0.02	0.00	0.00	1.57	155
		2035	-	-	-	-	-	-	-
		2036	0.00	0.01	0.00	0.00	0.00	0.27	27
		2037	0.00	0.01	0.01	0.00	0.00	0.55	54
		2038	0.00	0.01	0.01	0.00	0.00	0.38	37
	Phase 2	2026	0.01	0.03	0.02	0.00	0.00	1.20	118
		ROG							
		CO							
		NOX							
		PM10							
		PM2.5							
		CO2 (metric tons)							
		gals Diesel							
		Days							
		132	2026	0.00	0.01	0.00	0.00		
	Average Daily Emissions (pounds)	264	2027	0.01	0.04	0.03	0.00	0.00	
		264	2028	0.03	0.09	0.06	0.01	0.01	
		264	2029	0.00	0.03	0.03	0.00	0.00	
		220	2030	0.02	0.04	0.03	0.00	0.00	
		1144	Phase 1	0.01	0.05	0.03	0.00	0.00	
		264	2035	-	-	-	-	-	
		264	2036	0.02	0.04	0.03	0.00	0.00	
		264	2037	0.03	0.09	0.06	0.01	0.01	
		198	2038	0.03	0.08	0.06	0.01	0.01	
		792	Phase 2	0.02	0.06	0.04	0.01	0.01	

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Load Hours	Factor	Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Pile Driving Rig	16	300		0.50	0.06	0.53	0.54	0.02	0.02	264.02	-	-	-	-	-	-	-
2026	August	Pile Driving Rig	16	300		0.50	0.06	0.53	0.54	0.02	0.02	264.02	-	-	-	-	-	-	-
2026	September	Pile Driving Rig	16	300		0.50	0.06	0.53	0.54	0.02	0.02	264.02	-	-	-	-	-	-	-
2026	October	Pile Driving Rig	16	300		0.50	0.06	0.53	0.54	0.02	0.02	264.02	-	-	-	-	-	-	-
2026	November	Pile Driving Rig	16	300	136	0.50	0.06	0.53	0.54	0.02	0.02	264.02	0.00	0.01	0.01	0.00	0.00	5	531
2026	December	Pile Driving Rig	16	300	144	0.50	0.06	0.53	0.54	0.02	0.02	264.02	0.00	0.01	0.01	0.00	0.00	6	562
2027	January	Pile Driving Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	February	Pile Driving Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	March	Pile Driving Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	April	Pile Driving Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	May	Pile Driving Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	June	Pile Driving Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	July	Pile Driving Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	August	Pile Driving Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	September	Pile Driving Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	October	Pile Driving Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	November	Pile Driving Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	December	Pile Driving Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2028	January	Pile Driving Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	February	Pile Driving Rig	16	300	40	0.50	0.06	0.53	0.51	0.02	0.02	263.59	0.00	0.00	0.00	0.00	0.00	2	156
2028	March	Pile Driving Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	April	Pile Driving Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	May	Pile Driving Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	June	Pile Driving Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	July	Pile Driving Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	August	Pile Driving Rig	16	300	40	0.50	0.06	0.53	0.51	0.02	0.02	263.59	0.00	0.00	0.00	0.00	0.00	2	156
2028	September	Pile Driving Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	October	Pile Driving Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	November	Pile Driving Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	December	Pile Driving Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2029	January	Pile Driving Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	February	Pile Driving Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	March	Pile Driving Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	April	Pile Driving Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	May	Pile Driving Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	June	Pile Driving Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	July	Pile Driving Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	August	Pile Driving Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	September	Pile Driving Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	October	Pile Driving Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	November	Pile Driving Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	December	Pile Driving Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2030	January	Pile Driving Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	February	Pile Driving Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	March	Pile Driving Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	April	Pile Driving Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	May	Pile Driving Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	June	Pile Driving Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	July	Pile Driving Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	August	Pile Driving Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	September	Pile Driving Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	October	Pile Driving Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-

2035	January	Pile Driving Rig	16	300	0	0.50	0.05	0.51	0.34	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2035	February	Pile Driving Rig	16	300	0	0.50	0.05	0.51	0.34	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2035	March	Pile Driving Rig	16	300	0	0.50	0.05	0.51	0.34	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2035	April	Pile Driving Rig	16	300	0	0.50	0.05	0.51	0.34	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2035	May	Pile Driving Rig	16	300	0	0.50	0.05	0.51	0.34	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2035	June	Pile Driving Rig	16	300	0	0.50	0.05	0.51	0.34	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2035	July	Pile Driving Rig	16	300	0	0.50	0.05	0.51	0.34	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2035	August	Pile Driving Rig	16	300	0	0.50	0.05	0.51	0.34	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2035	September	Pile Driving Rig	16	300	0	0.50	0.05	0.51	0.34	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2035	October	Pile Driving Rig	16	300	0	0.50	0.05	0.51	0.34	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2035	November	Pile Driving Rig	16	300	0	0.50	0.05	0.51	0.34	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2035	December	Pile Driving Rig	16	300	0	0.50	0.05	0.51	0.34	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2036	January	Pile Driving Rig	16	300	0	0.50	0.05	0.50	0.32	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2036	February	Pile Driving Rig	16	300	120	0.50	0.05	0.50	0.32	0.01	0.01	263.88	0.00	0.01	0.01	0.00	0.00			5	468
2036	March	Pile Driving Rig	16	300	120	0.50	0.05	0.50	0.32	0.01	0.01	263.88	0.00	0.01	0.01	0.00	0.00			5	468
2036	April	Pile Driving Rig	16	300	0	0.50	0.05	0.50	0.32	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2036	May	Pile Driving Rig	16	300	0	0.50	0.05	0.50	0.32	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2036	June	Pile Driving Rig	16	300	0	0.50	0.05	0.50	0.32	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2036	July	Pile Driving Rig	16	300	0	0.50	0.05	0.50	0.32	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2036	August	Pile Driving Rig	16	300	120	0.50	0.05	0.50	0.32	0.01	0.01	263.88	0.00	0.01	0.01	0.00	0.00			5	468
2036	September	Pile Driving Rig	16	300	0	0.50	0.05	0.50	0.32	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2036	October	Pile Driving Rig	16	300	0	0.50	0.05	0.50	0.32	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2036	November	Pile Driving Rig	16	300	0	0.50	0.05	0.50	0.32	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2036	December	Pile Driving Rig	16	300	0	0.50	0.05	0.50	0.32	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2037	January	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2037	February	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2037	March	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2037	April	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2037	May	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2037	June	Pile Driving Rig	16	300	168	0.50	0.04	0.50	0.29	0.01	0.01	263.88	0.00	0.01	0.01	0.00	0.00			7	655
2037	July	Pile Driving Rig	16	300	24	0.50	0.04	0.50	0.29	0.01	0.01	263.88	0.00	0.00	0.00	0.00	0.00			1	94
2037	August	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2037	September	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2037	October	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2037	November	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2037	December	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2038	January	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2038	February	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2038	March	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2038	April	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2038	May	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2038	June	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2038	July	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2038	August	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-
2038	September	Pile Driving Rig	16	300	0	0.50	0.04	0.50	0.29	0.01	0.01	263.88	-	-	-	-	-	-	-	-	-

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	
2026	July	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.54	0.02	0.02	264.02	-	-	-	-	-	-
2026	August	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.54	0.02	0.02	264.02	-	-	-	-	-	-
2026	September	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.54	0.02	0.02	264.02	-	-	-	-	-	-
2026	October	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.54	0.02	0.02	264.02	-	-	-	-	-	-
2026	November	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.54	0.02	0.02	264.02	-	-	-	-	-	-
2026	December	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.54	0.02	0.02	264.02	-	-	-	-	-	-
2027	January	Pier Drilling Rig	16	300	128	0.50	0.06	0.53	0.52	0.02	0.02	264.02	0.00	0.01	0.01	0.00	0.00	5
2027	February	Pier Drilling Rig	16	300	152	0.50	0.06	0.53	0.52	0.02	0.02	264.02	0.00	0.01	0.01	0.00	0.00	6
2027	March	Pier Drilling Rig	16	300	48	0.50	0.06	0.53	0.52	0.02	0.02	264.02	0.00	0.00	0.00	0.00	0.00	2
2027	April	Pier Drilling Rig	16	300	24	0.50	0.06	0.53	0.52	0.02	0.02	264.02	0.00	0.00	0.00	0.00	0.00	1
2027	May	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-
2027	June	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-
2027	July	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-
2027	August	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-
2027	September	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-
2027	October	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-
2027	November	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-
2027	December	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-
2028	January	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-
2028	February	Pier Drilling Rig	16	300	24	0.50	0.06	0.53	0.51	0.02	0.02	263.59	0.00	0.00	0.00	0.00	0.00	1
2028	March	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-
2028	April	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-
2028	May	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-
2028	June	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-
2028	July	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-
2028	August	Pier Drilling Rig	16	300	112	0.50	0.06	0.53	0.51	0.02	0.02	263.59	0.00	0.01	0.01	0.00	0.00	4
2028	September	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-
2028	October	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-
2028	November	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-
2028	December	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-
2029	January	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-
2029	February	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-
2029	March	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-
2029	April	Pier Drilling Rig	16	300	16	0.50	0.06	0.53	0.49	0.02	0.01	263.88	0.00	0.00	0.00	0.00	0.00	1
2029	May	Pier Drilling Rig	16	300	176	0.50	0.06	0.53	0.49	0.02	0.01	263.88	0.00	0.02	0.01	0.00	0.00	7
2029	June	Pier Drilling Rig	16	300	8	0.50	0.06	0.53	0.49	0.02	0.01	263.88	0.00	0.00	0.00	0.00	0.00	0
2029	July	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-
2029	August	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-
2029	September	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-
2029	October	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-
2029	November	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-
2029	December	Pier Drilling Rig	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-
2030	January	Pier Drilling Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-
2030	February	Pier Drilling Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-
2030	March	Pier Drilling Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-
2030	April	Pier Drilling Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-
2030	May	Pier Drilling Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-
2030	June	Pier Drilling Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-
2030	July	Pier Drilling Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-
2030	August	Pier Drilling Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-
2030	September	Pier Drilling Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-
2030	October	Pier Drilling Rig	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-

22 Days per Month 10.15 kg/CO2/gal		2026	-	-	-	-	-	-	-
		2027	0.00	0.03	0.03	0.00	0.00	13.94	1,373
		2028	0.00	0.01	0.01	0.00	0.00	5.38	530
		2029	0.00	0.02	0.02	0.00	0.00	7.92	780
		2030	-	-	-	-	-	-	-
		Phase 1	0.01	0.06	0.06	0.00	0.00	27.23	2,683
		2035	-	-	-	-	-	-	-
		2036	-	-	-	-	-	-	-
		2037	0.00	0.00	0.00	0.00	0.00	1.27	125
		2038	-	-	-	-	-	-	-
		Phase 2	0.00	0.00	0.00	0.00	0.00	1.27	125
		ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel	
		Days	Emissions (tons)						
		132	2026	-	-	-	-	-	-
		264	2027	0.03	0.23	0.23	0.01	0.01	
		264	2028	0.01	0.09	0.09	0.00	0.00	
		264	2029	0.01	0.13	0.12	0.00	0.00	
		220	2030	-	-	-	-	-	
		1144	Phase 1	0.01	0.11	0.10	0.00	0.00	
		264	2035	-	-	-	-	-	
	264	2036	-	-	-	-	-		
	264	2037	0.00	0.02	0.01	0.00	0.00		
	198	2038	-	-	-	-	-		
	792	Phase 2	0.00	0.01	0.00	0.00	0.00		
		Average Daily Emissions (pounds)							

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Concrete Boom Pl	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	August	Concrete Boom Pl	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	September	Concrete Boom Pl	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	October	Concrete Boom Pl	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	November	Concrete Boom Pl	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	December	Concrete Boom Pl	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2027	January	Concrete Boom Pl	17	350	4	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	0	11
2027	February	Concrete Boom Pl	17	350	4	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	0	11
2027	March	Concrete Boom Pl	17	350		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	April	Concrete Boom Pl	17	350		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	May	Concrete Boom Pl	17	350	32	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	1	85
2027	June	Concrete Boom Pl	17	350		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	July	Concrete Boom Pl	17	350	16	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	0	42
2027	August	Concrete Boom Pl	17	350	112	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	3	296
2027	September	Concrete Boom Pl	17	350	32	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	1	85
2027	October	Concrete Boom Pl	17	350	16	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	0	42
2027	November	Concrete Boom Pl	17	350	40	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	1	106
2027	December	Concrete Boom Pl	17	350	16	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	0	42
2028	January	Concrete Boom Pl	17	350	40	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	1	106
2028	February	Concrete Boom Pl	17	350	48	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	1	127
2028	March	Concrete Boom Pl	17	350	120	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	3	318
2028	April	Concrete Boom Pl	17	350		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	May	Concrete Boom Pl	17	350	16	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	42
2028	June	Concrete Boom Pl	17	350	16	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	42
2028	July	Concrete Boom Pl	17	350		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	August	Concrete Boom Pl	17	350		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	September	Concrete Boom Pl	17	350	8	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	21
2028	October	Concrete Boom Pl	17	350	8	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	21
2028	November	Concrete Boom Pl	17	350		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	December	Concrete Boom Pl	17	350	8	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	21
2029	January	Concrete Boom Pl	17	350	16	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	42
2029	February	Concrete Boom Pl	17	350	72	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	2	191
2029	March	Concrete Boom Pl	17	350	176	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	5	466
2029	April	Concrete Boom Pl	17	350	120	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	3	318
2029	May	Concrete Boom Pl	17	350		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	June	Concrete Boom Pl	17	350		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	July	Concrete Boom Pl	17	350	16	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	42
2029	August	Concrete Boom Pl	17	350	8	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	21
2029	September	Concrete Boom Pl	17	350	8	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	21
2029	October	Concrete Boom Pl	17	350	8	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	21
2029	November	Concrete Boom Pl	17	350	8	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	21
2029	December	Concrete Boom Pl	17	350		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	January	Concrete Boom Pl	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	February	Concrete Boom Pl	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	March	Concrete Boom Pl	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	April	Concrete Boom Pl	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	May	Concrete Boom Pl	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	June	Concrete Boom Pl	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	July	Concrete Boom Pl	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	August	Concrete Boom Pl	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	September	Concrete Boom Pl	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	October	Concrete Boom Pl	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-

		2026	-	-	-	-	-	-	-	-	-
		2027	0.00	0.02	0.01	0.00	0.00			7.31	720
		2028	0.00	0.02	0.01	0.00	0.00			7.10	699
		2029	0.00	0.03	0.02	0.00	0.00			11.62	1,145
		2030	-	-	-	-	-			-	-
	Phase 1		0.01	0.06	0.05	0.00	0.00			26.02	2,564
		2035	0.00	0.00	0.00	0.00	0.00			1.72	170
		2036	0.00	0.00	0.00	0.00	0.00			1.94	191
		2037	0.00	0.01	0.00	0.00	0.00			2.58	254
		2038	-	-	-	-	-			-	-
	Phase 2		0.00	0.01	0.01	0.00	0.00			6.24	615
			ROG	CO	NOX	PM10	PM2.5		CO2 (metric tons)		gals Diesel
			Emissions (tons)								
Days		2026	-	-	-	-	-				
22 Days per Month		264	2027	0.02	0.14	0.11	0.00	0.00			
		264	2028	0.02	0.13	0.10	0.00	0.00			
10.15 kg/CO2/gal		264	2029	0.03	0.21	0.15	0.01	0.00			
		220	2030	-	-	-	-				
	1144	Phase 1	0.02	0.11	0.08	0.00	0.00				
		264	2035	0.00	0.03	0.02	0.00	0.00			
		264	2036	0.00	0.03	0.02	0.00	0.00			
		264	2037	0.01	0.05	0.02	0.00	0.00			
	198	2038	-	-	-	-	-				
	792	Phase 2	0.01	0.04	0.02	0.00	0.00				
			Average Daily Emissions (pounds)								

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Paving Equipment	18	300		0.36	0.06	0.39	0.48	0.02	0.02	187.71	-	-	-	-	-	-	-
2026	August	Paving Equipment	18	300		0.36	0.06	0.39	0.48	0.02	0.02	187.71	-	-	-	-	-	-	-
2026	September	Paving Equipment	18	300		0.36	0.06	0.39	0.48	0.02	0.02	187.71	-	-	-	-	-	-	-
2026	October	Paving Equipment	18	300		0.36	0.06	0.39	0.48	0.02	0.02	187.71	-	-	-	-	-	-	-
2026	November	Paving Equipment	18	300		0.36	0.06	0.39	0.48	0.02	0.02	187.71	-	-	-	-	-	-	-
2026	December	Paving Equipment	18	300		0.36	0.06	0.39	0.48	0.02	0.02	187.71	-	-	-	-	-	-	-
2027	January	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2027	February	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2027	March	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2027	April	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2027	May	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2027	June	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2027	July	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2027	August	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2027	September	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2027	October	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2027	November	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2027	December	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2028	January	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2028	February	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2028	March	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2028	April	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2028	May	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2028	June	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2028	July	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2028	August	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2028	September	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2028	October	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2028	November	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2028	December	Paving Equipment	18	300		0.36	0.05	0.40	0.41	0.02	0.02	187.90	-	-	-	-	-	-	-
2029	January	Paving Equipment	18	300		0.36	0.06	0.40	0.43	0.02	0.02	187.75	-	-	-	-	-	-	-
2029	February	Paving Equipment	18	300		0.36	0.06	0.40	0.43	0.02	0.02	187.75	-	-	-	-	-	-	-
2029	March	Paving Equipment	18	300		0.36	0.06	0.40	0.43	0.02	0.02	187.75	-	-	-	-	-	-	-
2029	April	Paving Equipment	18	300		0.36	0.06	0.40	0.43	0.02	0.02	187.75	-	-	-	-	-	-	-
2029	May	Paving Equipment	18	300		0.36	0.06	0.40	0.43	0.02	0.02	187.75	-	-	-	-	-	-	-
2029	June	Paving Equipment	18	300		0.36	0.06	0.40	0.43	0.02	0.02	187.75	-	-	-	-	-	-	-
2029	July	Paving Equipment	18	300		0.36	0.06	0.40	0.43	0.02	0.02	187.75	-	-	-	-	-	-	-
2029	August	Paving Equipment	18	300	160	0.36	0.06	0.40	0.43	0.02	0.02	187.75	0.00	0.01	0.01	0.00	0.00	3	320
2029	September	Paving Equipment	18	300	640	0.36	0.06	0.40	0.43	0.02	0.02	187.75	0.00	0.03	0.03	0.00	0.00	13	1,279
2029	October	Paving Equipment	18	300		0.36	0.06	0.40	0.43	0.02	0.02	187.75	-	-	-	-	-	-	-
2029	November	Paving Equipment	18	300		0.36	0.06	0.40	0.43	0.02	0.02	187.75	-	-	-	-	-	-	-
2029	December	Paving Equipment	18	300		0.36	0.06	0.40	0.43	0.02	0.02	187.75	-	-	-	-	-	-	-
2030	January	Paving Equipment	18	300		0.36	0.05	0.40	0.40	0.02	0.01	187.75	-	-	-	-	-	-	-
2030	February	Paving Equipment	18	300		0.36	0.05	0.40	0.40	0.02	0.01	187.75	-	-	-	-	-	-	-
2030	March	Paving Equipment	18	300		0.36	0.05	0.40	0.40	0.02	0.01	187.75	-	-	-	-	-	-	-
2030	April	Paving Equipment	18	300		0.36	0.05	0.40	0.40	0.02	0.01	187.75	-	-	-	-	-	-	-
2030	May	Paving Equipment	18	300		0.36	0.05	0.40	0.40	0.02	0.01	187.75	-	-	-	-	-	-	-
2030	June	Paving Equipment	18	300		0.36	0.05	0.40	0.40	0.02	0.01	187.75	-	-	-	-	-	-	-
2030	July	Paving Equipment	18	300		0.36	0.05	0.40	0.40	0.02	0.01	187.75	-	-	-	-	-	-	-
2030	August	Paving Equipment	18	300		0.36	0.05	0.40	0.40	0.02	0.01	187.75	-	-	-	-	-	-	-
2030	September	Paving Equipment	18	300		0.36	0.05	0.40	0.40	0.02	0.01	187.75	-	-	-	-	-	-	-
2030	October	Paving Equipment	18	300		0.36	0.05	0.40	0.40	0.02	0.01	187.75	-	-	-	-	-	-	-

[illegible]

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Jack & Bore	16	300		0.50	0.06	0.53	0.54	0.02	0.02	264.02	-	-	-	-	-	-	-
2026	August	Jack & Bore	16	300		0.50	0.06	0.53	0.54	0.02	0.02	264.02	-	-	-	-	-	-	-
2026	September	Jack & Bore	16	300		0.50	0.06	0.53	0.54	0.02	0.02	264.02	-	-	-	-	-	-	-
2026	October	Jack & Bore	16	300		0.50	0.06	0.53	0.54	0.02	0.02	264.02	-	-	-	-	-	-	-
2026	November	Jack & Bore	16	300		0.50	0.06	0.53	0.54	0.02	0.02	264.02	-	-	-	-	-	-	-
2026	December	Jack & Bore	16	300		0.50	0.06	0.53	0.54	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	January	Jack & Bore	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	February	Jack & Bore	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	March	Jack & Bore	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	April	Jack & Bore	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	May	Jack & Bore	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	June	Jack & Bore	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	July	Jack & Bore	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	August	Jack & Bore	16	300	64	0.50	0.06	0.53	0.52	0.02	0.02	264.02	0.00	0.01	0.01	0.00	0.00	3	250
2027	September	Jack & Bore	16	300	168	0.50	0.06	0.53	0.52	0.02	0.02	264.02	0.00	0.01	0.01	0.00	0.00	7	656
2027	October	Jack & Bore	16	300	168	0.50	0.06	0.53	0.52	0.02	0.02	264.02	0.00	0.01	0.01	0.00	0.00	7	656
2027	November	Jack & Bore	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2027	December	Jack & Bore	16	300		0.50	0.06	0.53	0.52	0.02	0.02	264.02	-	-	-	-	-	-	-
2028	January	Jack & Bore	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	February	Jack & Bore	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	March	Jack & Bore	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	April	Jack & Bore	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	May	Jack & Bore	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	June	Jack & Bore	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	July	Jack & Bore	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	August	Jack & Bore	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	September	Jack & Bore	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	October	Jack & Bore	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	November	Jack & Bore	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2028	December	Jack & Bore	16	300		0.50	0.06	0.53	0.51	0.02	0.02	263.59	-	-	-	-	-	-	-
2029	January	Jack & Bore	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	February	Jack & Bore	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	March	Jack & Bore	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	April	Jack & Bore	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	May	Jack & Bore	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	June	Jack & Bore	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	July	Jack & Bore	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	August	Jack & Bore	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	September	Jack & Bore	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	October	Jack & Bore	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	November	Jack & Bore	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2029	December	Jack & Bore	16	300		0.50	0.06	0.53	0.49	0.02	0.01	263.88	-	-	-	-	-	-	-
2030	January	Jack & Bore	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	February	Jack & Bore	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	March	Jack & Bore	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	April	Jack & Bore	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	May	Jack & Bore	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	June	Jack & Bore	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	July	Jack & Bore	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	August	Jack & Bore	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	September	Jack & Bore	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	October	Jack & Bore	16	300		0.50	0.05	0.52	0.44	0.01	0.01	263.95	-	-	-	-	-	-	-

22 Days per Month 10.15 kg/CO2/gal	Days	2026	-	-	-	-	-	-	-
		2027	0.00	0.04	0.03	0.00	0.00	15.84	1,561
		2028	-	-	-	-	-	-	-
		2029	-	-	-	-	-	-	-
		2030	-	-	-	-	-	-	-
		Phase 1	0.00	0.04	0.03	0.00	0.00	15.84	1,561
		2035	-	-	-	-	-	-	-
		2036	-	-	-	-	-	-	-
		2037	-	-	-	-	-	-	-
		2038	-	-	-	-	-	-	-
		Phase 2	-	-	-	-	-	-	-
			ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel
			Emissions (tons)						
		132	2026	-	-	-	-	-	-
		264	2027	0.03	0.27	0.26	0.01	0.01	
		264	2028	-	-	-	-	-	
		264	2029	-	-	-	-	-	
		220	2030	-	-	-	-	-	
		1144	Phase 1	0.01	0.06	0.06	0.00	0.00	
		264	2035	-	-	-	-	-	
264	2036	-	-	-	-	-			
264	2037	-	-	-	-	-			
198	2038	-	-	-	-	-			
792	Phase 2	-	-	-	-	-			
	Average Daily Emissions (pounds)								

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	
2026	July	Fuel Truck	17	325		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-
2026	August	Fuel Truck	17	325	96	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.01	0.01	0.00	0.00	2
2026	September	Fuel Truck	17	325	168	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.01	0.01	0.00	0.00	4
2026	October	Fuel Truck	17	325	176	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.01	0.01	0.00	0.00	4
2026	November	Fuel Truck	17	325	144	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.01	0.01	0.00	0.00	4
2026	December	Fuel Truck	17	325	160	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.01	0.01	0.00	0.00	4
2027	January	Fuel Truck	17	325	152	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	February	Fuel Truck	17	325	152	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	March	Fuel Truck	17	325	184	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	5
2027	April	Fuel Truck	17	325	176	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	May	Fuel Truck	17	325	160	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	June	Fuel Truck	17	325	176	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	July	Fuel Truck	17	325	168	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	August	Fuel Truck	17	325	176	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	September	Fuel Truck	17	325	168	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	October	Fuel Truck	17	325	168	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	November	Fuel Truck	17	325	152	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	December	Fuel Truck	17	325	168	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2028	January	Fuel Truck	17	325	152	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	February	Fuel Truck	17	325	160	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	March	Fuel Truck	17	325	184	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	5
2028	April	Fuel Truck	17	325	160	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	May	Fuel Truck	17	325	176	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	June	Fuel Truck	17	325	176	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	July	Fuel Truck	17	325	152	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	August	Fuel Truck	17	325	184	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	5
2028	September	Fuel Truck	17	325	160	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	October	Fuel Truck	17	325	176	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	November	Fuel Truck	17	325	152	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	December	Fuel Truck	17	325	152	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2029	January	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	February	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	March	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	April	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	May	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	June	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	July	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	August	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	5
2029	September	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	October	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	November	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	December	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	January	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	February	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	March	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	April	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	May	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	June	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	July	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	August	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	September	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	October	Fuel Truck	17	325	32	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1

2035	January	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	February	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	March	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	April	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	May	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	June	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	July	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	August	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	September	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	October	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	November	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	December	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	January	Fuel Truck	17	325	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	February	Fuel Truck	17	325	144	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	354
2036	March	Fuel Truck	17	325	168	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	413
2036	April	Fuel Truck	17	325	176	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	433
2036	May	Fuel Truck	17	325	176	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	433
2036	June	Fuel Truck	17	325	168	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	413
2036	July	Fuel Truck	17	325	184	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	5	453
2036	August	Fuel Truck	17	325	168	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	413
2036	September	Fuel Truck	17	325	176	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	433
2036	October	Fuel Truck	17	325	184	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	5	453
2036	November	Fuel Truck	17	325	160	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	394
2036	December	Fuel Truck	17	325	184	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	5	453
2037	January	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	433
2037	February	Fuel Truck	17	325	160	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	394
2037	March	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	433
2037	April	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	433
2037	May	Fuel Truck	17	325	168	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	413
2037	June	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	433
2037	July	Fuel Truck	17	325	184	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	5	453
2037	August	Fuel Truck	17	325	168	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	413
2037	September	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	433
2037	October	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	433
2037	November	Fuel Truck	17	325	168	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	413
2037	December	Fuel Truck	17	325	184	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	5	453
2038	January	Fuel Truck	17	325	168	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	413
2038	February	Fuel Truck	17	325	160	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	394
2038	March	Fuel Truck	17	325	184	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	5	453
2038	April	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	433
2038	May	Fuel Truck	17	325	168	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	413
2038	June	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	433
2038	July	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	433
2038	August	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	433
2038	September	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	433

22 Days per Month	10.15 kg/CO2/gal	2026	0.01	0.05	0.04	0.00	0.00	18.57	1,829
		2027	0.02	0.12	0.10	0.00	0.00	49.90	4,916
		2028	0.02	0.12	0.09	0.00	0.00	49.53	4,880
		2029	0.02	0.12	0.08	0.00	0.00	49.55	4,882
		2030	0.01	0.09	0.06	0.00	0.00	38.16	3,760
		Phase 1	0.07	0.50	0.38	0.01	0.01	205.71	20,267
		2035	-	-	-	-	-	-	-
		2036	0.02	0.11	0.05	0.00	0.00	47.15	4,645
		2037	0.02	0.12	0.05	0.00	0.00	52.15	5,138
		2038	0.01	0.09	0.04	0.00	0.00	38.96	3,838
Days	Emissions (tons)	Phase 2	0.05	0.33	0.15	0.01	0.01	138.26	13,621
		ROG						CO2 (metric tons)	gals Diesel
		CO							
		NOX							
		PM10							
		PM2.5							
		2026	0.10	0.69	0.59	0.02	0.02		
		264 2027	0.14	0.93	0.76	0.03	0.02		
		264 2028	0.14	0.91	0.70	0.02	0.02		
		264 2029	0.13	0.90	0.64	0.02	0.02		
Average Daily Emissions (pounds)		220 2030	0.12	0.83	0.56	0.02	0.02		
		1144 Phase 1	0.13	0.87	0.66	0.02	0.02		
		264 2035	-	-	-	-	-		
		264 2036	0.12	0.85	0.40	0.02	0.01		
		264 2037	0.13	0.93	0.42	0.02	0.01		
		198 2038	0.13	0.93	0.41	0.02	0.01		
		792 Phase 2	0.11	0.82	0.38	0.01	0.01		

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Supervisor Truck	11	300		0.38	0.07	0.47	0.41	0.02	0.01	200.94	-	-	-	-	-	-	-
2026	August	Supervisor Truck	11	300	144	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.01	0.01	0.00	0.00	3	325
2026	September	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.01	0.01	0.00	0.00	6	569
2026	October	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.02	0.01	0.00	0.00	6	596
2026	November	Supervisor Truck	11	300	216	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	487
2026	December	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	542
2027	January	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	5	515
2027	February	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	5	515
2027	March	Supervisor Truck	11	300	276	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.02	0.01	0.00	0.00	6	623
2027	April	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.02	0.01	0.00	0.00	6	596
2027	May	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	5	542
2027	June	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.02	0.01	0.00	0.00	6	596
2027	July	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	6	569
2027	August	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.02	0.01	0.00	0.00	6	596
2027	September	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	6	569
2027	October	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	6	569
2027	November	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	5	515
2027	December	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	6	569
2028	January	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	515
2028	February	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	542
2028	March	Supervisor Truck	11	300	276	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.02	0.01	0.00	0.00	6	623
2028	April	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	542
2028	May	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.02	0.01	0.00	0.00	6	596
2028	June	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.02	0.01	0.00	0.00	6	596
2028	July	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	515
2028	August	Supervisor Truck	11	300	276	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.02	0.01	0.00	0.00	6	623
2028	September	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	542
2028	October	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.02	0.01	0.00	0.00	6	596
2028	November	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	515
2028	December	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	515
2029	January	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	542
2029	February	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	515
2029	March	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.02	0.01	0.00	0.00	6	596
2029	April	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	6	569
2029	May	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.02	0.01	0.00	0.00	6	596
2029	June	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	6	569
2029	July	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	542
2029	August	Supervisor Truck	11	300	276	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.02	0.01	0.00	0.00	6	623
2029	September	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	515
2029	October	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.02	0.01	0.00	0.00	6	596
2029	November	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	6	569
2029	December	Supervisor Truck	11	300	216	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	488
2030	January	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	542
2030	February	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	515
2030	March	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	6	569
2030	April	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.02	0.01	0.00	0.00	6	596
2030	May	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.02	0.01	0.00	0.00	6	596
2030	June	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	542
2030	July	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	6	569
2030	August	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.02	0.01	0.00	0.00	6	596
2030	September	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	542
2030	October	Supervisor Truck	11	300	48	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	1	108

2035	January	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	February	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	March	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	April	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	May	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	June	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	July	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	August	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	September	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	October	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	November	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	December	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2036	January	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.24	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2036	February	Supervisor Truck	11	300	136	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	3	307
2036	March	Supervisor Truck	11	300	168	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	379
2036	April	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2036	May	Supervisor Truck	11	300	168	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	379
2036	June	Supervisor Truck	11	300	168	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	379
2036	July	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2036	August	Supervisor Truck	11	300	168	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	379
2036	September	Supervisor Truck	11	300	168	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	379
2036	October	Supervisor Truck	11	300	184	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	415
2036	November	Supervisor Truck	11	300	136	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	3	307
2036	December	Supervisor Truck	11	300	152	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	3	343
2037	January	Supervisor Truck	11	300	152	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	3	343
2037	February	Supervisor Truck	11	300	152	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	3	343
2037	March	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2037	April	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2037	May	Supervisor Truck	11	300	160	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	4	361
2037	June	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2037	July	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2037	August	Supervisor Truck	11	300	168	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	4	379
2037	September	Supervisor Truck	11	300	168	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	4	379
2037	October	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2037	November	Supervisor Truck	11	300	144	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	3	325
2037	December	Supervisor Truck	11	300	160	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	4	361
2038	January	Supervisor Truck	11	300	152	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	3	343
2038	February	Supervisor Truck	11	300	160	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	4	361
2038	March	Supervisor Truck	11	300	184	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	415
2038	April	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2038	May	Supervisor Truck	11	300	168	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	4	379
2038	June	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2038	July	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2038	August	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2038	September	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397

22 Days per Month 10.15 kg/CO2/gal	Phase 1	2026	0.01	0.07	0.06	0.00	0.00	25.56	2,519
		2027	0.03	0.18	0.15	0.01	0.01	68.73	6,771
		2028	0.03	0.18	0.14	0.01	0.01	68.17	6,717
		2029	0.03	0.18	0.14	0.01	0.00	68.20	6,719
		2030	0.02	0.14	0.10	0.00	0.00	52.52	5,175
		Phase 1	0.11	0.73	0.59	0.02	0.02	283.18	27,900
		2035	-	-	-	-	-	-	-
		2036	0.01	0.10	0.05	0.00	0.00	41.25	4,064
		2037	0.02	0.11	0.06	0.00	0.00	45.46	4,479
		2038	0.01	0.09	0.04	0.00	0.00	35.38	3,486
	Phase 2	2026	0.04	0.30	0.16	0.01	0.01	122.09	12,029
		ROG						CO2 (metric tons)	gals Diesel
		CO							
		NOX							
		PM10							
		PM2.5							
		Days							
		132	2026	0.15	0.99	0.86	0.03	0.03	
		264	2027	0.20	1.34	1.12	0.04	0.04	
		264	2028	0.20	1.33	1.06	0.04	0.04	
		264	2029	0.20	1.33	1.06	0.04	0.04	
		220	2030	0.18	1.23	0.91	0.03	0.03	
		1144	Phase 1	0.19	1.27	1.02	0.04	0.04	
	Average Daily Emissions (pounds)	264	2035	-	-	-	-	-	
		264	2036	0.11	0.78	0.41	0.02	0.02	
		264	2037	0.11	0.86	0.43	0.02	0.02	
		198	2038	0.12	0.89	0.45	0.02	0.02	
		792	Phase 2	0.10	0.77	0.39	0.02	0.01	

		Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)			
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel	
2026	July	Dump Truck	17	400		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-	
2026	August	Dump Truck	17	400		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-	
2026	September	Dump Truck	17	400	50	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.00	0.00	0.00	0.00	2	151	
2026	October	Dump Truck	17	400	44	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.00	0.00	0.00	0.00	1	133	
2026	November	Dump Truck	17	400	100	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.01	0.01	0.00	0.00	3	303	
2026	December	Dump Truck	17	400	732	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.01	0.06	0.05	0.00	0.00	22	2,215	
2027	January	Dump Truck	17	400	646	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.01	0.05	0.04	0.00	0.00	20	1,954	
2027	February	Dump Truck	17	400	678	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.01	0.05	0.04	0.00	0.00	21	2,051	
2027	March	Dump Truck	17	400	910	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.01	0.07	0.06	0.00	0.00	28	2,753	
2027	April	Dump Truck	17	400	548	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.01	0.04	0.03	0.00	0.00	17	1,658	
2027	May	Dump Truck	17	400	40	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	1	121	
2027	June	Dump Truck	17	400	44	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	1	133	
2027	July	Dump Truck	17	400	42	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	1	127	
2027	August	Dump Truck	17	400	108	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	3	327	
2027	September	Dump Truck	17	400	210	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.02	0.01	0.00	0.00	6	635	
2027	October	Dump Truck	17	400	210	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.02	0.01	0.00	0.00	6	635	
2027	November	Dump Truck	17	400	230	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.02	0.01	0.00	0.00	7	696	
2027	December	Dump Truck	17	400	378	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.03	0.02	0.00	0.00	12	1,144	
2028	January	Dump Truck	17	400	710	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.01	0.05	0.04	0.00	0.00	22	2,149	
2028	February	Dump Truck	17	400	572	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.01	0.04	0.03	0.00	0.00	18	1,732	
2028	March	Dump Truck	17	400		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-	
2028	April	Dump Truck	17	400		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-	
2028	May	Dump Truck	17	400		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-	
2028	June	Dump Truck	17	400	560	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.01	0.04	0.03	0.00	0.00	17	1,695	
2028	July	Dump Truck	17	400	1520	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.02	0.11	0.09	0.00	0.00	47	4,601	
2028	August	Dump Truck	17	400	1186	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.01	0.09	0.07	0.00	0.00	36	3,590	
2028	September	Dump Truck	17	400	200	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	6	605	
2028	October	Dump Truck	17	400	220	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.02	0.01	0.00	0.00	7	666	
2028	November	Dump Truck	17	400	38	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	1	115	
2028	December	Dump Truck	17	400	110	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	3	333	
2029	January	Dump Truck	17	400	200	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	6	606	
2029	February	Dump Truck	17	400	94	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	285	
2029	March	Dump Truck	17	400	140	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4	424	
2029	April	Dump Truck	17	400	264	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.02	0.01	0.00	0.00	8	799	
2029	May	Dump Truck	17	400	176	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	5	533	
2029	June	Dump Truck	17	400	456	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.01	0.03	0.02	0.00	0.00	14	1,381	
2029	July	Dump Truck	17	400	3200	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.04	0.24	0.17	0.01	0.01	98	9,691	
2029	August	Dump Truck	17	400	3496	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.04	0.26	0.18	0.01	0.01	107	10,587	
2029	September	Dump Truck	17	400	2888	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.03	0.21	0.15	0.01	0.00	89	8,746	
2029	October	Dump Truck	17	400	3560	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.04	0.26	0.19	0.01	0.01	109	10,781	
2029	November	Dump Truck	17	400	1064	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.01	0.08	0.06	0.00	0.00	33	3,222	
2029	December	Dump Truck	17	400		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-	
2030	January	Dump Truck	17	400		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-	
2030	February	Dump Truck	17	400		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-	
2030	March	Dump Truck	17	400		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-	
2030	April	Dump Truck	17	400		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-	
2030	May	Dump Truck	17	400		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-	
2030	June	Dump Truck	17	400		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-	
2030	July	Dump Truck	17	400		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-	
2030	August	Dump Truck	17	400	320	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.02	0.02	0.00	0.00	10	969	
2030	September	Dump Truck	17	400	240	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.02	0.01	0.00	0.00	7	727	
2030	October	Dump Truck	17	400		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	January	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	February	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	March	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	April	Dump Truck	17	400	288	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.02	0.01	0.00	0.00	9	872	
2035	May	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	June	Dump Truck	17	400	288	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.02	0.01	0.00	0.00	9	872	
2035	July	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	August	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	September	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	October	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	November	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	December	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2036	January	Dump Truck	17	400	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-	
2036	February	Dump Truck	17	400	304	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.02	0.01	0.00	0.00	9	921	
2036	March	Dump Truck	17	400	240	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.02	0.01	0.00	0.00	7	727	
2036	April	Dump Truck	17	400	0	0.38</														

22 Days per Month 10.15 kg/CO2/gal	Days	2026	0.01	0.07	0.06	0.00	0.00	28.44	2,802		
			2027	0.05	0.30	0.25	0.01	0.01	124.18	12,235	
			2028	0.06	0.38	0.29	0.01	0.01	157.19	15,487	
			2029	0.17	1.15	0.82	0.03	0.03	477.60	47,054	
			2030	0.01	0.04	0.03	0.00	0.00	17.21	1,696	
			Phase 1	0.29	1.95	1.45	0.05	0.05	804.63	79,274	
			2035	0.01	0.04	0.02	0.00	0.00	17.70	1,744	
			2036	0.03	0.24	0.12	0.00	0.00	103.09	10,157	
			2037	0.02	0.18	0.08	0.00	0.00	74.75	7,365	
			2038	0.06	0.43	0.19	0.01	0.01	182.21	17,952	
			Phase 2	0.12	0.89	0.41	0.02	0.01	377.76	37,218	
			ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel		
			Emissions (tons)								
			2026	0.16	1.06	0.91	0.03	0.03			
			264	2027	0.35	2.31	1.89	0.07	0.06		
			264	2028	0.43	2.90	2.21	0.08	0.07		
			264	2029	1.29	8.70	6.20	0.22	0.20		
			220	2030	0.05	0.37	0.25	0.01	0.01		
			1144	Phase 1	0.51	3.40	2.53	0.09	0.08		
			264	2035	0.04	0.32	0.16	0.01	0.01		
264	2036	0.26	1.85	0.88	0.03	0.03					
264	2037	0.18	1.34	0.60	0.02	0.02					
198	2038	0.60	4.34	1.94	0.07	0.07					
792	Phase 2	0.31	2.25	1.03	0.04	0.04					
Average Daily Emissions (pounds)											

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)		
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Haul Truck	17	325		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	August	Haul Truck	17	325		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	September	Haul Truck	17	325		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	October	Haul Truck	17	325		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	November	Haul Truck	17	325	272	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.02	0.01	0.00	0.00	7	669
2026	December	Haul Truck	17	325	288	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.02	0.02	0.00	0.00	7	708
2027	January	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	February	Haul Truck	17	325	4	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	0	10
2027	March	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	April	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	May	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	June	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	July	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	August	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	September	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	October	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	November	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	December	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2028	January	Haul Truck	17	325		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	February	Haul Truck	17	325	88	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.00	0.00	0.00	2	216
2028	March	Haul Truck	17	325	12	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	30
2028	April	Haul Truck	17	325	4	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	10
2028	May	Haul Truck	17	325		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	June	Haul Truck	17	325	6	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	14
2028	July	Haul Truck	17	325	10	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	26
2028	August	Haul Truck	17	325	82	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	2	201
2028	September	Haul Truck	17	325	14	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	35
2028	October	Haul Truck	17	325		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	November	Haul Truck	17	325		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	December	Haul Truck	17	325		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-
2029	January	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	February	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	March	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	April	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	May	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	June	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	July	Haul Truck	17	325	14	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	35
2029	August	Haul Truck	17	325	2	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	4
2029	September	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	October	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	November	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	December	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	January	Haul Truck	17	325		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	February	Haul Truck	17	325		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	March	Haul Truck	17	325		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	April	Haul Truck	17	325		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	May	Haul Truck	17	325		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	June	Haul Truck	17	325	28	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	69
2030	July	Haul Truck	17	325	156	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4	384
2030	August	Haul Truck	17	325	16	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	39
2030	September	Haul Truck	17	325		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	October	Haul Truck	17	325		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-

2035	January	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	February	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	March	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	April	Haul Truck	17	325	15.2	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	37
2035	May	Haul Truck	17	325	0.8	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	2
2035	June	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	July	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	August	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	September	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	October	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	November	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	December	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	January	Haul Truck	17	325	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	February	Haul Truck	17	325	96	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	2	236
2036	March	Haul Truck	17	325	32	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	79
2036	April	Haul Truck	17	325	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	May	Haul Truck	17	325	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	June	Haul Truck	17	325	40	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	98
2036	July	Haul Truck	17	325	216	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	5	531
2036	August	Haul Truck	17	325	138.2	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	340
2036	September	Haul Truck	17	325	180.6	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	5	444
2036	October	Haul Truck	17	325	105.2	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	259
2036	November	Haul Truck	17	325	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	December	Haul Truck	17	325	8	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	20
2037	January	Haul Truck	17	325	13.6	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	33
2037	February	Haul Truck	17	325	2.4	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	6
2037	March	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	April	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	May	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	June	Haul Truck	17	325	24	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	59
2037	July	Haul Truck	17	325	144.8	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	356
2037	August	Haul Truck	17	325	7.2	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	18
2037	September	Haul Truck	17	325	40	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	98
2037	October	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	November	Haul Truck	17	325	7.2	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	18
2037	December	Haul Truck	17	325	0.8	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	2
2038	January	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	February	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	March	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	April	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	May	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	June	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	July	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	August	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	September	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-

22 Days per Month	10.15 kg/CO2/gal	2026	0.01	0.03	0.03	0.00	0.00	13.98	1,377
		2027	0.00	0.00	0.00	0.00	0.00	0.10	10
		2028	0.00	0.01	0.01	0.00	0.00	5.39	531
		2029	0.00	0.00	0.00	0.00	0.00	0.40	39
		2030	0.00	0.01	0.01	0.00	0.00	4.99	492
		Phase 1	0.01	0.06	0.05	0.00	0.00	24.86	2,450
		2035	0.00	0.00	0.00	0.00	0.00	0.40	39
		2036	0.01	0.05	0.02	0.00	0.00	20.38	2,008
		2037	0.00	0.01	0.01	0.00	0.00	5.99	591
		2038	-	-	-	-	-	-	-
Days	Average Daily Emissions (pounds)	Phase 2	0.01	0.06	0.03	0.00	0.00	26.77	2,638
		ROG		CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel
		132	2026	0.08	0.52	0.45	0.02	0.01	
		264	2027	0.00	0.00	0.00	0.00	0.00	
		264	2028	0.01	0.10	0.08	0.00	0.00	
		264	2029	0.00	0.01	0.01	0.00	0.00	
		220	2030	0.02	0.11	0.07	0.00	0.00	
		1144	Phase 1	0.02	0.11	0.08	0.00	0.00	
		264	2035	0.00	0.01	0.00	0.00	0.00	
		264	2036	0.05	0.37	0.17	0.01	0.01	
198	792	2037	0.01	0.11	0.05	0.00	0.00		
		2038	-	-	-	-	-		
		Phase 2	0.02	0.16	0.08	0.00	0.00		

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)		
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Concrete Truck	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	August	Concrete Truck	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	September	Concrete Truck	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	October	Concrete Truck	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	November	Concrete Truck	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	December	Concrete Truck	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2027	January	Concrete Truck	17	350	136	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4	360
2027	February	Concrete Truck	17	350	168	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	5	445
2027	March	Concrete Truck	17	350	48	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	1	127
2027	April	Concrete Truck	17	350	24	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	1	64
2027	May	Concrete Truck	17	350	328	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.02	0.02	0.00	0.00	9	868
2027	June	Concrete Truck	17	350		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	July	Concrete Truck	17	350	16	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	0	42
2027	August	Concrete Truck	17	350	112	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	3	296
2027	September	Concrete Truck	17	350	160	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4	424
2027	October	Concrete Truck	17	350	120	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	3	318
2027	November	Concrete Truck	17	350	40	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	1	106
2027	December	Concrete Truck	17	350	128	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	3	339
2028	January	Concrete Truck	17	350	40	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	1	106
2028	February	Concrete Truck	17	350	256	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.02	0.01	0.00	0.00	7	678
2028	March	Concrete Truck	17	350	296	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.02	0.01	0.00	0.00	8	784
2028	April	Concrete Truck	17	350		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	May	Concrete Truck	17	350	112	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	3	297
2028	June	Concrete Truck	17	350	96	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.00	0.00	0.00	3	254
2028	July	Concrete Truck	17	350		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	August	Concrete Truck	17	350	122	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	3	324
2028	September	Concrete Truck	17	350	64	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	2	170
2028	October	Concrete Truck	17	350	66	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	2	174
2028	November	Concrete Truck	17	350	15	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	40
2028	December	Concrete Truck	17	350	39	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	1	104
2029	January	Concrete Truck	17	350	72	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	2	191
2029	February	Concrete Truck	17	350	735	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.01	0.05	0.03	0.00	0.00	20	1,948
2029	March	Concrete Truck	17	350	1774	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.02	0.11	0.08	0.00	0.00	48	4,702
2029	April	Concrete Truck	17	350	1232	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.01	0.08	0.06	0.00	0.00	33	3,265
2029	May	Concrete Truck	17	350	176	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	5	466
2029	June	Concrete Truck	17	350	8	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	21
2029	July	Concrete Truck	17	350	128	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	3	339
2029	August	Concrete Truck	17	350	24	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	64
2029	September	Concrete Truck	17	350	24	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	64
2029	October	Concrete Truck	17	350	24	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	64
2029	November	Concrete Truck	17	350	56	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	2	148
2029	December	Concrete Truck	17	350		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	January	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	February	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	March	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	April	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	May	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	June	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	July	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	August	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	September	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	October	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-

2035	January	Concrete Truck	17	350	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	February	Concrete Truck	17	350	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	March	Concrete Truck	17	350	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	April	Concrete Truck	17	350	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	May	Concrete Truck	17	350	96	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	254
2035	June	Concrete Truck	17	350	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	July	Concrete Truck	17	350	96	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	254
2035	August	Concrete Truck	17	350	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	September	Concrete Truck	17	350	96	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	254
2035	October	Concrete Truck	17	350	48	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	127
2035	November	Concrete Truck	17	350	56	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	2	148
2035	December	Concrete Truck	17	350	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	January	Concrete Truck	17	350	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	February	Concrete Truck	17	350	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	March	Concrete Truck	17	350	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	April	Concrete Truck	17	350	88	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	2	233
2036	May	Concrete Truck	17	350	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	June	Concrete Truck	17	350	128	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	339
2036	July	Concrete Truck	17	350	16	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	42
2036	August	Concrete Truck	17	350	40.8	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	108
2036	September	Concrete Truck	17	350	8.8	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	23
2036	October	Concrete Truck	17	350	9.2	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	24
2036	November	Concrete Truck	17	350	241.2	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.02	0.01	0.00	0.00	6	639
2036	December	Concrete Truck	17	350	16	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	42
2037	January	Concrete Truck	17	350	120	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	318
2037	February	Concrete Truck	17	350	48	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	127
2037	March	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	April	Concrete Truck	17	350	40	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	106
2037	May	Concrete Truck	17	350	112	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	297
2037	June	Concrete Truck	17	350	112	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	297
2037	July	Concrete Truck	17	350	24	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	64
2037	August	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	September	Concrete Truck	17	350	32	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	85
2037	October	Concrete Truck	17	350	80	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	2	212
2037	November	Concrete Truck	17	350	80	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	2	212
2037	December	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	January	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	February	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	March	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	April	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	May	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	June	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	July	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	August	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	September	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-

	2026	-	-	-	-	-	-	-
	2027	0.01	0.08	0.07	0.00	0.00	34.39	3,389
	2028	0.01	0.07	0.06	0.00	0.00	29.74	2,931
	2029	0.04	0.28	0.20	0.01	0.01	114.40	11,271
	2030	-	-	-	-	-	-	-
Phase 1		0.06	0.43	0.32	0.01	0.01	178.54	17,590
	2035	0.00	0.03	0.01	0.00	0.00	10.54	1,039
	2036	0.00	0.03	0.02	0.00	0.00	14.74	1,452
	2037	0.01	0.04	0.02	0.00	0.00	17.43	1,717
	2038	-	-	-	-	-	-	-
Phase 2		0.01	0.10	0.05	0.00	0.00	42.71	4,208
		ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel
Days		Emissions (tons)						
132	2026	-	-	-	-	-		
264	2027	0.10	0.64	0.52	0.02	0.02		
264	2028	0.08	0.55	0.42	0.01	0.01		
264	2029	0.31	2.08	1.48	0.05	0.05		
220	2030	-	-	-	-	-		
1144	Phase 1	0.11	0.76	0.56	0.02	0.02		
264	2035	0.03	0.19	0.10	0.00	0.00		
264	2036	0.04	0.26	0.13	0.00	0.00		
264	2037	0.04	0.31	0.14	0.01	0.00		
198	2038	-	-	-	-	-		
792	Phase 2	0.04	0.26	0.12	0.00	0.00		
		Average Daily Emissions (pounds)						

		Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)			
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel	
2026	July	Porta Can Truck	11	200		0.38	0.07	0.47	0.41	0.02	0.01	200.94	-	-	-	-	-	-	-	
2026	August	Porta Can Truck	11	200	96	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.00	0.00	0.00	0.00	1	144	
2026	September	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.01	0.01	0.00	0.00	3	253	
2026	October	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.01	0.01	0.00	0.00	3	265	
2026	November	Porta Can Truck	11	200	144	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.01	0.00	0.00	0.00	2	217	
2026	December	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.01	0.01	0.00	0.00	2	241	
2027	January	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.00	0.00	0.00	2	229	
2027	February	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.00	0.00	0.00	2	229	
2027	March	Porta Can Truck	11	200	184	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	3	277	
2027	April	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	3	265	
2027	May	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	2	241	
2027	June	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	3	265	
2027	July	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	3	253	
2027	August	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	3	265	
2027	September	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	3	253	
2027	October	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	3	253	
2027	November	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.00	0.00	0.00	2	229	
2027	December	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	3	253	
2028	January	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.00	0.00	0.00	2	229	
2028	February	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	2	241	
2028	March	Porta Can Truck	11	200	184	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	3	277	
2028	April	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	2	241	
2028	May	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	3	265	
2028	June	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	3	265	
2028	July	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.00	0.00	0.00	2	229	
2028	August	Porta Can Truck	11	200	184	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	3	277	
2028	September	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	2	241	
2028	October	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	3	265	
2028	November	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.00	0.00	0.00	2	229	
2028	December	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.00	0.00	0.00	2	229	
2029	January	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	2	241	
2029	February	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2	229	
2029	March	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3	265	
2029	April	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3	253	
2029	May	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3	265	
2029	June	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3	253	
2029	July	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	2	241	
2029	August	Porta Can Truck	11	200	184	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3	277	
2029	September	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2	229	
2029	October	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3	265	
2029	November	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3	253	
2029	December	Porta Can Truck	11	200	144	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2	217	
2030	January	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2	241	
2030	February	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2	229	
2030	March	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253	
2030	April	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3	265	
2030	May	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3	265	
2030	June	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2	241	
2030	July	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253	
2030	August	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3	265	
2030	September	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2	241	
2030	October	Porta Can Truck	11	200	32	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	0	48	

2035	January	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	February	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	March	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	April	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	May	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	June	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	July	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	August	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	September	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	October	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	November	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	December	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2036	January	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.24	0.01	0.01	201.01	-	-	-	-	-	-	-
2036	February	Porta Can Truck	11	200	144	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2	217
2036	March	Porta Can Truck	11	200	168	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253
2036	April	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2036	May	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2036	June	Porta Can Truck	11	200	168	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253
2036	July	Porta Can Truck	11	200	184	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	277
2036	August	Porta Can Truck	11	200	168	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253
2036	September	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2036	October	Porta Can Truck	11	200	184	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	277
2036	November	Porta Can Truck	11	200	160	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2	241
2036	December	Porta Can Truck	11	200	184	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	277
2037	January	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2037	February	Porta Can Truck	11	200	160	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2	241
2037	March	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2037	April	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2037	May	Porta Can Truck	11	200	168	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253
2037	June	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2037	July	Porta Can Truck	11	200	184	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	277
2037	August	Porta Can Truck	11	200	168	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253
2037	September	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2037	October	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2037	November	Porta Can Truck	11	200	168	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253
2037	December	Porta Can Truck	11	200	184	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	277
2038	January	Porta Can Truck	11	200	168	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253
2038	February	Porta Can Truck	11	200	160	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2	241
2038	March	Porta Can Truck	11	200	184	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	277
2038	April	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2038	May	Porta Can Truck	11	200	168	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253
2038	June	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2038	July	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2038	August	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2038	September	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265

Phase 1	2026	0.00	0.03	0.03	0.00	0.00	11.36	1,119
	2027	0.01	0.08	0.07	0.00	0.00	30.55	3,009
	2028	0.01	0.08	0.06	0.00	0.00	30.30	2,985
	2029	0.01	0.08	0.06	0.00	0.00	30.31	2,986
	2030	0.01	0.06	0.04	0.00	0.00	23.34	2,300
	Phase 1	0.05	0.32	0.26	0.01	0.01	125.86	12,400
Phase 2	2035	-	-	-	-	-	-	-
	2036	0.01	0.07	0.04	0.00	0.00	28.84	2,842
	2037	0.01	0.08	0.04	0.00	0.00	31.90	3,143
	2038	0.01	0.06	0.03	0.00	0.00	23.83	2,348
	Phase 2	0.03	0.21	0.11	0.00	0.00	84.57	8,332
		ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel
Days	Emissions (tons)							
132	2026	0.07	0.44	0.38	0.01	0.01		
264	2027	0.09	0.60	0.50	0.02	0.02		
264	2028	0.09	0.59	0.47	0.02	0.02		
264	2029	0.09	0.59	0.47	0.02	0.02		
220	2030	0.08	0.55	0.40	0.02	0.01		
1144	Phase 1	0.08	0.57	0.45	0.02	0.02		
Phase 2	2035	-	-	-	-	-		
	2036	0.07	0.54	0.29	0.01	0.01		
	2037	0.08	0.60	0.30	0.01	0.01		
	198	2038	0.08	0.60	0.30	0.01	0.01	
	792	Phase 2	0.07	0.53	0.27	0.01	0.01	
		Average Daily Emissions (pounds)						

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)		
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Compressors	1	10		0.48							-	-	-	-	-	-	-
2026	August	Compressors	1	10		0.48							-	-	-	-	-	-	-
2026	September	Compressors	1	10		0.48							-	-	-	-	-	-	-
2026	October	Compressors	1	10		0.48							-	-	-	-	-	-	-
2026	November	Compressors	1	10		0.48							-	-	-	-	-	-	-
2026	December	Compressors	1	10	24	0.48							-	-	-	-	-	-	-
2027	January	Compressors	1	10	2	0.48							-	-	-	-	-	-	-
2027	February	Compressors	1	10	2	0.48							-	-	-	-	-	-	-
2027	March	Compressors	1	10		0.48							-	-	-	-	-	-	-
2027	April	Compressors	1	10		0.48							-	-	-	-	-	-	-
2027	May	Compressors	1	10	32	0.48							-	-	-	-	-	-	-
2027	June	Compressors	1	10		0.48							-	-	-	-	-	-	-
2027	July	Compressors	1	10	16	0.48							-	-	-	-	-	-	-
2027	August	Compressors	1	10	112	0.48							-	-	-	-	-	-	-
2027	September	Compressors	1	10	72	0.48							-	-	-	-	-	-	-
2027	October	Compressors	1	10	56	0.48							-	-	-	-	-	-	-
2027	November	Compressors	1	10	40	0.48							-	-	-	-	-	-	-
2027	December	Compressors	1	10	40	0.48							-	-	-	-	-	-	-
2028	January	Compressors	1	10	56	0.48							-	-	-	-	-	-	-
2028	February	Compressors	1	10	96	0.48							-	-	-	-	-	-	-
2028	March	Compressors	1	10	120	0.48							-	-	-	-	-	-	-
2028	April	Compressors	1	10		0.48							-	-	-	-	-	-	-
2028	May	Compressors	1	10	56	0.48							-	-	-	-	-	-	-
2028	June	Compressors	1	10	56	0.48							-	-	-	-	-	-	-
2028	July	Compressors	1	10		0.48							-	-	-	-	-	-	-
2028	August	Compressors	1	10	40	0.48							-	-	-	-	-	-	-
2028	September	Compressors	1	10	8	0.48							-	-	-	-	-	-	-
2028	October	Compressors	1	10	24	0.48							-	-	-	-	-	-	-
2028	November	Compressors	1	10	24	0.48							-	-	-	-	-	-	-
2028	December	Compressors	1	10	8	0.48							-	-	-	-	-	-	-
2029	January	Compressors	1	10	16	0.48							-	-	-	-	-	-	-
2029	February	Compressors	1	10	72	0.48							-	-	-	-	-	-	-
2029	March	Compressors	1	10	176	0.48							-	-	-	-	-	-	-
2029	April	Compressors	1	10	120	0.48							-	-	-	-	-	-	-
2029	May	Compressors	1	10	16	0.48							-	-	-	-	-	-	-
2029	June	Compressors	1	10	24	0.48							-	-	-	-	-	-	-
2029	July	Compressors	1	10	16	0.48							-	-	-	-	-	-	-
2029	August	Compressors	1	10	48	0.48							-	-	-	-	-	-	-
2029	September	Compressors	1	10	48	0.48							-	-	-	-	-	-	-
2029	October	Compressors	1	10	48	0.48							-	-	-	-	-	-	-
2029	November	Compressors	1	10	8	0.48							-	-	-	-	-	-	-
2029	December	Compressors	1	10	40	0.48							-	-	-	-	-	-	-
2030	January	Compressors	1	10		0.48							-	-	-	-	-	-	-
2030	February	Compressors	1	10	80	0.48							-	-	-	-	-	-	-
2030	March	Compressors	1	10		0.48							-	-	-	-	-	-	-
2030	April	Compressors	1	10		0.48							-	-	-	-	-	-	-
2030	May	Compressors	1	10		0.48							-	-	-	-	-	-	-
2030	June	Compressors	1	10		0.48							-	-	-	-	-	-	-
2030	July	Compressors	1	10		0.48							-	-	-	-	-	-	-
2030	August	Compressors	1	10		0.48							-	-	-	-	-	-	-
2030	September	Compressors	1	10		0.48							-	-	-	-	-	-	-
2030	October	Compressors	1	10		0.48							-	-	-	-	-	-	-

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2
2026	July	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.95	-	-	-	-	-	-
2026	August	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.95	-	-	-	-	-	-
2026	September	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.95	-	-	-	-	-	-
2026	October	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.95	-	-	-	-	-	-
2026	November	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.95	-	-	-	-	-	-
2026	December	Forklift	2	100	36	0.20	0.06	3.70	0.26	0.01	0.01	105.95	0.00	0.00	0.00	0.00	0.00	8
2027	January	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2027	February	Forklift	2	100	80	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	17
2027	March	Forklift	2	100	140	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	29
2027	April	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2027	May	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2027	June	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2027	July	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2027	August	Forklift	2	100	13	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	3
2027	September	Forklift	2	100	34	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	7
2027	October	Forklift	2	100	34	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	7
2027	November	Forklift	2	100	38	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	8
2027	December	Forklift	2	100	67	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	14
2028	January	Forklift	2	100	34	0.20	0.06	3.70	0.26	0.01	0.01	105.93	0.00	0.00	0.00	0.00	0.00	7
2028	February	Forklift	2	100	72	0.20	0.06	3.70	0.26	0.01	0.01	105.93	0.00	0.01	0.00	0.00	0.00	15
2028	March	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.93	-	-	-	-	-	-
2028	April	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.93	-	-	-	-	-	-
2028	May	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.93	-	-	-	-	-	-
2028	June	Forklift	2	100	11	0.20	0.06	3.70	0.26	0.01	0.01	105.93	0.00	0.00	0.00	0.00	0.00	2
2028	July	Forklift	2	100	30	0.20	0.06	3.70	0.26	0.01	0.01	105.93	0.00	0.00	0.00	0.00	0.00	6
2028	August	Forklift	2	100	77	0.20	0.06	3.70	0.26	0.01	0.01	105.93	0.00	0.01	0.00	0.00	0.00	16
2028	September	Forklift	2	100	36	0.20	0.06	3.70	0.26	0.01	0.01	105.93	0.00	0.00	0.00	0.00	0.00	8
2028	October	Forklift	2	100	159	0.20	0.06	3.70	0.26	0.01	0.01	105.93	0.00	0.01	0.00	0.00	0.00	33
2028	November	Forklift	2	100	228	0.20	0.06	3.70	0.26	0.01	0.01	105.93	0.00	0.02	0.00	0.00	0.00	48
2028	December	Forklift	2	100	222	0.20	0.06	3.70	0.26	0.01	0.01	105.93	0.00	0.02	0.00	0.00	0.00	46
2029	January	Forklift	2	100	162	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	34
2029	February	Forklift	2	100	130	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	27
2029	March	Forklift	2	100	169	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	35
2029	April	Forklift	2	100	216	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.02	0.00	0.00	0.00	45
2029	May	Forklift	2	100	173	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	36
2029	June	Forklift	2	100	78	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	16
2029	July	Forklift	2	100	46	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	10
2029	August	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2029	September	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2029	October	Forklift	2	100	68	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	14
2029	November	Forklift	2	100	156	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	33
2029	December	Forklift	2	100	100	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	21
2030	January	Forklift	2	100	200	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.02	0.00	0.00	0.00	42
2030	February	Forklift	2	100	80	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	17
2030	March	Forklift	2	100	94	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	20
2030	April	Forklift	2	100	54	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	11
2030	May	Forklift	2	100	48	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	10
2030	June	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2030	July	Forklift	2	100	72	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	15
2030	August	Forklift	2	100	8	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	2
2030	September	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2030	October	Forklift	2	100		0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2035	January	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2035	February	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2035	March	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2035	April	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2035	May	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2035	June	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2035	July	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2035	August	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2035	September	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2035	October	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2035	November	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2035	December	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-
2036	January	Forklift	2	100	40	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	8
2036	February	Forklift	2	100	136	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	28
2036	March	Forklift	2	100	76	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	16
2036	April	Forklift	2	100	44	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	9

2036	May	Forklift	2	100	72	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	0	15
2036	June	Forklift	2	100	100	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	0	21
2036	July	Forklift	2	100	228	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.02	0.00	0.00	0.00	0	48
2036	August	Forklift	2	100	210	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.02	0.00	0.00	0.00	0	44
2036	September	Forklift	2	100	318	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.03	0.00	0.00	0.00	1	66
2036	October	Forklift	2	100	104	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	0	22
2036	November	Forklift	2	100	56	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0	12
2036	December	Forklift	2	100	32	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0	7
2037	January	Forklift	2	100	14	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0	3
2037	February	Forklift	2	100	138	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	0	29
2037	March	Forklift	2	100	72	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	0	15
2037	April	Forklift	2	100	176	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	0	37
2037	May	Forklift	2	100	22	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0	5
2037	June	Forklift	2	100	110	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	0	23
2037	July	Forklift	2	100	174	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	0	36
2037	August	Forklift	2	100	22	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0	5
2037	September	Forklift	2	100	56	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0	12
2037	October	Forklift	2	100	44	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0	9
2037	November	Forklift	2	100	36	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0	8
2037	December	Forklift	2	100	256	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.02	0.00	0.00	0.00	1	53
2038	January	Forklift	2	100	144	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.01	0.00	0.00	0.00	0	30
2038	February	Forklift	2	100	12	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0	3
2038	March	Forklift	2	100	44	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0	9
2038	April	Forklift	2	100	36	0.20	0.06	3.70	0.26	0.01	0.01	105.94	0.00	0.00	0.00	0.00	0.00	0	8
2038	May	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-	-
2038	June	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-	-
2038	July	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-	-
2038	August	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-	-
2038	September	Forklift	2	100	0	0.20	0.06	3.70	0.26	0.01	0.01	105.94	-	-	-	-	-	-	-

22 Days per Month	10.15 kg/CO2/gal	Days	2026	0.00	0.00	0.00	0.00	0.00	0.08	8		
			2027	0.00	0.03	0.00	0.00	0.00	0.86	85		
			2028	0.00	0.07	0.00	0.00	0.00	1.84	182		
			2029	0.00	0.11	0.01	0.00	0.00	2.75	271		
			2030	0.00	0.05	0.00	0.00	0.00	1.18	111		
			Phase 1	0.00	0.26	0.02	0.00	0.00	6.71	661		
			2035	-	-	-	-	-	-	-		
			2036	0.00	0.12	0.01	0.00	0.00	3.00	296		
			2037	0.00	0.09	0.01	0.00	0.00	2.37	234		
			2038	0.00	0.02	0.00	0.00	0.00	0.50	49		
			Phase 2	0.00	0.23	0.02	0.00	0.00	5.87	579		
						ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel
			Emissions (tons)									
			132	2026	0.00	0.04	0.00	0.00	0.00			
			264	2027	0.00	0.25	0.02	0.00	0.00			
			264	2028	0.01	0.54	0.04	0.00	0.00			
			264	2029	0.01	0.80	0.06	0.00	0.00			
			220	2030	0.01	0.41	0.03	0.00	0.00			
1144	Phase 1	0.01	0.45	0.03	0.00	0.00						
264	2035	-	-	-	-	-						
264	2036	0.01	0.88	0.06	0.00	0.00						
264	2037	0.01	0.69	0.05	0.00	0.00						
198	2038	0.00	0.19	0.01	0.00	0.00						
792	Phase 2	0.01	0.57	0.04	0.00	0.00						
Average Daily Emissions (pounds)												

10.15 kg/CO2/gal

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)		
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.14	-	-	-	-	-	-	-
2026	August	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.14	-	-	-	-	-	-	-
2026	September	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.14	-	-	-	-	-	-	-
2026	October	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.14	-	-	-	-	-	-	-
2026	November	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.14	-	-	-	-	-	-	-
2026	December	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.14	-	-	-	-	-	-	-
2027	January	Long Reach Forklift	3	125	14	0.20	0.06	2.20	0.26	0.01	0.01	212.20	0.00	0.00	0.00	0.00	0.00	0	7
2027	February	Long Reach Forklift	3	125	66	0.20	0.06	2.20	0.26	0.01	0.01	212.20	0.00	0.00	0.00	0.00	0.00	0	34
2027	March	Long Reach Forklift	3	125	22	0.20	0.06	2.20	0.26	0.01	0.01	212.20	0.00	0.00	0.00	0.00	0.00	0	11
2027	April	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.20	-	-	-	-	-	-	-
2027	May	Long Reach Forklift	3	125	4	0.20	0.06	2.20	0.26	0.01	0.01	212.20	0.00	0.00	0.00	0.00	0.00	0	2
2027	June	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.20	-	-	-	-	-	-	-
2027	July	Long Reach Forklift	3	125	4	0.20	0.06	2.20	0.26	0.01	0.01	212.20	0.00	0.00	0.00	0.00	0.00	0	2
2027	August	Long Reach Forklift	3	125	28	0.20	0.06	2.20	0.26	0.01	0.01	212.20	0.00	0.00	0.00	0.00	0.00	0	15
2027	September	Long Reach Forklift	3	125	4	0.20	0.06	2.20	0.26	0.01	0.01	212.20	0.00	0.00	0.00	0.00	0.00	0	2
2027	October	Long Reach Forklift	3	125	2	0.20	0.06	2.20	0.26	0.01	0.01	212.20	0.00	0.00	0.00	0.00	0.00	0	1
2027	November	Long Reach Forklift	3	125	10	0.20	0.06	2.20	0.26	0.01	0.01	212.20	0.00	0.00	0.00	0.00	0.00	0	5
2027	December	Long Reach Forklift	3	125	22	0.20	0.06	2.20	0.26	0.01	0.01	212.20	0.00	0.00	0.00	0.00	0.00	0	11
2028	January	Long Reach Forklift	3	125	66	0.20	0.06	2.20	0.26	0.01	0.01	212.13	0.00	0.00	0.00	0.00	0.00	0	34
2028	February	Long Reach Forklift	3	125	90	0.20	0.06	2.20	0.26	0.01	0.01	212.13	0.00	0.01	0.00	0.00	0.00	0	47
2028	March	Long Reach Forklift	3	125	90	0.20	0.06	2.20	0.26	0.01	0.01	212.13	0.00	0.01	0.00	0.00	0.00	0	47
2028	April	Long Reach Forklift	3	125	20	0.20	0.06	2.20	0.26	0.01	0.01	212.13	0.00	0.00	0.00	0.00	0.00	0	10
2028	May	Long Reach Forklift	3	125	32	0.20	0.06	2.20	0.26	0.01	0.01	212.13	0.00	0.00	0.00	0.00	0.00	0	17
2028	June	Long Reach Forklift	3	125	118	0.20	0.06	2.20	0.26	0.01	0.01	212.13	0.00	0.01	0.00	0.00	0.00	1	62
2028	July	Long Reach Forklift	3	125	128	0.20	0.06	2.20	0.26	0.01	0.01	212.13	0.00	0.01	0.00	0.00	0.00	1	67
2028	August	Long Reach Forklift	3	125	176	0.20	0.06	2.20	0.26	0.01	0.01	212.13	0.00	0.01	0.00	0.00	0.00	1	92
2028	September	Long Reach Forklift	3	125	230	0.20	0.06	2.20	0.26	0.01	0.01	212.13	0.00	0.01	0.00	0.00	0.00	1	120
2028	October	Long Reach Forklift	3	125	46	0.20	0.06	2.20	0.26	0.01	0.01	212.13	0.00	0.00	0.00	0.00	0.00	0	24
2028	November	Long Reach Forklift	3	125	52	0.20	0.06	2.20	0.26	0.01	0.01	212.13	0.00	0.00	0.00	0.00	0.00	0	27
2028	December	Long Reach Forklift	3	125	78	0.20	0.06	2.20	0.26	0.01	0.01	212.13	0.00	0.00	0.00	0.00	0.00	0	41
2029	January	Long Reach Forklift	3	125	56	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	29
2029	February	Long Reach Forklift	3	125	18	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	9
2029	March	Long Reach Forklift	3	125	124	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.01	0.00	0.00	0.00	1	65
2029	April	Long Reach Forklift	3	125	70	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	37
2029	May	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2029	June	Long Reach Forklift	3	125	16	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	8
2029	July	Long Reach Forklift	3	125	104	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.01	0.00	0.00	0.00	1	54
2029	August	Long Reach Forklift	3	125	130	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.01	0.00	0.00	0.00	1	68
2029	September	Long Reach Forklift	3	125	106	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.01	0.00	0.00	0.00	1	55
2029	October	Long Reach Forklift	3	125	56	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	29
2029	November	Long Reach Forklift	3	125	6	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	3
2029	December	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2030	January	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2030	February	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2030	March	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2030	April	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2030	May	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2030	June	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2030	July	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2030	August	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2030	September	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2030	October	Long Reach Forklift	3	125		0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2035	January	Long Reach Forklift	3	125	0	0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2035	February	Long Reach Forklift	3	125	0	0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2035	March	Long Reach Forklift	3	125	0	0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2035	April	Long Reach Forklift	3	125	76	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	40
2035	May	Long Reach Forklift	3	125	8	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	4
2035	June	Long Reach Forklift	3	125	0	0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2035	July	Long Reach Forklift	3	125	4	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	2
2035	August	Long Reach Forklift	3	125	30	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	16
2035	September	Long Reach Forklift	3	125	24	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	13
2035	October	Long Reach Forklift	3	125	22	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	11
2035	November	Long Reach Forklift	3	125	74	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	39
2035	December	Long Reach Forklift	3	125	48	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	25
2036	January	Long Reach Forklift	3	125	160	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.01	0.00	0.00	0.00	1	84
2036	February	Long Reach Forklift	3	125	0	0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2036	March	Long Reach Forklift	3	125	0	0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2036	April	Long Reach Forklift	3	125	2	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	1

2036	May	Long Reach Forklift	3	125	120	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.01	0.00	0.00	0.00	1	63
2036	June	Long Reach Forklift	3	125	4	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	2
2036	July	Long Reach Forklift	3	125	2	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	1
2036	August	Long Reach Forklift	3	125	53	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	28
2036	September	Long Reach Forklift	3	125	63	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	33
2036	October	Long Reach Forklift	3	125	86	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.01	0.00	0.00	0.00	0	45
2036	November	Long Reach Forklift	3	125	4	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	2
2036	December	Long Reach Forklift	3	125	2	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	1
2037	January	Long Reach Forklift	3	125	34	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	18
2037	February	Long Reach Forklift	3	125	14	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	7
2037	March	Long Reach Forklift	3	125	0	0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2037	April	Long Reach Forklift	3	125	4	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	2
2037	May	Long Reach Forklift	3	125	4	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	2
2037	June	Long Reach Forklift	3	125	42	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	22
2037	July	Long Reach Forklift	3	125	86	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.01	0.00	0.00	0.00	0	45
2037	August	Long Reach Forklift	3	125	36	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	19
2037	September	Long Reach Forklift	3	125	2	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	1
2037	October	Long Reach Forklift	3	125	2	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	1
2037	November	Long Reach Forklift	3	125	38	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	20
2037	December	Long Reach Forklift	3	125	4	0.20	0.06	2.20	0.26	0.01	0.01	212.22	0.00	0.00	0.00	0.00	0.00	0	2
2038	January	Long Reach Forklift	3	125	0	0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2038	February	Long Reach Forklift	3	125	0	0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2038	March	Long Reach Forklift	3	125	0	0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2038	April	Long Reach Forklift	3	125	0	0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2038	May	Long Reach Forklift	3	125	0	0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2038	June	Long Reach Forklift	3	125	0	0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2038	July	Long Reach Forklift	3	125	0	0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2038	August	Long Reach Forklift	3	125	0	0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-
2038	September	Long Reach Forklift	3	125	0	0.20	0.06	2.20	0.26	0.01	0.01	212.22	-	-	-	-	-	-	-

		2026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		2027	0.00	0.01	0.00	0.00	0.00	0.00								0.93	92		
		2028	0.00	0.07	0.01	0.00	0.00	0.00								5.97	588		
		2029	0.00	0.04	0.00	0.00	0.00	0.00								3.64	359		
		2030	-	-	-	-	-	-								-	-		
Phase 1			0.00	0.12	0.01	0.00	0.00	0.00								10.54	1,039		
		2035	0.00	0.02	0.00	0.00	0.00	0.00								1.52	149		
		2036	0.00	0.03	0.00	0.00	0.00	0.00								2.63	259		
		2037	0.00	0.02	0.00	0.00	0.00	0.00								1.41	139		
		2038	-	-	-	-	-	-								-	-		
Phase 2			0.00	0.06	0.01	0.00	0.00	0.00								5.56	548		
		ROG		CO	NOX	PM10	PM2.5									CO2 (metric tons)	gals Diesel		
		Emissions (tons)																	
Days		2026	-	-	-	-	-	-											
132		264	2027	0.00	0.08	0.01	0.00	0.00											
		264	2028	0.01	0.52	0.06	0.00	0.00											
		264	2029	0.01	0.32	0.04	0.00	0.00											
220		2030	-	-	-	-	-	-											
1144		Phase 1	0.01	0.21	0.02	0.00	0.00												
		264	2035	0.00	0.13	0.02	0.00	0.00											
		264	2036	0.01	0.23	0.03	0.00	0.00											
		264	2037	0.00	0.12	0.01	0.00	0.00											
198		2038	-	-	-	-	-	-											
792		Phase 2	0.00	0.16	0.02	0.00	0.00												
		Average Daily Emissions (pounds)																	

22 Days per Month

10.15 kg/CO2/gal

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2
2026	July	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.38	-	-	-	-	-	-
2026	August	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.38	-	-	-	-	-	-
2026	September	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.38	-	-	-	-	-	-
2026	October	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.38	-	-	-	-	-	-
2026	November	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.38	-	-	-	-	-	-
2026	December	Bobcat	4	65	24	0.36	0.06	2.20	0.26	0.01	0.01	189.38	0.00	0.00	0.00	0.00	0.00	0
2027	January	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.17	0.00	0.00	0.00	0.00	0.00	0
2027	February	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.17	0.00	0.00	0.00	0.00	0.00	0
2027	March	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.17	-	-	-	-	-	-
2027	April	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.17	-	-	-	-	-	-
2027	May	Bobcat	4	65	4	0.36	0.06	2.20	0.26	0.01	0.01	189.17	0.00	0.00	0.00	0.00	0.00	0
2027	June	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.17	-	-	-	-	-	-
2027	July	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.17	-	-	-	-	-	-
2027	August	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.17	-	-	-	-	-	-
2027	September	Bobcat	4	65	4	0.36	0.06	2.20	0.26	0.01	0.01	189.17	0.00	0.00	0.00	0.00	0.00	0
2027	October	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.17	0.00	0.00	0.00	0.00	0.00	0
2027	November	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.17	-	-	-	-	-	-
2027	December	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.17	0.00	0.00	0.00	0.00	0.00	0
2028	January	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.42	-	-	-	-	-	-
2028	February	Bobcat	4	65	28	0.36	0.06	2.20	0.26	0.01	0.01	189.42	0.00	0.00	0.00	0.00	0.00	0
2028	March	Bobcat	4	65	8	0.36	0.06	2.20	0.26	0.01	0.01	189.42	0.00	0.00	0.00	0.00	0.00	0
2028	April	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.42	-	-	-	-	-	-
2028	May	Bobcat	4	65	4	0.36	0.06	2.20	0.26	0.01	0.01	189.42	0.00	0.00	0.00	0.00	0.00	0
2028	June	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.42	0.00	0.00	0.00	0.00	0.00	0
2028	July	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.42	-	-	-	-	-	-
2028	August	Bobcat	4	65	26	0.36	0.06	2.20	0.26	0.01	0.01	189.42	0.00	0.00	0.00	0.00	0.00	0
2028	September	Bobcat	4	65	42	0.36	0.06	2.20	0.26	0.01	0.01	189.42	0.00	0.00	0.00	0.00	0.00	0
2028	October	Bobcat	4	65	46	0.36	0.06	2.20	0.26	0.01	0.01	189.42	0.00	0.00	0.00	0.00	0.00	0
2028	November	Bobcat	4	65	38	0.36	0.06	2.20	0.26	0.01	0.01	189.42	0.00	0.00	0.00	0.00	0.00	0
2028	December	Bobcat	4	65	40	0.36	0.06	2.20	0.26	0.01	0.01	189.42	0.00	0.00	0.00	0.00	0.00	0
2029	January	Bobcat	4	65	44	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0
2029	February	Bobcat	4	65	56	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0
2029	March	Bobcat	4	65	80	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0
2029	April	Bobcat	4	65	30	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0
2029	May	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2029	June	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2029	July	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0
2029	August	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0
2029	September	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0
2029	October	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0
2029	November	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0
2029	December	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2030	January	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2030	February	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2030	March	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2030	April	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2030	May	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2030	June	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2030	July	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2030	August	Bobcat	4	65	160	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.01	0.00	0.00	0.00	1
2030	September	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2030	October	Bobcat	4	65		0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2035	January	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2035	February	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2035	March	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2035	April	Bobcat	4	65	48	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0
2035	May	Bobcat	4	65	4	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0
2035	June	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2035	July	Bobcat	4	65	4	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0
2035	August	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2035	September	Bobcat	4	65	4	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0
2035	October	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0
2035	November	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0
2035	December	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2036	January	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2036	February	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2036	March	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-
2036	April	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0

2036	May	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-	-
2036	June	Bobcat	4	65	4	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	-
2036	July	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2036	August	Bobcat	4	65	4	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	2
2036	September	Bobcat	4	65	22	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	10
2036	October	Bobcat	4	65	23	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	10
2036	November	Bobcat	4	65	7	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	3
2036	December	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2037	January	Bobcat	4	65	6	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	3
2037	February	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2037	March	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-	-
2037	April	Bobcat	4	65	4	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	2
2037	May	Bobcat	4	65	4	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	2
2037	June	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2037	July	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2037	August	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-	-
2037	September	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2037	October	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2037	November	Bobcat	4	65	2	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	1
2037	December	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-	-
2038	January	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-	-
2038	February	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-	-
2038	March	Bobcat	4	65	40	0.36	0.06	2.20	0.26	0.01	0.01	189.54	0.00	0.00	0.00	0.00	0.00	0	17
2038	April	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-	-
2038	May	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-	-
2038	June	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-	-
2038	July	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-	-
2038	August	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-	-
2038	September	Bobcat	4	65	0	0.36	0.06	2.20	0.26	0.01	0.01	189.54	-	-	-	-	-	-	-

Phase 1	2026	0.00	0.00	0.00	0.00	0.00	0.11	10
	2027	0.00	0.00	0.00	0.00	0.00	0.07	7
	2028	0.00	0.01	0.00	0.00	0.00	1.04	102
	2029	0.00	0.01	0.00	0.00	0.00	0.98	96
	2030	0.00	0.01	0.00	0.00	0.00	0.71	70
		0.00	0.04	0.00	0.00	0.00	2.90	286
	2035	0.00	0.00	0.00	0.00	0.00	0.28	28
	2036	0.00	0.00	0.00	0.00	0.00	0.29	29
	2037	0.00	0.00	0.00	0.00	0.00	0.12	11
	2038	0.00	0.00	0.00	0.00	0.00	0.18	17
Phase 2	0.00	0.01	0.00	0.00	0.00	0.87	86	
	ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel	
Days	Emissions (tons)							
132	2026	0.00	0.02	0.00	0.00	0.00		
264	2027	0.00	0.01	0.00	0.00	0.00		
264	2028	0.00	0.10	0.01	0.00	0.00		
264	2029	0.00	0.09	0.01	0.00	0.00		
220	2030	0.00	0.08	0.01	0.00	0.00		
1144	Phase 1	0.00	0.06	0.01	0.00	0.00		
264	2035	0.00	0.03	0.00	0.00	0.00		
264	2036	0.00	0.03	0.00	0.00	0.00		
264	2037	0.00	0.01	0.00	0.00	0.00		
198	2038	0.00	0.02	0.00	0.00	0.00		
792	Phase 2	0.00	0.03	0.00	0.00	0.00		
Average Daily Emissions (pounds)								

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.91	-	-	-	-	-	-	-
2026	August	Backhoe	5	150	48	0.37	0.06	2.20	0.26	0.01	0.01	193.91	0.00	0.01	0.00	0.00	0.00	1	51
2026	September	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.91	-	-	-	-	-	-	-
2026	October	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.91	-	-	-	-	-	-	-
2026	November	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.91	-	-	-	-	-	-	-
2026	December	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.91	-	-	-	-	-	-	-
2027	January	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.81	-	-	-	-	-	-	-
2027	February	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.81	-	-	-	-	-	-	-
2027	March	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.81	-	-	-	-	-	-	-
2027	April	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.81	-	-	-	-	-	-	-
2027	May	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.81	-	-	-	-	-	-	-
2027	June	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.81	-	-	-	-	-	-	-
2027	July	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.81	-	-	-	-	-	-	-
2027	August	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.81	-	-	-	-	-	-	-
2027	September	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.81	-	-	-	-	-	-	-
2027	October	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.81	-	-	-	-	-	-	-
2027	November	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.81	-	-	-	-	-	-	-
2027	December	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.81	-	-	-	-	-	-	-
2028	January	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.72	-	-	-	-	-	-	-
2028	February	Backhoe	5	150	80	0.37	0.06	2.20	0.26	0.01	0.01	193.72	0.00	0.01	0.00	0.00	0.00	1	85
2028	March	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.72	-	-	-	-	-	-	-
2028	April	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.72	-	-	-	-	-	-	-
2028	May	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.72	-	-	-	-	-	-	-
2028	June	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.72	-	-	-	-	-	-	-
2028	July	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.72	-	-	-	-	-	-	-
2028	August	Backhoe	5	150	120	0.37	0.06	2.20	0.26	0.01	0.01	193.72	0.00	0.02	0.00	0.00	0.00	1	127
2028	September	Backhoe	5	150	160	0.37	0.06	2.20	0.26	0.01	0.01	193.72	0.00	0.02	0.00	0.00	0.00	2	169
2028	October	Backhoe	5	150	176	0.37	0.06	2.20	0.26	0.01	0.01	193.72	0.00	0.02	0.00	0.00	0.00	2	186
2028	November	Backhoe	5	150	152	0.37	0.06	2.20	0.26	0.01	0.01	193.72	0.00	0.02	0.00	0.00	0.00	2	161
2028	December	Backhoe	5	150	152	0.37	0.06	2.20	0.26	0.01	0.01	193.72	0.00	0.02	0.00	0.00	0.00	2	161
2029	January	Backhoe	5	150	160	0.37	0.06	2.20	0.26	0.01	0.01	193.78	0.00	0.02	0.00	0.00	0.00	2	170
2029	February	Backhoe	5	150	152	0.37	0.06	2.20	0.26	0.01	0.01	193.78	0.00	0.02	0.00	0.00	0.00	2	161
2029	March	Backhoe	5	150	144	0.37	0.06	2.20	0.26	0.01	0.01	193.78	0.00	0.02	0.00	0.00	0.00	2	153
2029	April	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2029	May	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2029	June	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2029	July	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2029	August	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2029	September	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2029	October	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2029	November	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2029	December	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	January	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	February	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	March	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	April	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	May	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	June	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	July	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	August	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	September	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2030	October	Backhoe	5	150		0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-

2035	January	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	February	Backhoe	5	150	16	0.37	0.06	2.20	0.26	0.01	0.01	193.78	0.00	0.00	0.00	0.00	0.00	0	17
2035	March	Backhoe	5	150	8	0.37	0.06	2.20	0.26	0.01	0.01	193.78	0.00	0.00	0.00	0.00	0.00	0	8
2035	April	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	May	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	June	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	July	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	August	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	September	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	October	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	November	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2035	December	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2036	January	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2036	February	Backhoe	5	150	16	0.37	0.06	2.20	0.26	0.01	0.01	193.78	0.00	0.00	0.00	0.00	0.00	0	17
2036	March	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2036	April	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2036	May	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2036	June	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2036	July	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2036	August	Backhoe	5	150	8	0.37	0.06	2.20	0.26	0.01	0.01	193.78	0.00	0.00	0.00	0.00	0.00	0	8
2036	September	Backhoe	5	150	88	0.37	0.06	2.20	0.26	0.01	0.01	193.78	0.00	0.01	0.00	0.00	0.00	1	93
2036	October	Backhoe	5	150	92	0.37	0.06	2.20	0.26	0.01	0.01	193.78	0.00	0.01	0.00	0.00	0.00	1	97
2036	November	Backhoe	5	150	12	0.37	0.06	2.20	0.26	0.01	0.01	193.78	0.00	0.00	0.00	0.00	0.00	0	13
2036	December	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	January	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	February	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	March	Backhoe	5	150	8	0.37	0.06	2.20	0.26	0.01	0.01	193.78	0.00	0.00	0.00	0.00	0.00	0	8
2037	April	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	May	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	June	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	July	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	August	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	September	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	October	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	November	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2037	December	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2038	January	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2038	February	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2038	March	Backhoe	5	150	40	0.37	0.06	2.20	0.26	0.01	0.01	193.78	0.00	0.01	0.00	0.00	0.00	0	42
2038	April	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2038	May	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2038	June	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2038	July	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2038	August	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-
2038	September	Backhoe	5	150	0	0.37	0.06	2.20	0.26	0.01	0.01	193.78	-	-	-	-	-	-	-

22 Days per Month 10.15 kg/CO2/gal	Days	2026	0.00	0.01	0.00	0.00	0.00	0.52	51
		2027	-	-	-	-	-	-	-
		2028	0.00	0.11	0.01	0.00	0.00	9.03	890
		2029	0.00	0.06	0.01	0.00	0.00	4.90	483
		2030	-	-	-	-	-	-	-
		Phase 1	0.00	0.18	0.02	0.00	0.00	14.45	1,424
		2035	0.00	0.00	0.00	0.00	0.00	0.26	25
		2036	0.00	0.03	0.00	0.00	0.00	2.32	229
		2037	0.00	0.00	0.00	0.00	0.00	0.09	8
		2038	0.00	0.01	0.00	0.00	0.00	0.43	42
	Phase 2	2026	0.00	0.04	0.00	0.00	0.00	3.10	305
		ROG							
		CO							
		NOX							
		PM10							
		PM2.5							
		CO2 (metric tons)							
		gals Diesel							
		2026	0.00	0.10	0.01	0.00	0.00		
		264 2027	-	-	-	-	-		
	Average Daily Emissions (pounds)	264 2028	0.02	0.86	0.10	0.00	0.00		
		264 2029	0.01	0.46	0.05	0.00	0.00		
		220 2030	-	-	-	-	-		
		1144 Phase 1	0.01	0.32	0.04	0.00	0.00		
		264 2035	0.00	0.02	0.00	0.00	0.00		
		264 2036	0.01	0.22	0.03	0.00	0.00		
		264 2037	0.00	0.01	0.00	0.00	0.00		
		198 2038	0.00	0.05	0.01	0.00	0.00		
		792 Phase 2	0.00	0.10	0.01	0.00	0.00		

		Offroad Construction Equipment Emissions - Unmitigated																	
Year	Month	Equipment	Total			Emission Factor (g/hp-hour)							Emissions (tons)					Annual Emissions (metric tons/year)	
			ID	HP	Load Factor	ROG	CO	NOX	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel		
2026	July	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.32	-	-	-	-	-	-	-
2026	August	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.32	-	-	-	-	-	-	-
2026	September	Excavator	6	400	40	0.38	0.06	2.20	0.26	0.01	0.01	201.32	0.00	0.01	0.00	0.00	0.00	1	121
2026	October	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.32	-	-	-	-	-	-	-
2026	November	Excavator	6	400	16	0.38	0.06	2.20	0.26	0.01	0.01	201.32	0.00	0.01	0.00	0.00	0.00	0	48
2026	December	Excavator	6	400	176	0.38	0.06	2.20	0.26	0.01	0.01	201.32	0.00	0.06	0.01	0.00	0.00	5	531
2027	January	Excavator	6	400	152	0.38	0.06	2.20	0.26	0.01	0.01	201.27	0.00	0.06	0.01	0.00	0.00	5	458
2027	February	Excavator	6	400	152	0.38	0.06	2.20	0.26	0.01	0.01	201.27	0.00	0.06	0.01	0.00	0.00	5	458
2027	March	Excavator	6	400	144	0.38	0.06	2.20	0.26	0.01	0.01	201.27	0.00	0.05	0.01	0.00	0.00	4	434
2027	April	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.27	-	-	-	-	-	-	-
2027	May	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.27	-	-	-	-	-	-	-
2027	June	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.27	-	-	-	-	-	-	-
2027	July	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.27	-	-	-	-	-	-	-
2027	August	Excavator	6	400	64	0.38	0.06	2.20	0.26	0.01	0.01	201.27	0.00	0.02	0.00	0.00	0.00	2	193
2027	September	Excavator	6	400	168	0.38	0.06	2.20	0.26	0.01	0.01	201.27	0.00	0.06	0.01	0.00	0.00	5	506
2027	October	Excavator	6	400	168	0.38	0.06	2.20	0.26	0.01	0.01	201.27	0.00	0.06	0.01	0.00	0.00	5	506
2027	November	Excavator	6	400	192	0.38	0.06	2.20	0.26	0.01	0.01	201.27	0.00	0.07	0.01	0.00	0.00	6	579
2027	December	Excavator	6	400	336	0.38	0.06	2.20	0.26	0.01	0.01	201.27	0.00	0.12	0.01	0.00	0.00	10	1,013
2028	January	Excavator	6	400	168	0.38	0.06	2.20	0.26	0.01	0.01	201.28	0.00	0.06	0.01	0.00	0.00	5	506
2028	February	Excavator	6	400	160	0.38	0.06	2.20	0.26	0.01	0.01	201.28	0.00	0.06	0.01	0.00	0.00	5	482
2028	March	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.28	-	-	-	-	-	-	-
2028	April	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.28	-	-	-	-	-	-	-
2028	May	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.28	-	-	-	-	-	-	-
2028	June	Excavator	6	400	56	0.38	0.06	2.20	0.26	0.01	0.01	201.28	0.00	0.02	0.00	0.00	0.00	2	169
2028	July	Excavator	6	400	152	0.38	0.06	2.20	0.26	0.01	0.01	201.28	0.00	0.06	0.01	0.00	0.00	5	458
2028	August	Excavator	6	400	200	0.38	0.06	2.20	0.26	0.01	0.01	201.28	0.00	0.07	0.01	0.00	0.00	6	603
2028	September	Excavator	6	400	160	0.38	0.06	2.20	0.26	0.01	0.01	201.28	0.00	0.06	0.01	0.00	0.00	5	482
2028	October	Excavator	6	400	176	0.38	0.06	2.20	0.26	0.01	0.01	201.28	0.00	0.06	0.01	0.00	0.00	5	530
2028	November	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.28	-	-	-	-	-	-	-
2028	December	Excavator	6	400	72	0.38	0.06	2.20	0.26	0.01	0.01	201.28	0.00	0.03	0.00	0.00	0.00	2	217
2029	January	Excavator	6	400	160	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.06	0.01	0.00	0.00	5	483
2029	February	Excavator	6	400	86	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.03	0.00	0.00	0.00	3	259
2029	March	Excavator	6	400	104	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.04	0.00	0.00	0.00	3	314
2029	April	Excavator	6	400	200	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.07	0.01	0.00	0.00	6	603
2029	May	Excavator	6	400	176	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.06	0.01	0.00	0.00	5	531
2029	June	Excavator	6	400	216	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.08	0.01	0.00	0.00	7	651
2029	July	Excavator	6	400	432	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.16	0.02	0.00	0.00	13	1,303
2029	August	Excavator	6	400	184	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.07	0.01	0.00	0.00	6	555
2029	September	Excavator	6	400	152	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.06	0.01	0.00	0.00	5	458
2029	October	Excavator	6	400	176	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.06	0.01	0.00	0.00	5	531
2029	November	Excavator	6	400	56	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.02	0.00	0.00	0.00	2	169
2029	December	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2030	January	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2030	February	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2030	March	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2030	April	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2030	May	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2030	June	Excavator	6	400	56	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.02	0.00	0.00	0.00	2	169
2030	July	Excavator	6	400	24	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.01	0.00	0.00	0.00	1	72
2030	August	Excavator	6	400	160	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.06	0.01	0.00	0.00	5	483
2030	September	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2030	October	Excavator	6	400		0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-

2035	January	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	February	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	March	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	April	Excavator	6	400	48	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.02	0.00	0.00	0.00	1	145
2035	May	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	June	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	July	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	August	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	September	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	October	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	November	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2035	December	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2036	January	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2036	February	Excavator	6	400	96	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.04	0.00	0.00	0.00	3	290
2036	March	Excavator	6	400	32	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.01	0.00	0.00	0.00	1	97
2036	April	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2036	May	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2036	June	Excavator	6	400	40	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.01	0.00	0.00	0.00	1	121
2036	July	Excavator	6	400	176	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.06	0.01	0.00	0.00	5	531
2036	August	Excavator	6	400	128	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.05	0.01	0.00	0.00	4	386
2036	September	Excavator	6	400	168	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.06	0.01	0.00	0.00	5	507
2036	October	Excavator	6	400	88	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.03	0.00	0.00	0.00	3	265
2036	November	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2036	December	Excavator	6	400	8	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.00	0.00	0.00	0.00	0	24
2037	January	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2037	February	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2037	March	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2037	April	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2037	May	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2037	June	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2037	July	Excavator	6	400	48	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.02	0.00	0.00	0.00	1	145
2037	August	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2037	September	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2037	October	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2037	November	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2037	December	Excavator	6	400	48	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.02	0.00	0.00	0.00	1	145
2038	January	Excavator	6	400	168	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.06	0.01	0.00	0.00	5	507
2038	February	Excavator	6	400	144	0.38	0.06	2.20	0.26	0.01	0.01	201.38	0.00	0.05	0.01	0.00	0.00	4	434
2038	March	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2038	April	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2038	May	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2038	June	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2038	July	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2038	August	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-
2038	September	Excavator	6	400	0	0.38	0.06	2.20	0.26	0.01	0.01	201.38	-	-	-	-	-	-	-

Phase 1	2026	0.00	0.09	0.01	0.00	0.00	7.10	699
	2027	0.01	0.51	0.06	0.00	0.00	42.10	4,147
	2028	0.01	0.42	0.05	0.00	0.00	35.00	3,448
	2029	0.02	0.72	0.08	0.00	0.00	59.44	5,856
	2030	0.00	0.09	0.01	0.00	0.00	7.35	72
		0.05	1.82	0.21	0.01	0.01	150.98	14,875
	2035	0.00	0.02	0.00	0.00	0.00	1.47	145
	2036	0.01	0.27	0.03	0.00	0.00	22.53	2,220
	2037	0.00	0.04	0.00	0.00	0.00	2.94	290
	2038	0.00	0.12	0.01	0.00	0.00	9.55	941
Phase 2	0.01	0.44	0.05	0.00	0.00	36.49	3,595	
	ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel	
Days	Emissions (tons)							
132	2026	0.04	1.30	0.15	0.00	0.00		
264	2027	0.10	3.84	0.45	0.01	0.01		
264	2028	0.09	3.19	0.38	0.01	0.01		
264	2029	0.15	5.42	0.64	0.02	0.02		
220	2030	0.02	0.80	0.10	0.00	0.00		
1144	Phase 1	0.09	3.18	0.38	0.01	0.01		
264	2035	0.00	0.13	0.02	0.00	0.00		
264	2036	0.06	2.06	0.24	0.01	0.01		
264	2037	0.01	0.27	0.03	0.00	0.00		
198	2038	0.03	1.16	0.14	0.00	0.00		
792	Phase 2	0.03	1.11	0.13	0.00	0.00		
Average Daily Emissions (pounds)								

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)		
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.73	-	-	-	-	-	-	-
2026	August	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.73	-	-	-	-	-	-	-
2026	September	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.73	-	-	-	-	-	-	-
2026	October	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.73	-	-	-	-	-	-	-
2026	November	D3 Dozer	7	150	32	0.40	0.06	2.20	0.26	0.01	0.01	208.73	0.00	0.00	0.00	0.00	0.00	0	39
2026	December	D3 Dozer	7	150	320	0.40	0.06	2.20	0.26	0.01	0.01	208.73	0.00	0.05	0.01	0.00	0.00	4	395
2027	January	D3 Dozer	7	150	280	0.40	0.06	2.20	0.26	0.01	0.01	208.62	0.00	0.04	0.00	0.00	0.00	4	345
2027	February	D3 Dozer	7	150	152	0.40	0.06	2.20	0.26	0.01	0.01	208.62	0.00	0.02	0.00	0.00	0.00	2	187
2027	March	D3 Dozer	7	150	144	0.40	0.06	2.20	0.26	0.01	0.01	208.62	0.00	0.02	0.00	0.00	0.00	2	178
2027	April	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.62	-	-	-	-	-	-	-
2027	May	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.62	-	-	-	-	-	-	-
2027	June	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.62	-	-	-	-	-	-	-
2027	July	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.62	-	-	-	-	-	-	-
2027	August	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.62	-	-	-	-	-	-	-
2027	September	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.62	-	-	-	-	-	-	-
2027	October	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.62	-	-	-	-	-	-	-
2027	November	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.62	-	-	-	-	-	-	-
2027	December	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.62	-	-	-	-	-	-	-
2028	January	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.87	-	-	-	-	-	-	-
2028	February	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.87	-	-	-	-	-	-	-
2028	March	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.87	-	-	-	-	-	-	-
2028	April	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.87	-	-	-	-	-	-	-
2028	May	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.87	-	-	-	-	-	-	-
2028	June	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.87	-	-	-	-	-	-	-
2028	July	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.87	-	-	-	-	-	-	-
2028	August	D3 Dozer	7	150	16	0.40	0.06	2.20	0.26	0.01	0.01	208.87	0.00	0.00	0.00	0.00	0.00	0	20
2028	September	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.87	-	-	-	-	-	-	-
2028	October	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.87	-	-	-	-	-	-	-
2028	November	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.87	-	-	-	-	-	-	-
2028	December	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.87	-	-	-	-	-	-	-
2029	January	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2029	February	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2029	March	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2029	April	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2029	May	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2029	June	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2029	July	D3 Dozer	7	150	40	0.40	0.06	2.20	0.26	0.01	0.01	208.66	0.00	0.01	0.00	0.00	0.00	1	49
2029	August	D3 Dozer	7	150	120	0.40	0.06	2.20	0.26	0.01	0.01	208.66	0.00	0.02	0.00	0.00	0.00	2	148
2029	September	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2029	October	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2029	November	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2029	December	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2030	January	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2030	February	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2030	March	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2030	April	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2030	May	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2030	June	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2030	July	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2030	August	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2030	September	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2030	October	D3 Dozer	7	150		0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-

2035	January	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2035	February	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2035	March	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2035	April	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2035	May	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2035	June	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2035	July	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2035	August	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2035	September	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2035	October	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2035	November	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2035	December	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2036	January	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2036	February	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2036	March	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2036	April	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2036	May	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2036	June	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2036	July	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2036	August	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2036	September	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2036	October	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2036	November	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2036	December	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2037	January	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2037	February	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2037	March	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2037	April	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2037	May	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2037	June	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2037	July	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2037	August	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2037	September	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2037	October	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2037	November	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2037	December	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2038	January	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2038	February	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2038	March	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2038	April	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2038	May	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2038	June	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2038	July	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2038	August	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-
2038	September	D3 Dozer	7	150	0	0.40	0.06	2.20	0.26	0.01	0.01	208.66	-	-	-	-	-	-	-

Phase 1	2026	0.00	0.05	0.01	0.00	0.00	4.41	434
	2027	0.00	0.08	0.01	0.00	0.00	7.21	710
	2028	0.00	0.00	0.00	0.00	0.00	0.20	20
	2029	0.00	0.02	0.00	0.00	0.00	2.00	197
	2030	-	-	-	-	-	-	-
		0.00	0.16	0.02	0.00	0.00	13.82	1,362
	2035	-	-	-	-	-	-	-
	2036	-	-	-	-	-	-	-
	2037	-	-	-	-	-	-	-
	2038	-	-	-	-	-	-	-
Phase 2	-	-	-	-	-	-	-	
	ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel	
Days	Emissions (tons)							
132	2026	0.02	0.78	0.09	0.00	0.00		
264	2027	0.02	0.63	0.08	0.00	0.00		
264	2028	0.00	0.02	0.00	0.00	0.00		
264	2029	0.00	0.18	0.02	0.00	0.00		
220	2030	-	-	-	-	-		
1144	Phase 1	0.01	0.28	0.03	0.00	0.00		
264	2035	-	-	-	-	-		
264	2036	-	-	-	-	-		
264	2037	-	-	-	-	-		
198	2038	-	-	-	-	-		
792	Phase 2	-	-	-	-	-		
Average Daily Emissions (pounds)								

		Offroad Construction Equipment Emissions - Unmitigated																	
Year	Month	Equipment	Total Load			Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)		
			ID	HP	Factor	ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel	
2026	July	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.52	-	-	-	-	-	-	-
2026	August	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.52	-	-	-	-	-	-	-
2026	September	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.52	-	-	-	-	-	-	-
2026	October	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.52	-	-	-	-	-	-	-
2026	November	Loader	8	250	16	0.36	0.06	2.20	0.26	0.01	0.01	190.52	0.00	0.00	0.00	0.00	0.00	0	27
2026	December	Loader	8	250	174	0.36	0.06	2.20	0.26	0.01	0.01	190.52	0.00	0.04	0.00	0.00	0.00	3	294
2027	January	Loader	8	250	152	0.36	0.06	2.20	0.26	0.01	0.01	190.55	0.00	0.03	0.00	0.00	0.00	3	257
2027	February	Loader	8	250	152	0.36	0.06	2.20	0.26	0.01	0.01	190.55	0.00	0.03	0.00	0.00	0.00	3	257
2027	March	Loader	8	250	176	0.36	0.06	2.20	0.26	0.01	0.01	190.55	0.00	0.04	0.00	0.00	0.00	3	297
2027	April	Loader	8	250	56	0.36	0.06	2.20	0.26	0.01	0.01	190.55	0.00	0.01	0.00	0.00	0.00	1	95
2027	May	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.55	-	-	-	-	-	-	-
2027	June	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.55	-	-	-	-	-	-	-
2027	July	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.55	-	-	-	-	-	-	-
2027	August	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.55	-	-	-	-	-	-	-
2027	September	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.55	-	-	-	-	-	-	-
2027	October	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.55	-	-	-	-	-	-	-
2027	November	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.55	-	-	-	-	-	-	-
2027	December	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.55	-	-	-	-	-	-	-
2028	January	Loader	8	250	56	0.36	0.06	2.20	0.26	0.01	0.01	190.59	0.00	0.01	0.00	0.00	0.00	1	95
2028	February	Loader	8	250	40	0.36	0.06	2.20	0.26	0.01	0.01	190.59	0.00	0.01	0.00	0.00	0.00	1	68
2028	March	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.59	-	-	-	-	-	-	-
2028	April	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.59	-	-	-	-	-	-	-
2028	May	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.59	-	-	-	-	-	-	-
2028	June	Loader	8	250	56	0.36	0.06	2.20	0.26	0.01	0.01	190.59	0.00	0.01	0.00	0.00	0.00	1	95
2028	July	Loader	8	250	152	0.36	0.06	2.20	0.26	0.01	0.01	190.59	0.00	0.03	0.00	0.00	0.00	3	257
2028	August	Loader	8	250	96	0.36	0.06	2.20	0.26	0.01	0.01	190.59	0.00	0.02	0.00	0.00	0.00	2	162
2028	September	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.59	-	-	-	-	-	-	-
2028	October	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.59	-	-	-	-	-	-	-
2028	November	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.59	-	-	-	-	-	-	-
2028	December	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.59	-	-	-	-	-	-	-
2029	January	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2029	February	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2029	March	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2029	April	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2029	May	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2029	June	Loader	8	250	56	0.36	0.06	2.20	0.26	0.01	0.01	190.56	0.00	0.01	0.00	0.00	0.00	1	95
2029	July	Loader	8	250	96	0.36	0.06	2.20	0.26	0.01	0.01	190.56	0.00	0.02	0.00	0.00	0.00	2	162
2029	August	Loader	8	250	120	0.36	0.06	2.20	0.26	0.01	0.01	190.56	0.00	0.03	0.00	0.00	0.00	2	203
2029	September	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2029	October	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2029	November	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2029	December	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2030	January	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2030	February	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2030	March	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2030	April	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2030	May	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2030	June	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2030	July	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2030	August	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-
2030	September	Loader	8	250	80	0.36	0.06	2.20	0.26	0.01	0.01	190.56	0.00	0.02	0.00	0.00	0.00	1	135
2030	October	Loader	8	250		0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-

2035	January	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2035	February	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2035	March	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2035	April	Loader	8	250	16	0.36	0.06	2.20	0.26	0.01	0.01	190.56	0.00	0.00	0.00	0.00	0.00		0	27	
2035	May	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2035	June	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2035	July	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2035	August	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2035	September	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2035	October	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2035	November	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2035	December	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2036	January	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2036	February	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2036	March	Loader	8	250	16	0.36	0.06	2.20	0.26	0.01	0.01	190.56	0.00	0.00	0.00	0.00	0.00		0	27	
2036	April	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2036	May	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2036	June	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2036	July	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2036	August	Loader	8	250	32	0.36	0.06	2.20	0.26	0.01	0.01	190.56	0.00	0.01	0.00	0.00	0.00		1	54	
2036	September	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2036	October	Loader	8	250	24	0.36	0.06	2.20	0.26	0.01	0.01	190.56	0.00	0.01	0.00	0.00	0.00		0	41	
2036	November	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2036	December	Loader	8	250	8	0.36	0.06	2.20	0.26	0.01	0.01	190.56	0.00	0.00	0.00	0.00	0.00		0	14	
2037	January	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2037	February	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2037	March	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2037	April	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2037	May	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2037	June	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2037	July	Loader	8	250	8	0.36	0.06	2.20	0.26	0.01	0.01	190.56	0.00	0.00	0.00	0.00	0.00		0	14	
2037	August	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2037	September	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2037	October	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2037	November	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2037	December	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2038	January	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2038	February	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2038	March	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2038	April	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2038	May	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2038	June	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2038	July	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2038	August	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-
2038	September	Loader	8	250	0	0.36	0.06	2.20	0.26	0.01	0.01	190.56	-	-	-	-	-	-	-	-	-

Phase 1	2026	0.00	0.04	0.00	0.00	0.00	3.26	321
	2027	0.00	0.12	0.01	0.00	0.00	9.19	906
	2028	0.00	0.09	0.01	0.00	0.00	6.86	676
	2029	0.00	0.06	0.01	0.00	0.00	4.66	460
	2030	0.00	0.02	0.00	0.00	0.00	1.37	135
		0.01	0.32	0.04	0.00	0.00	25.35	2,497
	2035	0.00	0.00	0.00	0.00	0.00	0.27	27
	2036	0.00	0.02	0.00	0.00	0.00	1.37	135
	2037	0.00	0.00	0.00	0.00	0.00	0.14	14
	2038	-	-	-	-	-	-	-
Phase 2	0.00	0.02	0.00	0.00	0.00	1.78	176	
	ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel	
Days	Emissions (tons)							
132	2026	0.02	0.63	0.07	0.00	0.00		
264	2027	0.02	0.89	0.10	0.00	0.00		
264	2028	0.02	0.66	0.08	0.00	0.00		
264	2029	0.01	0.45	0.05	0.00	0.00		
220	2030	0.00	0.16	0.02	0.00	0.00		
1144	Phase 1	0.02	0.56	0.07	0.00	0.00		
264	2035	0.00	0.03	0.00	0.00	0.00		
264	2036	0.00	0.13	0.02	0.00	0.00		
264	2037	0.00	0.01	0.00	0.00	0.00		
198	2038	-	-	-	-	-		
792	Phase 2	0.00	0.06	0.01	0.00	0.00		
Average Daily Emissions (pounds)								

		Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	Total Load			Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)			
				HP	Hours	Factor	ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel	
2026	July	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2026	August	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2026	September	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2026	October	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2026	November	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2026	December	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2027	January	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2027	February	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2027	March	Large Compactor	9	25	32	0.48							-	-	-	-	-	-	-	-
2027	April	Large Compactor	9	25	56	0.48							-	-	-	-	-	-	-	-
2027	May	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2027	June	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2027	July	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2027	August	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2027	September	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2027	October	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2027	November	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2027	December	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2028	January	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2028	February	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2028	March	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2028	April	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2028	May	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2028	June	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2028	July	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2028	August	Large Compactor	9	25	16	0.48							-	-	-	-	-	-	-	-
2028	September	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2028	October	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2028	November	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2028	December	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2029	January	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2029	February	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2029	March	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2029	April	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2029	May	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2029	June	Large Compactor	9	25	16	0.48							-	-	-	-	-	-	-	-
2029	July	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2029	August	Large Compactor	9	25	120	0.48							-	-	-	-	-	-	-	-
2029	September	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2029	October	Large Compactor	9	25	24	0.48							-	-	-	-	-	-	-	-
2029	November	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2029	December	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2030	January	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2030	February	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2030	March	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2030	April	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2030	May	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2030	June	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2030	July	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2030	August	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2030	September	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-
2030	October	Large Compactor	9	25		0.48							-	-	-	-	-	-	-	-

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Phase 1	2026	-	-	-	-	-	-	-
	2027	-	-	-	-	-	-	-
	2028	-	-	-	-	-	-	-
	2029	-	-	-	-	-	-	-
	2030	-	-	-	-	-	-	-
	Phase 1	-	-	-	-	-	-	-
Phase 2	2035	-	-	-	-	-	-	-
	2036	-	-	-	-	-	-	-
	2037	-	-	-	-	-	-	-
	2038	-	-	-	-	-	-	-
	Phase 2	-	-	-	-	-	-	-
		ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel
Days	Emissions (tons)							
132	2026	-	-	-	-	-		
264	2027	-	-	-	-	-		
264	2028	-	-	-	-	-		
264	2029	-	-	-	-	-		
220	2030	-	-	-	-	-		
1144	Phase 1	-	-	-	-	-		
264	2035	-	-	-	-	-		
264	2036	-	-	-	-	-		
264	2037	-	-	-	-	-		
198	2038	-	-	-	-	-		
792	Phase 2	-	-	-	-	-		
Average Daily Emissions (pounds)								

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2
2026	July	Small Compactor	10	15		0.48							-	-	-	-	-	-
2026	August	Small Compactor	10	15		0.48							-	-	-	-	-	-
2026	September	Small Compactor	10	15		0.48							-	-	-	-	-	-
2026	October	Small Compactor	10	15		0.48							-	-	-	-	-	-
2026	November	Small Compactor	10	15		0.48							-	-	-	-	-	-
2026	December	Small Compactor	10	15	40	0.48							-	-	-	-	-	-
2027	January	Small Compactor	10	15		0.48							-	-	-	-	-	-
2027	February	Small Compactor	10	15		0.48							-	-	-	-	-	-
2027	March	Small Compactor	10	15		0.48							-	-	-	-	-	-
2027	April	Small Compactor	10	15		0.48							-	-	-	-	-	-
2027	May	Small Compactor	10	15		0.48							-	-	-	-	-	-
2027	June	Small Compactor	10	15		0.48							-	-	-	-	-	-
2027	July	Small Compactor	10	15		0.48							-	-	-	-	-	-
2027	August	Small Compactor	10	15		0.48							-	-	-	-	-	-
2027	September	Small Compactor	10	15		0.48							-	-	-	-	-	-
2027	October	Small Compactor	10	15		0.48							-	-	-	-	-	-
2027	November	Small Compactor	10	15		0.48							-	-	-	-	-	-
2027	December	Small Compactor	10	15		0.48							-	-	-	-	-	-
2028	January	Small Compactor	10	15	56	0.48							-	-	-	-	-	-
2028	February	Small Compactor	10	15	40	0.48							-	-	-	-	-	-
2028	March	Small Compactor	10	15		0.48							-	-	-	-	-	-
2028	April	Small Compactor	10	15		0.48							-	-	-	-	-	-
2028	May	Small Compactor	10	15		0.48							-	-	-	-	-	-
2028	June	Small Compactor	10	15	56	0.48							-	-	-	-	-	-
2028	July	Small Compactor	10	15	152	0.48							-	-	-	-	-	-
2028	August	Small Compactor	10	15	80	0.48							-	-	-	-	-	-
2028	September	Small Compactor	10	15		0.48							-	-	-	-	-	-
2028	October	Small Compactor	10	15		0.48							-	-	-	-	-	-
2028	November	Small Compactor	10	15		0.48							-	-	-	-	-	-
2028	December	Small Compactor	10	15		0.48							-	-	-	-	-	-
2029	January	Small Compactor	10	15		0.48							-	-	-	-	-	-
2029	February	Small Compactor	10	15		0.48							-	-	-	-	-	-
2029	March	Small Compactor	10	15		0.48							-	-	-	-	-	-
2029	April	Small Compactor	10	15		0.48							-	-	-	-	-	-
2029	May	Small Compactor	10	15		0.48							-	-	-	-	-	-
2029	June	Small Compactor	10	15	64	0.48							-	-	-	-	-	-
2029	July	Small Compactor	10	15	112	0.48							-	-	-	-	-	-
2029	August	Small Compactor	10	15		0.48							-	-	-	-	-	-
2029	September	Small Compactor	10	15		0.48							-	-	-	-	-	-
2029	October	Small Compactor	10	15		0.48							-	-	-	-	-	-
2029	November	Small Compactor	10	15		0.48							-	-	-	-	-	-
2029	December	Small Compactor	10	15		0.48							-	-	-	-	-	-
2030	January	Small Compactor	10	15		0.48							-	-	-	-	-	-
2030	February	Small Compactor	10	15		0.48							-	-	-	-	-	-
2030	March	Small Compactor	10	15		0.48							-	-	-	-	-	-
2030	April	Small Compactor	10	15		0.48							-	-	-	-	-	-
2030	May	Small Compactor	10	15		0.48							-	-	-	-	-	-
2030	June	Small Compactor	10	15		0.48							-	-	-	-	-	-
2030	July	Small Compactor	10	15		0.48							-	-	-	-	-	-
2030	August	Small Compactor	10	15		0.48							-	-	-	-	-	-
2030	September	Small Compactor	10	15	80	0.48							-	-	-	-	-	-
2030	October	Small Compactor	10	15		0.48							-	-	-	-	-	-

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	2026	-	-	-	-	-	-	-
	2027	-	-	-	-	-	-	-
	2028	-	-	-	-	-	-	-
	2029	-	-	-	-	-	-	-
	2030	-	-	-	-	-	-	-
	Phase 1	-	-	-	-	-	-	-
	2035	-	-	-	-	-	-	-
	2036	-	-	-	-	-	-	-
	2037	-	-	-	-	-	-	-
	2038	-	-	-	-	-	-	-
	Phase 2	-	-	-	-	-	-	-
		ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel
Days		Emissions (tons)						
132	2026	-	-	-	-	-		
264	2027	-	-	-	-	-		
264	2028	-	-	-	-	-		
264	2029	-	-	-	-	-		
220	2030	-	-	-	-	-		
1144	Phase 1	-	-	-	-	-		
264	2035	-	-	-	-	-		
264	2036	-	-	-	-	-		
264	2037	-	-	-	-	-		
198	2038	-	-	-	-	-		
792	Phase 2	-	-	-	-	-		
		Average Daily Emissions (pounds)						

		Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Load		Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)		
					Hours	Factor	ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel	
2026	July	Water Truck	11	275		0.38	0.07	0.47	0.41	0.02	0.01	200.94	-	-	-	-	-	-	-	
2026	August	Water Truck	11	275		0.38	0.07	0.47	0.41	0.02	0.01	200.94	-	-	-	-	-	-	-	
2026	September	Water Truck	11	275		0.38	0.07	0.47	0.41	0.02	0.01	200.94	-	-	-	-	-	-	-	
2026	October	Water Truck	11	275		0.38	0.07	0.47	0.41	0.02	0.01	200.94	-	-	-	-	-	-	-	
2026	November	Water Truck	11	275		0.38	0.07	0.47	0.41	0.02	0.01	200.94	-	-	-	-	-	-	-	
2026	December	Water Truck	11	275	2	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.00	0.00	0.00	0.00	0	5	
2027	January	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2027	February	Water Truck	11	275	4	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.00	0.00	0.00	0.00	0	8	
2027	March	Water Truck	11	275	3	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.00	0.00	0.00	0.00	0	7	
2027	April	Water Truck	11	275	6	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.00	0.00	0.00	0.00	0	12	
2027	May	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2027	June	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2027	July	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2027	August	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2027	September	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2027	October	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2027	November	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2027	December	Water Truck	11	275		0.38	0.07	0.47	0.39	0.01	0.01	200.95	-	-	-	-	-	-	-	
2028	January	Water Truck	11	275	6	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.00	0.00	0.00	0.00	0	12	
2028	February	Water Truck	11	275	4	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.00	0.00	0.00	0.00	0	8	
2028	March	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	200.94	-	-	-	-	-	-	-	
2028	April	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	200.94	-	-	-	-	-	-	-	
2028	May	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	200.94	-	-	-	-	-	-	-	
2028	June	Water Truck	11	275	6	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.00	0.00	0.00	0.00	0	12	
2028	July	Water Truck	11	275	15	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.00	0.00	0.00	0.00	0	31	
2028	August	Water Truck	11	275	10	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.00	0.00	0.00	0.00	0	20	
2028	September	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	200.94	-	-	-	-	-	-	-	
2028	October	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	200.94	-	-	-	-	-	-	-	
2028	November	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	200.94	-	-	-	-	-	-	-	
2028	December	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	200.94	-	-	-	-	-	-	-	
2029	January	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	February	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	March	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	April	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	May	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	June	Water Truck	11	275	3	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	0	7	
2029	July	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	August	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	September	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	October	Water Truck	11	275	12	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	0	25	
2029	November	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2029	December	Water Truck	11	275		0.38	0.07	0.47	0.38	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	January	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	February	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	March	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	April	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	May	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	June	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	July	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	August	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	
2030	September	Water Truck	11	275	8	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	0	17	
2030	October	Water Truck	11	275		0.38	0.07	0.47	0.35	0.01	0.01	201.01	-	-	-	-	-	-	-	

2035	January	Water Truck	11	275	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	February	Water Truck	11	275	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	March	Water Truck	11	275	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	April	Water Truck	11	275	1.6	0.38	0.06	0.45	0.26	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	0	3
2035	May	Water Truck	11	275	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	June	Water Truck	11	275	16	0.38	0.06	0.45	0.26	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	0	33
2035	July	Water Truck	11	275	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	August	Water Truck	11	275	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	September	Water Truck	11	275	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	October	Water Truck	11	275	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	November	Water Truck	11	275	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	December	Water Truck	11	275	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2036	January	Water Truck	11	275	0	0.38	0.06	0.45	0.24	0.01	0.01	201.01	-	-	-	-	-	-	-
2036	February	Water Truck	11	275	24	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	1	50
2036	March	Water Truck	11	275	9.6	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	0	20
2036	April	Water Truck	11	275	0	0.38	0.06	0.45	0.24	0.01	0.01	201.01	-	-	-	-	-	-	-
2036	May	Water Truck	11	275	0	0.38	0.06	0.45	0.24	0.01	0.01	201.01	-	-	-	-	-	-	-
2036	June	Water Truck	11	275	10	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	0	21
2036	July	Water Truck	11	275	54	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	1	112
2036	August	Water Truck	11	275	35.2	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	1	73
2036	September	Water Truck	11	275	42	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	1	87
2036	October	Water Truck	11	275	24.4	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	1	50
2036	November	Water Truck	11	275	0	0.38	0.06	0.45	0.24	0.01	0.01	201.01	-	-	-	-	-	-	-
2036	December	Water Truck	11	275	2.8	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	0	6
2037	January	Water Truck	11	275	2	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	0	4
2037	February	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-
2037	March	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-
2037	April	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-
2037	May	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-
2037	June	Water Truck	11	275	4	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	0	8
2037	July	Water Truck	11	275	32.8	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	1	68
2037	August	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-
2037	September	Water Truck	11	275	10	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	0	21
2037	October	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-
2037	November	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-
2037	December	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-
2038	January	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-
2038	February	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-
2038	March	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-
2038	April	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-
2038	May	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-
2038	June	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-
2038	July	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-
2038	August	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-
2038	September	Water Truck	11	275	0	0.38	0.06	0.45	0.23	0.01	0.01	201.01	-	-	-	-	-	-	-

Phase 1	2026	0.00	0.00	0.00	0.00	0.00	CO2 (metric tons)	0.05	5
	2027	0.00	0.00	0.00	0.00	0.00		0.27	26
	2028	0.00	0.00	0.00	0.00	0.00		0.84	83
	2029	0.00	0.00	0.00	0.00	0.00		0.32	31
	2030	0.00	0.00	0.00	0.00	0.00		0.17	17
	Phase 1	0.00	0.00	0.00	0.00	0.00		1.65	162
	2035	0.00	0.00	0.00	0.00	0.00		0.37	36
	2036	0.00	0.01	0.01	0.00	0.00		4.24	418
	2037	0.00	0.00	0.00	0.00	0.00		1.03	101
	2038	-	-	-	-	-		-	-
Phase 2	0.00	0.01	0.01	0.00	0.00	5.64	555		
	ROG	CO	NOX	PM10	PM2.5				
Days	Emissions (tons)								
132	2026	0.00	0.00	0.00	0.00	0.00			
264	2027	0.00	0.01	0.00	0.00	0.00			
264	2028	0.00	0.02	0.01	0.00	0.00			
264	2029	0.00	0.01	0.00	0.00	0.00			
220	2030	0.00	0.00	0.00	0.00	0.00			
1144	Phase 1	0.00	0.01	0.01	0.00	0.00			
264	2035	0.00	0.01	0.00	0.00	0.00			
264	2036	0.01	0.08	0.04	0.00	0.00			
264	2037	0.00	0.02	0.01	0.00	0.00			
198	2038	-	-	-	-	-			
792	Phase 2	0.00	0.04	0.02	0.00	0.00			
Average Daily Emissions (pounds)									

		Offroad Construction Equipment Emissions - Unmitigated																	
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)		
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	CO2
2026	July	Crane	12	300		0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-
2026	August	Crane	12	300		0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-
2026	September	Crane	12	300		0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-
2026	October	Crane	12	300		0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-
2026	November	Crane	12	300	144	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.03	0.00	0.00	0.00	2	188
2026	December	Crane	12	300	226	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.05	0.01	0.00	0.00	3	295
2027	January	Crane	12	300	80	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.02	0.00	0.00	0.00	1	104
2027	February	Crane	12	300	128	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.03	0.00	0.00	0.00	2	167
2027	March	Crane	12	300	166	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.04	0.00	0.00	0.00	2	216
2027	April	Crane	12	300	184	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.04	0.00	0.00	0.00	2	240
2027	May	Crane	12	300	32	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.01	0.00	0.00	0.00	0	42
2027	June	Crane	12	300	216	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.05	0.01	0.00	0.00	3	281
2027	July	Crane	12	300	236	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.05	0.01	0.00	0.00	3	307
2027	August	Crane	12	300	152	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.03	0.00	0.00	0.00	2	198
2027	September	Crane	12	300	258	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.05	0.01	0.00	0.00	3	336
2027	October	Crane	12	300	124	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.03	0.00	0.00	0.00	2	162
2027	November	Crane	12	300	76	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.02	0.00	0.00	0.00	1	99
2027	December	Crane	12	300	88	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.02	0.00	0.00	0.00	1	115
2028	January	Crane	12	300	104	0.29	0.06	2.20	0.26	0.01	0.01	151.98	0.00	0.02	0.00	0.00	0.00	1	135
2028	February	Crane	12	300	104	0.29	0.06	2.20	0.26	0.01	0.01	151.98	0.00	0.02	0.00	0.00	0.00	1	135
2028	March	Crane	12	300	24	0.29	0.06	2.20	0.26	0.01	0.01	151.98	0.00	0.01	0.00	0.00	0.00	0	31
2028	April	Crane	12	300	188	0.29	0.06	2.20	0.26	0.01	0.01	151.98	0.00	0.04	0.00	0.00	0.00	2	245
2028	May	Crane	12	300	220	0.29	0.06	2.20	0.26	0.01	0.01	151.98	0.00	0.05	0.01	0.00	0.00	3	287
2028	June	Crane	12	300	196	0.29	0.06	2.20	0.26	0.01	0.01	151.98	0.00	0.04	0.00	0.00	0.00	3	255
2028	July	Crane	12	300	152	0.29	0.06	2.20	0.26	0.01	0.01	151.98	0.00	0.03	0.00	0.00	0.00	2	198
2028	August	Crane	12	300	218	0.29	0.06	2.20	0.26	0.01	0.01	151.98	0.00	0.05	0.01	0.00	0.00	3	284
2028	September	Crane	12	300	225	0.29	0.06	2.20	0.26	0.01	0.01	151.98	0.00	0.05	0.01	0.00	0.00	3	293
2028	October	Crane	12	300	130	0.29	0.06	2.20	0.26	0.01	0.01	151.98	0.00	0.03	0.00	0.00	0.00	2	170
2028	November	Crane	12	300	98	0.29	0.06	2.20	0.26	0.01	0.01	151.98	0.00	0.02	0.00	0.00	0.00	1	128
2028	December	Crane	12	300	118	0.29	0.06	2.20	0.26	0.01	0.01	151.98	0.00	0.02	0.00	0.00	0.00	2	154
2029	January	Crane	12	300	108	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.02	0.00	0.00	0.00	1	141
2029	February	Crane	12	300	15	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0	20
2029	March	Crane	12	300	37	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.01	0.00	0.00	0.00	0	48
2029	April	Crane	12	300	8	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0	10
2029	May	Crane	12	300	10	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0	13
2029	June	Crane	12	300	72	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.02	0.00	0.00	0.00	1	94
2029	July	Crane	12	300	36	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.01	0.00	0.00	0.00	0	47
2029	August	Crane	12	300	120	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.03	0.00	0.00	0.00	2	156
2029	September	Crane	12	300	88	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.02	0.00	0.00	0.00	1	115
2029	October	Crane	12	300	38	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.01	0.00	0.00	0.00	0	49
2029	November	Crane	12	300	17	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0	22
2029	December	Crane	12	300	2	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0	2
2030	January	Crane	12	300		0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-
2030	February	Crane	12	300	80	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.02	0.00	0.00	0.00	1	104
2030	March	Crane	12	300		0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-
2030	April	Crane	12	300	6	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0	8
2030	May	Crane	12	300	10	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0	13
2030	June	Crane	12	300	6	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0	7
2030	July	Crane	12	300	17	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0	22
2030	August	Crane	12	300	2	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0	2
2030	September	Crane	12	300		0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-
2030	October	Crane	12	300		0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-

2035	January	Crane	12	300	0	0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-	-
2035	February	Crane	12	300	0	0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-	-
2035	March	Crane	12	300	0	0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-	-
2035	April	Crane	12	300	44	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.01	0.00	0.00	0.00	0.00	1	57
2035	May	Crane	12	300	52	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.01	0.00	0.00	0.00	0.00	1	68
2035	June	Crane	12	300	56	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.01	0.00	0.00	0.00	0.00	1	73
2035	July	Crane	12	300	36	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.01	0.00	0.00	0.00	0.00	0	47
2035	August	Crane	12	300	4	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.00	0.00	0.00	0.00	0.00	0	5
2035	September	Crane	12	300	40	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.01	0.00	0.00	0.00	0.00	1	52
2035	October	Crane	12	300	68	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.01	0.00	0.00	0.00	0.00	1	89
2035	November	Crane	12	300	160	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.03	0.00	0.00	0.00	0.00	2	208
2035	December	Crane	12	300	96	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.02	0.00	0.00	0.00	0.00	1	125
2036	January	Crane	12	300	140	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.03	0.00	0.00	0.00	0.00	2	182
2036	February	Crane	12	300	120	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.03	0.00	0.00	0.00	0.00	2	156
2036	March	Crane	12	300	132	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.03	0.00	0.00	0.00	0.00	2	172
2036	April	Crane	12	300	196	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.04	0.00	0.00	0.00	0.00	3	255
2036	May	Crane	12	300	144	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.03	0.00	0.00	0.00	0.00	2	188
2036	June	Crane	12	300	68	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.01	0.00	0.00	0.00	0.00	1	89
2036	July	Crane	12	300	294	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.06	0.01	0.00	0.00	0.00	4	383
2036	August	Crane	12	300	388	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.08	0.01	0.00	0.00	0.00	5	505
2036	September	Crane	12	300	290.4	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.06	0.01	0.00	0.00	0.00	4	378
2036	October	Crane	12	300	181.6	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.04	0.00	0.00	0.00	0.00	2	237
2036	November	Crane	12	300	60	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.01	0.00	0.00	0.00	0.00	1	78
2036	December	Crane	12	300	96	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.02	0.00	0.00	0.00	0.00	1	125
2037	January	Crane	12	300	108	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.02	0.00	0.00	0.00	0.00	1	141
2037	February	Crane	12	300	178.4	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.04	0.00	0.00	0.00	0.00	2	232
2037	March	Crane	12	300	231.2	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.05	0.01	0.00	0.00	0.00	3	301
2037	April	Crane	12	300	57.6	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.01	0.00	0.00	0.00	0.00	1	75
2037	May	Crane	12	300	176	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.04	0.00	0.00	0.00	0.00	2	229
2037	June	Crane	12	300	220	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.05	0.01	0.00	0.00	0.00	3	287
2037	July	Crane	12	300	306	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.06	0.01	0.00	0.00	0.00	4	399
2037	August	Crane	12	300	144	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.03	0.00	0.00	0.00	0.00	2	188
2037	September	Crane	12	300	128	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.03	0.00	0.00	0.00	0.00	2	167
2037	October	Crane	12	300	200	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.04	0.00	0.00	0.00	0.00	3	261
2037	November	Crane	12	300	33.2	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.01	0.00	0.00	0.00	0.00	0	43
2037	December	Crane	12	300	106.8	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.02	0.00	0.00	0.00	0.00	1	139
2038	January	Crane	12	300	166.8	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.04	0.00	0.00	0.00	0.00	2	217
2038	February	Crane	12	300	160	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.03	0.00	0.00	0.00	0.00	2	208
2038	March	Crane	12	300	96	0.29	0.06	2.20	0.26	0.01	0.01	151.99	0.00	0.02	0.00	0.00	0.00	0.00	1	125
2038	April	Crane	12	300	0	0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-	-
2038	May	Crane	12	300	0	0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-	-
2038	June	Crane	12	300	0	0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-	-
2038	July	Crane	12	300	0	0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-	-
2038	August	Crane	12	300	0	0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-	-
2038	September	Crane	12	300	0	0.29	0.06	2.20	0.26	0.01	0.01	151.99	-	-	-	-	-	-	-	-

22 Days per Month	10.15 kg/CO2/gal	2026	0.00	0.08	0.01	0.00	0.00	4.90	483
		2027	0.01	0.37	0.04	0.00	0.00	23.01	2,267
		2028	0.01	0.38	0.04	0.00	0.00	23.50	2,316
		2029	0.00	0.12	0.01	0.00	0.00	7.28	717
		2030	0.00	0.03	0.00	0.00	0.00	1.59	156
		Phase 1	0.03	0.96	0.11	0.00	0.00	60.28	5,939
		2035	0.00	0.12	0.01	0.00	0.00	7.35	724
		2036	0.01	0.45	0.05	0.00	0.00	27.90	2,749
		2037	0.01	0.40	0.05	0.00	0.00	24.98	2,461
		2038	0.00	0.09	0.01	0.00	0.00	5.59	551
Average Daily Emissions (pounds)		Phase 2	0.03	1.05	0.12	0.00	0.00	65.83	6,485
		ROG							
		CO							
		NOX							
		PM10							
		PM2.5							
		CO2 (metric tons)							
		gals Diesel							
		Days							
		132	2026	0.03	1.18	0.14	0.00	0.00	
		264	2027	0.08	2.78	0.33	0.01	0.01	
		264	2028	0.08	2.84	0.34	0.01	0.01	
		264	2029	0.02	0.88	0.10	0.00	0.00	
		220	2030	0.01	0.23	0.03	0.00	0.00	
		1144	Phase 1	0.05	1.68	0.20	0.01	0.01	
		264	2035	0.02	0.89	0.11	0.00	0.00	
		264	2036	0.09	3.37	0.40	0.01	0.01	
		264	2037	0.08	3.02	0.36	0.01	0.01	
		198	2038	0.02	0.90	0.11	0.00	0.00	
		792	Phase 2	0.07	2.65	0.31	0.01	0.01	

			Offroad Construction Equipment Emissions - Unmitigated																
Year	Month	Equipment	ID	HP	Total Load Factor	Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)		
						ROG	CO	NOX	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel		
2026	July	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-
2026	August	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-
2026	September	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-
2026	October	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-
2026	November	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-
2026	December	Manlift	13	100	48	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.01	0.00	0.00	0.00	0	24
2027	January	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.69	-	-	-	-	-	-	-
2027	February	Manlift	13	100	320	0.31	0.06	3.70	0.26	0.01	0.01	162.69	0.00	0.04	0.00	0.00	0.00	2	159
2027	March	Manlift	13	100	520	0.31	0.06	3.70	0.26	0.01	0.01	162.69	0.00	0.07	0.00	0.00	0.00	3	258
2027	April	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.69	-	-	-	-	-	-	-
2027	May	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.69	-	-	-	-	-	-	-
2027	June	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.69	-	-	-	-	-	-	-
2027	July	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.69	-	-	-	-	-	-	-
2027	August	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.69	-	-	-	-	-	-	-
2027	September	Manlift	13	100	88	0.31	0.06	3.70	0.26	0.01	0.01	162.69	0.00	0.01	0.00	0.00	0.00	0	44
2027	October	Manlift	13	100	112	0.31	0.06	3.70	0.26	0.01	0.01	162.69	0.00	0.01	0.00	0.00	0.00	1	56
2027	November	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.69	-	-	-	-	-	-	-
2027	December	Manlift	13	100	24	0.31	0.06	3.70	0.26	0.01	0.01	162.69	0.00	0.00	0.00	0.00	0.00	0	12
2028	January	Manlift	13	100	16	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.00	0.00	0.00	0.00	0	8
2028	February	Manlift	13	100	88	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.01	0.00	0.00	0.00	0	44
2028	March	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-
2028	April	Manlift	13	100	160	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.02	0.00	0.00	0.00	1	80
2028	May	Manlift	13	100	40	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.01	0.00	0.00	0.00	0	20
2028	June	Manlift	13	100	200	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.03	0.00	0.00	0.00	1	99
2028	July	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-
2028	August	Manlift	13	100	40	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.01	0.00	0.00	0.00	0	20
2028	September	Manlift	13	100	48	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.01	0.00	0.00	0.00	0	24
2028	October	Manlift	13	100	664	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.08	0.01	0.00	0.00	3	330
2028	November	Manlift	13	100	1088	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.14	0.01	0.00	0.00	5	541
2028	December	Manlift	13	100	968	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.12	0.01	0.00	0.00	5	481
2029	January	Manlift	13	100	584	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.07	0.01	0.00	0.00	3	290
2029	February	Manlift	13	100	448	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.06	0.00	0.00	0.00	2	223
2029	March	Manlift	13	100	672	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.08	0.01	0.00	0.00	3	334
2029	April	Manlift	13	100	244	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.03	0.00	0.00	0.00	1	121
2029	May	Manlift	13	100	576	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.07	0.01	0.00	0.00	3	286
2029	June	Manlift	13	100	396	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.05	0.00	0.00	0.00	2	197
2029	July	Manlift	13	100	32	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.00	0.00	0.00	0.00	0	16
2029	August	Manlift	13	100	104	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.01	0.00	0.00	0.00	1	52
2029	September	Manlift	13	100	56	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.01	0.00	0.00	0.00	0	28
2029	October	Manlift	13	100	312	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.04	0.00	0.00	0.00	2	155
2029	November	Manlift	13	100	768	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.10	0.01	0.00	0.00	4	382
2029	December	Manlift	13	100	400	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.05	0.00	0.00	0.00	2	199
2030	January	Manlift	13	100	240	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.03	0.00	0.00	0.00	1	119
2030	February	Manlift	13	100	200	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.03	0.00	0.00	0.00	1	99
2030	March	Manlift	13	100	408	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.05	0.00	0.00	0.00	2	203
2030	April	Manlift	13	100	304	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.04	0.00	0.00	0.00	2	151
2030	May	Manlift	13	100	288	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.04	0.00	0.00	0.00	1	143
2030	June	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-
2030	July	Manlift	13	100	288	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.04	0.00	0.00	0.00	1	143
2030	August	Manlift	13	100	32	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.00	0.00	0.00	0.00	0	16
2030	September	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-
2030	October	Manlift	13	100		0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-

2035	January	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-
2035	February	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-
2035	March	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-
2035	April	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-
2035	May	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-
2035	June	Manlift	13	100	16	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.00	0.00	0.00	0.00	0.00	0	8
2035	July	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-
2035	August	Manlift	13	100	16	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.00	0.00	0.00	0.00	0.00	0	8
2035	September	Manlift	13	100	16	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.00	0.00	0.00	0.00	0.00	0	8
2035	October	Manlift	13	100	16	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.00	0.00	0.00	0.00	0.00	0	8
2035	November	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-
2035	December	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-
2036	January	Manlift	13	100	40	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.01	0.00	0.00	0.00	0.00	0	20
2036	February	Manlift	13	100	432	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.05	0.00	0.00	0.00	0.00	2	215
2036	March	Manlift	13	100	304	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.04	0.00	0.00	0.00	0.00	2	151
2036	April	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-
2036	May	Manlift	13	100	240	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.03	0.00	0.00	0.00	0.00	1	119
2036	June	Manlift	13	100	240	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.03	0.00	0.00	0.00	0.00	1	119
2036	July	Manlift	13	100	40	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.01	0.00	0.00	0.00	0.00	0	20
2036	August	Manlift	13	100	176	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.02	0.00	0.00	0.00	0.00	1	87
2036	September	Manlift	13	100	720	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.09	0.01	0.00	0.00	0.00	4	358
2036	October	Manlift	13	100	80	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.01	0.00	0.00	0.00	0.00	0	40
2036	November	Manlift	13	100	336	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.04	0.00	0.00	0.00	0.00	2	167
2036	December	Manlift	13	100	144	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.02	0.00	0.00	0.00	0.00	1	72
2037	January	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-
2037	February	Manlift	13	100	560	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.07	0.00	0.00	0.00	0.00	3	278
2037	March	Manlift	13	100	160	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.02	0.00	0.00	0.00	0.00	1	80
2037	April	Manlift	13	100	920	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.12	0.01	0.00	0.00	0.00	5	457
2037	May	Manlift	13	100	16	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.00	0.00	0.00	0.00	0.00	0	8
2037	June	Manlift	13	100	64	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.01	0.00	0.00	0.00	0.00	0	32
2037	July	Manlift	13	100	24	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.00	0.00	0.00	0.00	0.00	0	12
2037	August	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-
2037	September	Manlift	13	100	40	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.01	0.00	0.00	0.00	0.00	0	20
2037	October	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-
2037	November	Manlift	13	100	152	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.02	0.00	0.00	0.00	0.00	1	76
2037	December	Manlift	13	100	1260	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.16	0.01	0.00	0.00	0.00	6	626
2038	January	Manlift	13	100	868	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.11	0.01	0.00	0.00	0.00	4	431
2038	February	Manlift	13	100	232	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.03	0.00	0.00	0.00	0.00	1	115
2038	March	Manlift	13	100	360	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.05	0.00	0.00	0.00	0.00	2	179
2038	April	Manlift	13	100	216	0.31	0.06	3.70	0.26	0.01	0.01	162.70	0.00	0.03	0.00	0.00	0.00	0.00	1	107
2038	May	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-
2038	June	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-
2038	July	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-
2038	August	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-
2038	September	Manlift	13	100	0	0.31	0.06	3.70	0.26	0.01	0.01	162.70	-	-	-	-	-	-	-	-

22 Days per Month 10.15 kg/CO2/gal	Days	2026	0.00	0.01	0.00	0.00	0.00	0.24	24
		2027	0.00	0.13	0.01	0.00	0.00	5.37	529
		2028	0.01	0.42	0.03	0.00	0.00	16.70	1,646
		2029	0.01	0.58	0.04	0.00	0.00	23.16	2,282
		2030	0.00	0.22	0.02	0.00	0.00	8.88	875
		Phase 1	0.02	1.36	0.10	0.00	0.00	54.35	5,355
		2035	0.00	0.01	0.00	0.00	0.00	0.32	32
		2036	0.01	0.35	0.02	0.00	0.00	13.88	1,367
		2037	0.01	0.40	0.03	0.00	0.00	16.12	1,588
		2038	0.00	0.21	0.01	0.00	0.00	8.45	833
		Phase 2	0.02	0.97	0.07	0.00	0.00	38.78	3,820
		ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel	
		Emissions (tons)							
		132	2026	0.00	0.09	0.01	0.00	0.00	
		264	2027	0.02	1.02	0.07	0.00	0.00	
		264	2028	0.05	3.17	0.22	0.01	0.01	
		264	2029	0.07	4.40	0.31	0.01	0.01	
		220	2030	0.03	2.02	0.14	0.00	0.00	
		1144	Phase 1	0.04	2.38	0.17	0.01	0.01	
		264	2035	0.00	0.06	0.00	0.00	0.00	
264	2036	0.04	2.64	0.19	0.01	0.01			
264	2037	0.05	3.06	0.22	0.01	0.01			
198	2038	0.03	2.14	0.15	0.00	0.00			
792	Phase 2	0.04	2.45	0.17	0.01	0.01			
Average Daily Emissions (pounds)									

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	Total Load		Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)	
				HP	Hours	ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2026	August	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2026	September	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2026	October	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2026	November	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2026	December	Welding Machine	14	25	72	0.45						-	-	-	-	-	-	-
2027	January	Welding Machine	14	25	16	0.45						-	-	-	-	-	-	-
2027	February	Welding Machine	14	25	624	0.45						-	-	-	-	-	-	-
2027	March	Welding Machine	14	25	600	0.45						-	-	-	-	-	-	-
2027	April	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2027	May	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2027	June	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2027	July	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2027	August	Welding Machine	14	25	64	0.45						-	-	-	-	-	-	-
2027	September	Welding Machine	14	25	168	0.45						-	-	-	-	-	-	-
2027	October	Welding Machine	14	25	168	0.45						-	-	-	-	-	-	-
2027	November	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2027	December	Welding Machine	14	25	168	0.45						-	-	-	-	-	-	-
2028	January	Welding Machine	14	25	16	0.45						-	-	-	-	-	-	-
2028	February	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2028	March	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2028	April	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2028	May	Welding Machine	14	25	112	0.45						-	-	-	-	-	-	-
2028	June	Welding Machine	14	25	352	0.45						-	-	-	-	-	-	-
2028	July	Welding Machine	14	25	304	0.45						-	-	-	-	-	-	-
2028	August	Welding Machine	14	25	672	0.45						-	-	-	-	-	-	-
2028	September	Welding Machine	14	25	648	0.45						-	-	-	-	-	-	-
2028	October	Welding Machine	14	25	848	0.45						-	-	-	-	-	-	-
2028	November	Welding Machine	14	25	1120	0.45						-	-	-	-	-	-	-
2028	December	Welding Machine	14	25	1144	0.45						-	-	-	-	-	-	-
2029	January	Welding Machine	14	25	688	0.45						-	-	-	-	-	-	-
2029	February	Welding Machine	14	25	456	0.45						-	-	-	-	-	-	-
2029	March	Welding Machine	14	25	216	0.45						-	-	-	-	-	-	-
2029	April	Welding Machine	14	25	240	0.45						-	-	-	-	-	-	-
2029	May	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2029	June	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2029	July	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2029	August	Welding Machine	14	25	336	0.45						-	-	-	-	-	-	-
2029	September	Welding Machine	14	25	304	0.45						-	-	-	-	-	-	-
2029	October	Welding Machine	14	25	488	0.45						-	-	-	-	-	-	-
2029	November	Welding Machine	14	25	504	0.45						-	-	-	-	-	-	-
2029	December	Welding Machine	14	25	48	0.45						-	-	-	-	-	-	-
2030	January	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2030	February	Welding Machine	14	25	80	0.45						-	-	-	-	-	-	-
2030	March	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2030	April	Welding Machine	14	25	192	0.45						-	-	-	-	-	-	-
2030	May	Welding Machine	14	25	288	0.45						-	-	-	-	-	-	-
2030	June	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2030	July	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2030	August	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2030	September	Welding Machine	14	25		0.45						-	-	-	-	-	-	-
2030	October	Welding Machine	14	25		0.45						-	-	-	-	-	-	-

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		2026	2027	2028	2029	2030	Phase 1	2035	2036	2037	2038	Phase 2	CO2 (metric tons)	gals Diesel
Days		ROG	CO	NOX	PM10	PM2.5								
132	2026	-	-	-	-	-		-	-	-	-			-
264	2027	-	-	-	-	-		-	-	-	-			-
264	2028	-	-	-	-	-		-	-	-	-			-
264	2029	-	-	-	-	-		-	-	-	-			-
220	2030	-	-	-	-	-		-	-	-	-			-
1144	Phase 1	-	-	-	-	-		-	-	-	-			-
264	2035	-	-	-	-	-		-	-	-	-			-
264	2036	-	-	-	-	-		-	-	-	-			-
264	2037	-	-	-	-	-		-	-	-	-			-
198	2038	-	-	-	-	-		-	-	-	-			-
792	Phase 2	-	-	-	-	-		-	-	-	-			-
Average Daily Emissions (pounds)														

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)		
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2026	August	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2026	September	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2026	October	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2026	November	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2026	December	Cutting Torch	15	25	24	0.34							-	-	-	-	-	-	-
2027	January	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2027	February	Cutting Torch	15	25	160	0.34							-	-	-	-	-	-	-
2027	March	Cutting Torch	15	25	200	0.34							-	-	-	-	-	-	-
2027	April	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2027	May	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2027	June	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2027	July	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2027	August	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2027	September	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2027	October	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2027	November	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2027	December	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2028	January	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2028	February	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2028	March	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2028	April	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2028	May	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2028	June	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2028	July	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2028	August	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2028	September	Cutting Torch	15	25	8	0.34							-	-	-	-	-	-	-
2028	October	Cutting Torch	15	25	224	0.34							-	-	-	-	-	-	-
2028	November	Cutting Torch	15	25	304	0.34							-	-	-	-	-	-	-
2028	December	Cutting Torch	15	25	280	0.34							-	-	-	-	-	-	-
2029	January	Cutting Torch	15	25	160	0.34							-	-	-	-	-	-	-
2029	February	Cutting Torch	15	25	152	0.34							-	-	-	-	-	-	-
2029	March	Cutting Torch	15	25	72	0.34							-	-	-	-	-	-	-
2029	April	Cutting Torch	15	25	80	0.34							-	-	-	-	-	-	-
2029	May	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2029	June	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2029	July	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2029	August	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2029	September	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2029	October	Cutting Torch	15	25	136	0.34							-	-	-	-	-	-	-
2029	November	Cutting Torch	15	25	168	0.34							-	-	-	-	-	-	-
2029	December	Cutting Torch	15	25	16	0.34							-	-	-	-	-	-	-
2030	January	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2030	February	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2030	March	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2030	April	Cutting Torch	15	25	64	0.34							-	-	-	-	-	-	-
2030	May	Cutting Torch	15	25	96	0.34							-	-	-	-	-	-	-
2030	June	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2030	July	Cutting Torch	15	25	144	0.34							-	-	-	-	-	-	-
2030	August	Cutting Torch	15	25	16	0.34							-	-	-	-	-	-	-
2030	September	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-
2030	October	Cutting Torch	15	25		0.34							-	-	-	-	-	-	-

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		2026	2027	2028	2029	2030	Phase 1	2035	2036	2037	2038	Phase 2	CO2 (metric tons)	gals Diesel
Days		ROG	CO	NOX	PM10	PM2.5								
132	2026	-	-	-	-	-		-	-	-	-			-
264	2027	-	-	-	-	-		-	-	-	-			-
264	2028	-	-	-	-	-		-	-	-	-			-
264	2029	-	-	-	-	-		-	-	-	-			-
220	2030	-	-	-	-	-		-	-	-	-			-
1144	Phase 1	-	-	-	-	-		-	-	-	-			-
264	2035	-	-	-	-	-		-	-	-	-			-
264	2036	-	-	-	-	-		-	-	-	-			-
264	2037	-	-	-	-	-		-	-	-	-			-
198	2038	-	-	-	-	-		-	-	-	-			-
792	Phase 2	-	-	-	-	-		-	-	-	-			-
Average Daily Emissions (pounds)														

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)		
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2026	August	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2026	September	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2026	October	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2026	November	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2026	December	Pipe Fitter Tools	15	10	24	0.34							-	-	-	-	-	-	-
2027	January	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2027	February	Pipe Fitter Tools	15	10	160	0.34							-	-	-	-	-	-	-
2027	March	Pipe Fitter Tools	15	10	200	0.34							-	-	-	-	-	-	-
2027	April	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2027	May	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2027	June	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2027	July	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2027	August	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2027	September	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2027	October	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2027	November	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2027	December	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2028	January	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2028	February	Pipe Fitter Tools	15	10	4	0.34							-	-	-	-	-	-	-
2028	March	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2028	April	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2028	May	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2028	June	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2028	July	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2028	August	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2028	September	Pipe Fitter Tools	15	10	8	0.34							-	-	-	-	-	-	-
2028	October	Pipe Fitter Tools	15	10	224	0.34							-	-	-	-	-	-	-
2028	November	Pipe Fitter Tools	15	10	304	0.34							-	-	-	-	-	-	-
2028	December	Pipe Fitter Tools	15	10	280	0.34							-	-	-	-	-	-	-
2029	January	Pipe Fitter Tools	15	10	160	0.34							-	-	-	-	-	-	-
2029	February	Pipe Fitter Tools	15	10	152	0.34							-	-	-	-	-	-	-
2029	March	Pipe Fitter Tools	15	10	72	0.34							-	-	-	-	-	-	-
2029	April	Pipe Fitter Tools	15	10	80	0.34							-	-	-	-	-	-	-
2029	May	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2029	June	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2029	July	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2029	August	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2029	September	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2029	October	Pipe Fitter Tools	15	10	136	0.34							-	-	-	-	-	-	-
2029	November	Pipe Fitter Tools	15	10	168	0.34							-	-	-	-	-	-	-
2029	December	Pipe Fitter Tools	15	10	16	0.34							-	-	-	-	-	-	-
2030	January	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2030	February	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2030	March	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2030	April	Pipe Fitter Tools	15	10	64	0.34							-	-	-	-	-	-	-
2030	May	Pipe Fitter Tools	15	10	96	0.34							-	-	-	-	-	-	-
2030	June	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2030	July	Pipe Fitter Tools	15	10	144	0.34							-	-	-	-	-	-	-
2030	August	Pipe Fitter Tools	15	10	16	0.34							-	-	-	-	-	-	-
2030	September	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-
2030	October	Pipe Fitter Tools	15	10		0.34							-	-	-	-	-	-	-

[illegible]

	2026	-	-	-	-	-	-	-
	2027	-	-	-	-	-	-	-
	2028	-	-	-	-	-	-	-
	2029	-	-	-	-	-	-	-
	2030	-	-	-	-	-	-	-
	Phase 1	-	-	-	-	-	-	-
	2035	-	-	-	-	-	-	-
	2036	-	-	-	-	-	-	-
	2037	-	-	-	-	-	-	-
	2038	-	-	-	-	-	-	-
	Phase 2	-	-	-	-	-	-	-
		ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel
Days		Emissions (tons)						
132	2026	-	-	-	-	-		
264	2027	-	-	-	-	-		
264	2028	-	-	-	-	-		
264	2029	-	-	-	-	-		
220	2030	-	-	-	-	-		
1144	Phase 1	-	-	-	-	-		
264	2035	-	-	-	-	-		
264	2036	-	-	-	-	-		
264	2037	-	-	-	-	-		
198	2038	-	-	-	-	-		
792	Phase 2	-	-	-	-	-		
		Average Daily Emissions (pounds)						

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2026	August	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2026	September	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2026	October	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2026	November	Pile Driving Rig	16	300	136	0.50	0.06	2.20	0.26	0.01	0.01	264.02	0.00	0.05	0.01	0.00	0.00	5	531
2026	December	Pile Driving Rig	16	300	144	0.50	0.06	2.20	0.26	0.01	0.01	264.02	0.00	0.05	0.01	0.00	0.00	6	562
2027	January	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	February	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	March	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	April	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	May	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	June	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	July	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	August	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	September	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	October	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	November	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	December	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2028	January	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	February	Pile Driving Rig	16	300	40	0.50	0.06	2.20	0.26	0.01	0.01	263.59	0.00	0.01	0.00	0.00	0.00	2	156
2028	March	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	April	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	May	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	June	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	July	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	August	Pile Driving Rig	16	300	40	0.50	0.06	2.20	0.26	0.01	0.01	263.59	0.00	0.01	0.00	0.00	0.00	2	156
2028	September	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	October	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	November	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	December	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2029	January	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	February	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	March	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	April	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	May	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	June	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	July	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	August	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	September	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	October	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	November	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	December	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2030	January	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	February	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	March	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	April	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	May	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	June	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	July	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	August	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	September	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	October	Pile Driving Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	
2026	July	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-
2026	August	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-
2026	September	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-
2026	October	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-
2026	November	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-
2026	December	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-
2027	January	Pier Drilling Rig	16	300	128	0.50	0.06	2.20	0.26	0.01	0.01	264.02	0.00	0.05	0.01	0.00	0.00	5
2027	February	Pier Drilling Rig	16	300	152	0.50	0.06	2.20	0.26	0.01	0.01	264.02	0.00	0.06	0.01	0.00	0.00	6
2027	March	Pier Drilling Rig	16	300	48	0.50	0.06	2.20	0.26	0.01	0.01	264.02	0.00	0.02	0.00	0.00	0.00	2
2027	April	Pier Drilling Rig	16	300	24	0.50	0.06	2.20	0.26	0.01	0.01	264.02	0.00	0.01	0.00	0.00	0.00	1
2027	May	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-
2027	June	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-
2027	July	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-
2027	August	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-
2027	September	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-
2027	October	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-
2027	November	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-
2027	December	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-
2028	January	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-
2028	February	Pier Drilling Rig	16	300	24	0.50	0.06	2.20	0.26	0.01	0.01	263.59	0.00	0.01	0.00	0.00	0.00	1
2028	March	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-
2028	April	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-
2028	May	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-
2028	June	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-
2028	July	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-
2028	August	Pier Drilling Rig	16	300	112	0.50	0.06	2.20	0.26	0.01	0.01	263.59	0.00	0.04	0.00	0.00	0.00	4
2028	September	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-
2028	October	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-
2028	November	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-
2028	December	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-
2029	January	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-
2029	February	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-
2029	March	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-
2029	April	Pier Drilling Rig	16	300	16	0.50	0.06	2.20	0.26	0.01	0.01	263.88	0.00	0.01	0.00	0.00	0.00	1
2029	May	Pier Drilling Rig	16	300	176	0.50	0.06	2.20	0.26	0.01	0.01	263.88	0.00	0.06	0.01	0.00	0.00	7
2029	June	Pier Drilling Rig	16	300	8	0.50	0.06	2.20	0.26	0.01	0.01	263.88	0.00	0.00	0.00	0.00	0.00	0
2029	July	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-
2029	August	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-
2029	September	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-
2029	October	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-
2029	November	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-
2029	December	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-
2030	January	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-
2030	February	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-
2030	March	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-
2030	April	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-
2030	May	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-
2030	June	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-
2030	July	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-
2030	August	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-
2030	September	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-
2030	October	Pier Drilling Rig	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-

2035	January	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2035	February	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2035	March	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2035	April	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2035	May	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2035	June	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2035	July	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2035	August	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2035	September	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2035	October	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2035	November	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2035	December	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2036	January	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2036	February	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2036	March	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2036	April	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2036	May	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2036	June	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2036	July	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2036	August	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2036	September	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2036	October	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2036	November	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2036	December	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2037	January	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2037	February	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2037	March	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2037	April	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2037	May	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2037	June	Pier Drilling Rig	16	300	32	0.50	0.06	2.20	0.26	0.01	0.01	263.88	0.00	0.01	0.00	0.00	0.00		1	125
2037	July	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2037	August	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2037	September	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2037	October	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2037	November	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2037	December	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2038	January	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2038	February	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2038	March	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2038	April	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2038	May	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2038	June	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2038	July	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2038	August	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-
2038	September	Pier Drilling Rig	16	300	0	0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-	-

		Offroad Construction Equipment Emissions - Unmitigated																	
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)		
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	August	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	September	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	October	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	November	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	December	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.09	-	-	-	-	-	-	-
2027	January	Concrete Boom Pl	17	350	4	0.38	0.06	2.20	0.26	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	0	11
2027	February	Concrete Boom Pl	17	350	4	0.38	0.06	2.20	0.26	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	0	11
2027	March	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	April	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	May	Concrete Boom Pl	17	350	32	0.38	0.06	2.20	0.26	0.01	0.01	202.03	0.00	0.01	0.00	0.00	0.00	1	85
2027	June	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	July	Concrete Boom Pl	17	350	16	0.38	0.06	2.20	0.26	0.01	0.01	202.03	0.00	0.01	0.00	0.00	0.00	0	42
2027	August	Concrete Boom Pl	17	350	112	0.38	0.06	2.20	0.26	0.01	0.01	202.03	0.00	0.04	0.00	0.00	0.00	3	296
2027	September	Concrete Boom Pl	17	350	32	0.38	0.06	2.20	0.26	0.01	0.01	202.03	0.00	0.01	0.00	0.00	0.00	1	85
2027	October	Concrete Boom Pl	17	350	16	0.38	0.06	2.20	0.26	0.01	0.01	202.03	0.00	0.01	0.00	0.00	0.00	0	42
2027	November	Concrete Boom Pl	17	350	40	0.38	0.06	2.20	0.26	0.01	0.01	202.03	0.00	0.01	0.00	0.00	0.00	1	106
2027	December	Concrete Boom Pl	17	350	16	0.38	0.06	2.20	0.26	0.01	0.01	202.03	0.00	0.01	0.00	0.00	0.00	0	42
2028	January	Concrete Boom Pl	17	350	40	0.38	0.06	2.20	0.26	0.01	0.01	202.14	0.00	0.01	0.00	0.00	0.00	1	106
2028	February	Concrete Boom Pl	17	350	48	0.38	0.06	2.20	0.26	0.01	0.01	202.14	0.00	0.02	0.00	0.00	0.00	1	127
2028	March	Concrete Boom Pl	17	350	120	0.38	0.06	2.20	0.26	0.01	0.01	202.14	0.00	0.04	0.00	0.00	0.00	3	318
2028	April	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	May	Concrete Boom Pl	17	350	16	0.38	0.06	2.20	0.26	0.01	0.01	202.14	0.00	0.01	0.00	0.00	0.00	0	42
2028	June	Concrete Boom Pl	17	350	16	0.38	0.06	2.20	0.26	0.01	0.01	202.14	0.00	0.01	0.00	0.00	0.00	0	42
2028	July	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	August	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	September	Concrete Boom Pl	17	350	8	0.38	0.06	2.20	0.26	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	21
2028	October	Concrete Boom Pl	17	350	8	0.38	0.06	2.20	0.26	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	21
2028	November	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	December	Concrete Boom Pl	17	350	8	0.38	0.06	2.20	0.26	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	21
2029	January	Concrete Boom Pl	17	350	16	0.38	0.06	2.20	0.26	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0	42
2029	February	Concrete Boom Pl	17	350	72	0.38	0.06	2.20	0.26	0.01	0.01	202.22	0.00	0.02	0.00	0.00	0.00	2	191
2029	March	Concrete Boom Pl	17	350	176	0.38	0.06	2.20	0.26	0.01	0.01	202.22	0.00	0.06	0.01	0.00	0.00	5	466
2029	April	Concrete Boom Pl	17	350	120	0.38	0.06	2.20	0.26	0.01	0.01	202.22	0.00	0.04	0.00	0.00	0.00	3	318
2029	May	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	June	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	July	Concrete Boom Pl	17	350	16	0.38	0.06	2.20	0.26	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0	42
2029	August	Concrete Boom Pl	17	350	8	0.38	0.06	2.20	0.26	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	21
2029	September	Concrete Boom Pl	17	350	8	0.38	0.06	2.20	0.26	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	21
2029	October	Concrete Boom Pl	17	350	8	0.38	0.06	2.20	0.26	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	21
2029	November	Concrete Boom Pl	17	350	8	0.38	0.06	2.20	0.26	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	21
2029	December	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	January	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	February	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	March	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	April	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	May	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	June	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	July	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	August	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	September	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	October	Concrete Boom Pl	17	350		0.38	0.06	2.20	0.26	0.01	0.01	202.22	-	-	-	-	-	-	-

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2
2026	July	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.71	-	-	-	-	-	-
2026	August	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.71	-	-	-	-	-	-
2026	September	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.71	-	-	-	-	-	-
2026	October	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.71	-	-	-	-	-	-
2026	November	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.71	-	-	-	-	-	-
2026	December	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.71	-	-	-	-	-	-
2027	January	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2027	February	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2027	March	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2027	April	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2027	May	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2027	June	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2027	July	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2027	August	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2027	September	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2027	October	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2027	November	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2027	December	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2028	January	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2028	February	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2028	March	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2028	April	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2028	May	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2028	June	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2028	July	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2028	August	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2028	September	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2028	October	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2028	November	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2028	December	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.90	-	-	-	-	-	-
2029	January	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2029	February	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2029	March	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2029	April	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2029	May	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2029	June	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2029	July	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2029	August	Paving Equipment	18	300	160	0.36	0.06	2.20	0.26	0.01	0.01	187.75	0.00	0.04	0.00	0.00	0.00	3
2029	September	Paving Equipment	18	300	640	0.36	0.06	2.20	0.26	0.01	0.01	187.75	0.00	0.17	0.02	0.00	0.00	13
2029	October	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2029	November	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2029	December	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2030	January	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2030	February	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2030	March	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2030	April	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2030	May	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2030	June	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2030	July	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2030	August	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2030	September	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-
2030	October	Paving Equipment	18	300		0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-

2035	January	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2035	February	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2035	March	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2035	April	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2035	May	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2035	June	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2035	July	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2035	August	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2035	September	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2035	October	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2035	November	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2035	December	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2036	January	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2036	February	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2036	March	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2036	April	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2036	May	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2036	June	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2036	July	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2036	August	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2036	September	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2036	October	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2036	November	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2036	December	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2037	January	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2037	February	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2037	March	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2037	April	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2037	May	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2037	June	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2037	July	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2037	August	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2037	September	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2037	October	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2037	November	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2037	December	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2038	January	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2038	February	Paving Equipment	18	300	80	0.36	0.06	2.20	0.26	0.01	0.01	187.75	0.00	0.02	0.00	0.00	0.00	2	160
2038	March	Paving Equipment	18	300	320	0.36	0.06	2.20	0.26	0.01	0.01	187.75	0.00	0.08	0.01	0.00	0.00	6	639
2038	April	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2038	May	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2038	June	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2038	July	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2038	August	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-
2038	September	Paving Equipment	18	300	0	0.36	0.06	2.20	0.26	0.01	0.01	187.75	-	-	-	-	-	-	-

22 Days per Month 10.15 kg/CO2/gal		2026	-	-	-	-	-	-	-	-	
		2027	-	-	-	-	-	-	-	-	
		2028	-	-	-	-	-	-	-	-	
		2029	0.01	0.21	0.02	0.00	0.00	16.22	1,598		
		2030	-	-	-	-	-	-	-	-	
	Phase 1	0.01	0.21	0.02	0.00	0.00	16.22	1,598			
		2035	-	-	-	-	-	-	-	-	
		2036	-	-	-	-	-	-	-	-	
		2037	-	-	-	-	-	-	-	-	
		2038	0.00	0.10	0.01	0.00	0.00	8.11	799		
	Phase 2	0.00	0.10	0.01	0.00	0.00	8.11	799			
			ROG	CO	NOX	PM10	PM2.5		CO2 (metric tons)	gals Diesel	
	Days		Emissions (tons)								
	132	2026	-	-	-	-	-				
	264	2027	-	-	-	-	-				
	264	2028	-	-	-	-	-				
	264	2029	0.04	1.59	0.19	0.01	0.01				
	220	2030	-	-	-	-	-				
	1144	Phase 1	0.01	0.37	0.04	0.00	0.00				
		2035	-	-	-	-	-				
264	2036	-	-	-	-	-					
264	2037	-	-	-	-	-					
198	2038	0.03	1.06	0.13	0.00	0.00					
792	Phase 2	0.01	0.26	0.03	0.00	0.00					
		Average Daily Emissions (pounds)									

22 Days per Month

10.15 kg/CO2/gal

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2026	August	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2026	September	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2026	October	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2026	November	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2026	December	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	January	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	February	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	March	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	April	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	May	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	June	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	July	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	August	Jack & Bore	16	300	64	0.50	0.06	2.20	0.26	0.01	0.01	264.02	0.00	0.02	0.00	0.00	0.00	3	250
2027	September	Jack & Bore	16	300	168	0.50	0.06	2.20	0.26	0.01	0.01	264.02	0.00	0.06	0.01	0.00	0.00	7	656
2027	October	Jack & Bore	16	300	168	0.50	0.06	2.20	0.26	0.01	0.01	264.02	0.00	0.06	0.01	0.00	0.00	7	656
2027	November	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2027	December	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	264.02	-	-	-	-	-	-	-
2028	January	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	February	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	March	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	April	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	May	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	June	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	July	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	August	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	September	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	October	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	November	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2028	December	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.59	-	-	-	-	-	-	-
2029	January	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	February	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	March	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	April	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	May	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	June	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	July	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	August	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	September	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	October	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	November	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2029	December	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.88	-	-	-	-	-	-	-
2030	January	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	February	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	March	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	April	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	May	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	June	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	July	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	August	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	September	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-
2030	October	Jack & Bore	16	300		0.50	0.06	2.20	0.26	0.01	0.01	263.95	-	-	-	-	-	-	-

		2026	-	-	-	-	-	-	-	-
		2027	0.00	0.15	0.02	0.00	0.00		15.84	1,561
		2028	-	-	-	-	-		-	-
		2029	-	-	-	-	-		-	-
		2030	-	-	-	-	-		-	-
		Phase 1	0.00	0.15	0.02	0.00	0.00		15.84	1,561
		2035	-	-	-	-	-		-	-
		2036	-	-	-	-	-		-	-
		2037	-	-	-	-	-		-	-
		2038	-	-	-	-	-		-	-
		Phase 2	-	-	-	-	-		-	-
			ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)		gals Diesel
			Emissions (tons)							
		Days								
		132	2026	-	-	-	-			
		264	2027	0.03	1.10	0.13	0.00	0.00		
		264	2028	-	-	-	-			
		264	2029	-	-	-	-			
		220	2030	-	-	-	-			
		1144	Phase 1	0.01	0.25	0.03	0.00	0.00		
		264	2035	-	-	-	-			
		264	2036	-	-	-	-			
		264	2037	-	-	-	-			
		198	2038	-	-	-	-			
		792	Phase 2	-	-	-	-			
			Average Daily Emissions (pounds)							

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	
2026	July	Fuel Truck	17	325		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-
2026	August	Fuel Truck	17	325	96	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.01	0.01	0.00	0.00	2
2026	September	Fuel Truck	17	325	168	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.01	0.01	0.00	0.00	4
2026	October	Fuel Truck	17	325	176	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.01	0.01	0.00	0.00	4
2026	November	Fuel Truck	17	325	144	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.01	0.01	0.00	0.00	4
2026	December	Fuel Truck	17	325	160	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.01	0.01	0.00	0.00	4
2027	January	Fuel Truck	17	325	152	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	February	Fuel Truck	17	325	152	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	March	Fuel Truck	17	325	184	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	5
2027	April	Fuel Truck	17	325	176	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	May	Fuel Truck	17	325	160	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	June	Fuel Truck	17	325	176	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	July	Fuel Truck	17	325	168	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	August	Fuel Truck	17	325	176	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	September	Fuel Truck	17	325	168	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	October	Fuel Truck	17	325	168	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	November	Fuel Truck	17	325	152	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	December	Fuel Truck	17	325	168	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2028	January	Fuel Truck	17	325	152	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	February	Fuel Truck	17	325	160	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	March	Fuel Truck	17	325	184	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	5
2028	April	Fuel Truck	17	325	160	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	May	Fuel Truck	17	325	176	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	June	Fuel Truck	17	325	176	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	July	Fuel Truck	17	325	152	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	August	Fuel Truck	17	325	184	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	5
2028	September	Fuel Truck	17	325	160	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	October	Fuel Truck	17	325	176	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	November	Fuel Truck	17	325	152	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2028	December	Fuel Truck	17	325	152	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	4
2029	January	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	February	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	March	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	April	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	May	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	June	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	July	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	August	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	5
2029	September	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	October	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	November	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2029	December	Fuel Truck	17	325	#	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	January	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	February	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	March	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	April	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	May	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	June	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	July	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	August	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	September	Fuel Truck	17	325	#	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4
2030	October	Fuel Truck	17	325	32	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1

2035	January	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	-
2035	February	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	-
2035	March	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	-
2035	April	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	-
2035	May	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	-
2035	June	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	-
2035	July	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	-
2035	August	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	-
2035	September	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	-
2035	October	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	-
2035	November	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	-
2035	December	Fuel Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	-
2036	January	Fuel Truck	17	325	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-	-
2036	February	Fuel Truck	17	325	144	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	354
2036	March	Fuel Truck	17	325	168	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	413
2036	April	Fuel Truck	17	325	176	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	433
2036	May	Fuel Truck	17	325	176	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	433
2036	June	Fuel Truck	17	325	168	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	413
2036	July	Fuel Truck	17	325	184	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	0.00	5	453
2036	August	Fuel Truck	17	325	168	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	413
2036	September	Fuel Truck	17	325	176	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	433
2036	October	Fuel Truck	17	325	184	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	0.00	5	453
2036	November	Fuel Truck	17	325	160	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	394
2036	December	Fuel Truck	17	325	184	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	0.00	5	453
2037	January	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	433
2037	February	Fuel Truck	17	325	160	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	394
2037	March	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	433
2037	April	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	433
2037	May	Fuel Truck	17	325	168	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	413
2037	June	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	433
2037	July	Fuel Truck	17	325	184	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	5	453
2037	August	Fuel Truck	17	325	168	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	413
2037	September	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	433
2037	October	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	433
2037	November	Fuel Truck	17	325	168	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	413
2037	December	Fuel Truck	17	325	184	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	5	453
2038	January	Fuel Truck	17	325	168	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	413
2038	February	Fuel Truck	17	325	160	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	394
2038	March	Fuel Truck	17	325	184	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	5	453
2038	April	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	433
2038	May	Fuel Truck	17	325	168	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	413
2038	June	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	433
2038	July	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	433
2038	August	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	433
2038	September	Fuel Truck	17	325	176	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	0.00	4	433

22 Days per Month	10.15 kg/CO2/gal	2026	0.01	0.05	0.04	0.00	0.00	18.57	1,829
		2027	0.02	0.12	0.10	0.00	0.00	49.90	4,916
		2028	0.02	0.12	0.09	0.00	0.00	49.53	4,880
		2029	0.02	0.12	0.08	0.00	0.00	49.55	4,882
		2030	0.01	0.09	0.06	0.00	0.00	38.16	3,760
		Phase 1	0.07	0.50	0.38	0.01	0.01	205.71	20,267
		2035	-	-	-	-	-	-	-
		2036	0.02	0.11	0.05	0.00	0.00	47.15	4,645
		2037	0.02	0.12	0.05	0.00	0.00	52.15	5,138
		2038	0.01	0.09	0.04	0.00	0.00	38.96	3,838
Days	Emissions (tons)	Phase 2	0.05	0.33	0.15	0.01	0.01	138.26	13,621
		ROG						CO2 (metric tons)	gals Diesel
		CO							
		NOX							
		PM10							
		PM2.5							
		2026	0.10	0.69	0.59	0.02	0.02		
		264 2027	0.14	0.93	0.76	0.03	0.02		
		264 2028	0.14	0.91	0.70	0.02	0.02		
		264 2029	0.13	0.90	0.64	0.02	0.02		
Average Daily Emissions (pounds)		220 2030	0.12	0.83	0.56	0.02	0.02		
		1144 Phase 1	0.13	0.87	0.66	0.02	0.02		
		264 2035	-	-	-	-	-		
		264 2036	0.12	0.85	0.40	0.02	0.01		
		264 2037	0.13	0.93	0.42	0.02	0.01		
		198 2038	0.13	0.93	0.41	0.02	0.01		
		792 Phase 2	0.11	0.82	0.38	0.01	0.01		

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)						Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Supervisor Truck	11	300		0.38	0.07	0.47	0.41	0.02	0.01	200.94	-	-	-	-	-	-	-
2026	August	Supervisor Truck	11	300	144	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.01	0.01	0.00	0.00	3	325
2026	September	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.01	0.01	0.00	0.00	6	569
2026	October	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.02	0.01	0.00	0.00	6	596
2026	November	Supervisor Truck	11	300	216	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	487
2026	December	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	542
2027	January	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	5	515
2027	February	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	5	515
2027	March	Supervisor Truck	11	300	276	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.02	0.01	0.00	0.00	6	623
2027	April	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.02	0.01	0.00	0.00	6	596
2027	May	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	5	542
2027	June	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.02	0.01	0.00	0.00	6	596
2027	July	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	6	569
2027	August	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.02	0.01	0.00	0.00	6	596
2027	September	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	6	569
2027	October	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	6	569
2027	November	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	5	515
2027	December	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	6	569
2028	January	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	515
2028	February	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	542
2028	March	Supervisor Truck	11	300	276	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.02	0.01	0.00	0.00	6	623
2028	April	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	542
2028	May	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.02	0.01	0.00	0.00	6	596
2028	June	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.02	0.01	0.00	0.00	6	596
2028	July	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	515
2028	August	Supervisor Truck	11	300	276	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.02	0.01	0.00	0.00	6	623
2028	September	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	542
2028	October	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.02	0.01	0.00	0.00	6	596
2028	November	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	515
2028	December	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	5	515
2029	January	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	542
2029	February	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	515
2029	March	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.02	0.01	0.00	0.00	6	596
2029	April	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	6	569
2029	May	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.02	0.01	0.00	0.00	6	596
2029	June	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	6	569
2029	July	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	542
2029	August	Supervisor Truck	11	300	276	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.02	0.01	0.00	0.00	6	623
2029	September	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	515
2029	October	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.02	0.01	0.00	0.00	6	596
2029	November	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	6	569
2029	December	Supervisor Truck	11	300	216	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	488
2030	January	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	542
2030	February	Supervisor Truck	11	300	228	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	515
2030	March	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	6	569
2030	April	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.02	0.01	0.00	0.00	6	596
2030	May	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.02	0.01	0.00	0.00	6	596
2030	June	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	542
2030	July	Supervisor Truck	11	300	252	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	6	569
2030	August	Supervisor Truck	11	300	264	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.02	0.01	0.00	0.00	6	596
2030	September	Supervisor Truck	11	300	240	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	5	542
2030	October	Supervisor Truck	11	300	48	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	1	108

2035	January	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	February	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	March	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	April	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	May	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	June	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	July	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	August	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	September	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	October	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	November	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2035	December	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2036	January	Supervisor Truck	11	300	0	0.38	0.06	0.45	0.24	0.01	0.01	201.01	-	-	-	-	-	-	-	-
2036	February	Supervisor Truck	11	300	136	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	3	307
2036	March	Supervisor Truck	11	300	168	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	379
2036	April	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2036	May	Supervisor Truck	11	300	168	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	379
2036	June	Supervisor Truck	11	300	168	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	379
2036	July	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2036	August	Supervisor Truck	11	300	168	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	379
2036	September	Supervisor Truck	11	300	168	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	379
2036	October	Supervisor Truck	11	300	184	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	415
2036	November	Supervisor Truck	11	300	136	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	3	307
2036	December	Supervisor Truck	11	300	152	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	3	343
2037	January	Supervisor Truck	11	300	152	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	3	343
2037	February	Supervisor Truck	11	300	152	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	3	343
2037	March	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2037	April	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2037	May	Supervisor Truck	11	300	160	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	4	361
2037	June	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2037	July	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2037	August	Supervisor Truck	11	300	168	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	4	379
2037	September	Supervisor Truck	11	300	168	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	4	379
2037	October	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2037	November	Supervisor Truck	11	300	144	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	3	325
2037	December	Supervisor Truck	11	300	160	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	4	361
2038	January	Supervisor Truck	11	300	152	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	3	343
2038	February	Supervisor Truck	11	300	160	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	4	361
2038	March	Supervisor Truck	11	300	184	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	415
2038	April	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2038	May	Supervisor Truck	11	300	168	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	0.00	4	379
2038	June	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2038	July	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2038	August	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397
2038	September	Supervisor Truck	11	300	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	0.00	4	397

22 Days per Month 10.15 kg/CO2/gal	Phase 1	2026	0.01	0.07	0.06	0.00	0.00	25.56	2,519
		2027	0.03	0.18	0.15	0.01	0.01	68.73	6,771
		2028	0.03	0.18	0.14	0.01	0.01	68.17	6,717
		2029	0.03	0.18	0.14	0.01	0.00	68.20	6,719
		2030	0.02	0.14	0.10	0.00	0.00	52.52	5,175
		Phase 1	0.11	0.73	0.59	0.02	0.02	283.18	27,900
		2035	-	-	-	-	-	-	-
		2036	0.01	0.10	0.05	0.00	0.00	41.25	4,064
		2037	0.02	0.11	0.06	0.00	0.00	45.46	4,479
		2038	0.01	0.09	0.04	0.00	0.00	35.38	3,486
	Phase 2	2026	0.04	0.30	0.16	0.01	0.01	122.09	12,029
		ROG						CO2 (metric tons)	gals Diesel
		CO							
		NOX							
		PM10							
		PM2.5							
		Days							
		132	2026	0.15	0.99	0.86	0.03	0.03	
		264	2027	0.20	1.34	1.12	0.04	0.04	
		264	2028	0.20	1.33	1.06	0.04	0.04	
		264	2029	0.20	1.33	1.06	0.04	0.04	
		220	2030	0.18	1.23	0.91	0.03	0.03	
		1144	Phase 1	0.19	1.27	1.02	0.04	0.04	
	Average Daily Emissions (pounds)	264	2035	-	-	-	-	-	
		264	2036	0.11	0.78	0.41	0.02	0.02	
		264	2037	0.11	0.86	0.43	0.02	0.02	
		198	2038	0.12	0.89	0.45	0.02	0.02	
		792	Phase 2	0.10	0.77	0.39	0.02	0.01	

		Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)			
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel	
2026	July	Dump Truck	17	400		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-	
2026	August	Dump Truck	17	400		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-	
2026	September	Dump Truck	17	400	50	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.00	0.00	0.00	0.00	2	151	
2026	October	Dump Truck	17	400	44	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.00	0.00	0.00	0.00	1	133	
2026	November	Dump Truck	17	400	100	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.01	0.01	0.00	0.00	3	303	
2026	December	Dump Truck	17	400	732	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.01	0.06	0.05	0.00	0.00	22	2,215	
2027	January	Dump Truck	17	400	646	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.01	0.05	0.04	0.00	0.00	20	1,954	
2027	February	Dump Truck	17	400	678	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.01	0.05	0.04	0.00	0.00	21	2,051	
2027	March	Dump Truck	17	400	910	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.01	0.07	0.06	0.00	0.00	28	2,753	
2027	April	Dump Truck	17	400	548	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.01	0.04	0.03	0.00	0.00	17	1,658	
2027	May	Dump Truck	17	400	40	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	1	121	
2027	June	Dump Truck	17	400	44	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	1	133	
2027	July	Dump Truck	17	400	42	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	1	127	
2027	August	Dump Truck	17	400	108	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	3	327	
2027	September	Dump Truck	17	400	210	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.02	0.01	0.00	0.00	6	635	
2027	October	Dump Truck	17	400	210	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.02	0.01	0.00	0.00	6	635	
2027	November	Dump Truck	17	400	230	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.02	0.01	0.00	0.00	7	696	
2027	December	Dump Truck	17	400	378	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.03	0.02	0.00	0.00	12	1,144	
2028	January	Dump Truck	17	400	710	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.01	0.05	0.04	0.00	0.00	22	2,149	
2028	February	Dump Truck	17	400	572	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.01	0.04	0.03	0.00	0.00	18	1,732	
2028	March	Dump Truck	17	400		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-	
2028	April	Dump Truck	17	400		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-	
2028	May	Dump Truck	17	400		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-	
2028	June	Dump Truck	17	400	560	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.01	0.04	0.03	0.00	0.00	17	1,695	
2028	July	Dump Truck	17	400	1520	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.02	0.11	0.09	0.00	0.00	47	4,601	
2028	August	Dump Truck	17	400	1186	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.01	0.09	0.07	0.00	0.00	36	3,590	
2028	September	Dump Truck	17	400	200	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	6	605	
2028	October	Dump Truck	17	400	220	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.02	0.01	0.00	0.00	7	666	
2028	November	Dump Truck	17	400	38	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	1	115	
2028	December	Dump Truck	17	400	110	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	3	333	
2029	January	Dump Truck	17	400	200	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	6	606	
2029	February	Dump Truck	17	400	94	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	285	
2029	March	Dump Truck	17	400	140	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4	424	
2029	April	Dump Truck	17	400	264	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.02	0.01	0.00	0.00	8	799	
2029	May	Dump Truck	17	400	176	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	5	533	
2029	June	Dump Truck	17	400	456	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.01	0.03	0.02	0.00	0.00	14	1,381	
2029	July	Dump Truck	17	400	3200	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.04	0.24	0.17	0.01	0.01	98	9,691	
2029	August	Dump Truck	17	400	3496	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.04	0.26	0.18	0.01	0.01	107	10,587	
2029	September	Dump Truck	17	400	2888	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.03	0.21	0.15	0.01	0.00	89	8,746	
2029	October	Dump Truck	17	400	3560	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.04	0.26	0.19	0.01	0.01	109	10,781	
2029	November	Dump Truck	17	400	1064	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.01	0.08	0.06	0.00	0.00	33	3,222	
2029	December	Dump Truck	17	400		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-	
2030	January	Dump Truck	17	400		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-	
2030	February	Dump Truck	17	400		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-	
2030	March	Dump Truck	17	400		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-	
2030	April	Dump Truck	17	400		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-	
2030	May	Dump Truck	17	400		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-	
2030	June	Dump Truck	17	400		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-	
2030	July	Dump Truck	17	400		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-	
2030	August	Dump Truck	17	400	320	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.02	0.02	0.00	0.00	10	969	
2030	September	Dump Truck	17	400	240	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.02	0.01	0.00	0.00	7	727	
2030	October	Dump Truck	17	400		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	January	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	February	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	March	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	April	Dump Truck	17	400	288	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.02	0.01	0.00	0.00	9	872	
2035	May	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	June	Dump Truck	17	400	288	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.02	0.01	0.00	0.00	9	872	
2035	July	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	August	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	September	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	October	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	November	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2035	December	Dump Truck	17	400	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-	
2036	January	Dump Truck	17	400	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-	
2036	February	Dump Truck	17	400	304	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.02	0.01	0.00	0.00	9	921	
2036	March	Dump Truck	17	400	240	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.02	0.01	0.00	0.00	7	727	
2036	April	Dump Truck	17	400	0	0.38</														

2036	May	Dump Truck	17	400	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	June	Dump Truck	17	400	120	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	363
2036	July	Dump Truck	17	400	888	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.01	0.06	0.03	0.00	0.00	27	2,689
2036	August	Dump Truck	17	400	674	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.01	0.05	0.02	0.00	0.00	21	2,041
2036	September	Dump Truck	17	400	526	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.01	0.04	0.02	0.00	0.00	16	1,593
2036	October	Dump Truck	17	400	503	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.01	0.04	0.02	0.00	0.00	15	1,523
2036	November	Dump Truck	17	400	3	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	9
2036	December	Dump Truck	17	400	96	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	291
2037	January	Dump Truck	17	400	72	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	2	218
2037	February	Dump Truck	17	400	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	March	Dump Truck	17	400	8	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	24
2037	April	Dump Truck	17	400	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	May	Dump Truck	17	400	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	June	Dump Truck	17	400	144	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	436
2037	July	Dump Truck	17	400	936	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.01	0.07	0.03	0.00	0.00	29	2,834
2037	August	Dump Truck	17	400	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	September	Dump Truck	17	400	360	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.03	0.01	0.00	0.00	11	1,090
2037	October	Dump Truck	17	400	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	November	Dump Truck	17	400	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	December	Dump Truck	17	400	912	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.01	0.07	0.03	0.00	0.00	28	2,762
2038	January	Dump Truck	17	400	3192	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.03	0.23	0.10	0.00	0.00	98	9,666
2038	February	Dump Truck	17	400	2736	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.03	0.20	0.09	0.00	0.00	84	8,285
2038	March	Dump Truck	17	400	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	April	Dump Truck	17	400	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	May	Dump Truck	17	400	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	June	Dump Truck	17	400	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	July	Dump Truck	17	400	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	August	Dump Truck	17	400	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	September	Dump Truck	17	400	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-

		2026	0.01	0.07	0.06	0.00	0.00	28.44	2,802
		2027	0.05	0.30	0.25	0.01	0.01	124.18	12,235
		2028	0.06	0.38	0.29	0.01	0.01	157.19	15,487
		2029	0.17	1.15	0.82	0.03	0.03	477.60	47,054
		2030	0.01	0.04	0.03	0.00	0.00	17.21	1,696
Phase 1			0.29	1.95	1.45	0.05	0.05	804.63	79,274
		2035	0.01	0.04	0.02	0.00	0.00	17.70	1,744
		2036	0.03	0.24	0.12	0.00	0.00	103.09	10,157
		2037	0.02	0.18	0.08	0.00	0.00	74.75	7,365
		2038	0.06	0.43	0.19	0.01	0.01	182.21	17,952
Phase 2			0.12	0.89	0.41	0.02	0.01	377.76	37,218
		ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel	
		Emissions (tons)							
Days		132	2026	0.16	1.06	0.91	0.03	0.03	
		264	2027	0.35	2.31	1.89	0.07	0.06	
		264	2028	0.43	2.90	2.21	0.08	0.07	
		264	2029	1.29	8.70	6.20	0.22	0.20	
		220	2030	0.05	0.37	0.25	0.01	0.01	
1144		Phase 1	0.51	3.40	2.53	0.09	0.08		
		264	2035	0.04	0.32	0.16	0.01	0.01	
		264	2036	0.26	1.85	0.88	0.03	0.03	
		264	2037	0.18	1.34	0.60	0.02	0.02	
		198	2038	0.60	4.34	1.94	0.07	0.07	
792		Phase 2	0.31	2.25	1.03	0.04	0.04		
		Average Daily Emissions (pounds)							

22 Days per Month

10.15 kg/CO2/gal

Offroad Construction Equipment Emissions - Unmitigated																			
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)		
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel
2026	July	Haul Truck	17	325		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	August	Haul Truck	17	325		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	September	Haul Truck	17	325		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	October	Haul Truck	17	325		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-	-
2026	November	Haul Truck	17	325	272	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.02	0.01	0.00	0.00	7	669
2026	December	Haul Truck	17	325	288	0.38	0.07	0.45	0.39	0.01	0.01	202.09	0.00	0.02	0.02	0.00	0.00	7	708
2027	January	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	February	Haul Truck	17	325	4	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	0	10
2027	March	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	April	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	May	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	June	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	July	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	August	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	September	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	October	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	November	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2027	December	Haul Truck	17	325		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-	-
2028	January	Haul Truck	17	325		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	February	Haul Truck	17	325	88	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.00	0.00	0.00	2	216
2028	March	Haul Truck	17	325	12	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	30
2028	April	Haul Truck	17	325	4	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	10
2028	May	Haul Truck	17	325		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	June	Haul Truck	17	325	6	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	14
2028	July	Haul Truck	17	325	10	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	26
2028	August	Haul Truck	17	325	82	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	2	201
2028	September	Haul Truck	17	325	14	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0	35
2028	October	Haul Truck	17	325		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	November	Haul Truck	17	325		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-
2028	December	Haul Truck	17	325		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-	-
2029	January	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	February	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	March	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	April	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	May	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	June	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	July	Haul Truck	17	325	14	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	35
2029	August	Haul Truck	17	325	2	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	4
2029	September	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	October	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	November	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2029	December	Haul Truck	17	325		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	January	Haul Truck	17	325		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	February	Haul Truck	17	325		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	March	Haul Truck	17	325		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	April	Haul Truck	17	325		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	May	Haul Truck	17	325		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	June	Haul Truck	17	325	28	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	69
2030	July	Haul Truck	17	325	156	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	4	384
2030	August	Haul Truck	17	325	16	0.38	0.06	0.44	0.30	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	39
2030	September	Haul Truck	17	325		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-
2030	October	Haul Truck	17	325		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-	-

2035	January	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	February	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	March	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	April	Haul Truck	17	325	15.2	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	37
2035	May	Haul Truck	17	325	0.8	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	2
2035	June	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	July	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	August	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	September	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	October	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	November	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	December	Haul Truck	17	325	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	January	Haul Truck	17	325	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	February	Haul Truck	17	325	96	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	2	236
2036	March	Haul Truck	17	325	32	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	79
2036	April	Haul Truck	17	325	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	May	Haul Truck	17	325	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	June	Haul Truck	17	325	40	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	98
2036	July	Haul Truck	17	325	216	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	5	531
2036	August	Haul Truck	17	325	138.2	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	340
2036	September	Haul Truck	17	325	180.6	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	5	444
2036	October	Haul Truck	17	325	105.2	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	259
2036	November	Haul Truck	17	325	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	December	Haul Truck	17	325	8	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	20
2037	January	Haul Truck	17	325	13.6	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	33
2037	February	Haul Truck	17	325	2.4	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	6
2037	March	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	April	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	May	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	June	Haul Truck	17	325	24	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	59
2037	July	Haul Truck	17	325	144.8	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	4	356
2037	August	Haul Truck	17	325	7.2	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	18
2037	September	Haul Truck	17	325	40	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	98
2037	October	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	November	Haul Truck	17	325	7.2	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	18
2037	December	Haul Truck	17	325	0.8	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	2
2038	January	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	February	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	March	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	April	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	May	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	June	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	July	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	August	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	September	Haul Truck	17	325	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-

22 Days per Month	10.15 kg/CO2/gal	2026	0.01	0.03	0.03	0.00	0.00	13.98	1,377
		2027	0.00	0.00	0.00	0.00	0.00	0.10	10
		2028	0.00	0.01	0.01	0.00	0.00	5.39	531
		2029	0.00	0.00	0.00	0.00	0.00	0.40	39
		2030	0.00	0.01	0.01	0.00	0.00	4.99	492
		Phase 1	0.01	0.06	0.05	0.00	0.00	24.86	2,450
		2035	0.00	0.00	0.00	0.00	0.00	0.40	39
		2036	0.01	0.05	0.02	0.00	0.00	20.38	2,008
		2037	0.00	0.01	0.01	0.00	0.00	5.99	591
		2038	-	-	-	-	-	-	-
Days	Average Daily Emissions (pounds)	Phase 2	0.01	0.06	0.03	0.00	0.00	26.77	2,638
		ROG		CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel
		132	2026	0.08	0.52	0.45	0.02	0.01	
		264	2027	0.00	0.00	0.00	0.00	0.00	
		264	2028	0.01	0.10	0.08	0.00	0.00	
		264	2029	0.00	0.01	0.01	0.00	0.00	
		220	2030	0.02	0.11	0.07	0.00	0.00	
		1144	Phase 1	0.02	0.11	0.08	0.00	0.00	
		264	2035	0.00	0.01	0.00	0.00	0.00	
		264	2036	0.05	0.37	0.17	0.01	0.01	
198	792	2037	0.01	0.11	0.05	0.00	0.00		
		2038	-	-	-	-	-		
		Phase 2	0.02	0.16	0.08	0.00	0.00		

Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)	
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2
2026	July	Concrete Truck	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-
2026	August	Concrete Truck	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-
2026	September	Concrete Truck	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-
2026	October	Concrete Truck	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-
2026	November	Concrete Truck	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-
2026	December	Concrete Truck	17	350		0.38	0.07	0.45	0.39	0.01	0.01	202.09	-	-	-	-	-	-
2027	January	Concrete Truck	17	350	136	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	February	Concrete Truck	17	350	168	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	5
2027	March	Concrete Truck	17	350	48	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	1
2027	April	Concrete Truck	17	350	24	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	1
2027	May	Concrete Truck	17	350	328	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.02	0.02	0.00	0.00	9
2027	June	Concrete Truck	17	350		0.38	0.07	0.45	0.37	0.01	0.01	202.03	-	-	-	-	-	-
2027	July	Concrete Truck	17	350	16	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	0
2027	August	Concrete Truck	17	350	112	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	3
2027	September	Concrete Truck	17	350	160	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	4
2027	October	Concrete Truck	17	350	120	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	3
2027	November	Concrete Truck	17	350	40	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.00	0.00	0.00	0.00	1
2027	December	Concrete Truck	17	350	128	0.38	0.07	0.45	0.37	0.01	0.01	202.03	0.00	0.01	0.01	0.00	0.00	3
2028	January	Concrete Truck	17	350	40	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	1
2028	February	Concrete Truck	17	350	256	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.02	0.01	0.00	0.00	7
2028	March	Concrete Truck	17	350	296	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.02	0.01	0.00	0.00	8
2028	April	Concrete Truck	17	350		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-
2028	May	Concrete Truck	17	350	112	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	3
2028	June	Concrete Truck	17	350	96	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.00	0.00	0.00	3
2028	July	Concrete Truck	17	350		0.38	0.07	0.45	0.34	0.01	0.01	202.14	-	-	-	-	-	-
2028	August	Concrete Truck	17	350	122	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.01	0.01	0.00	0.00	3
2028	September	Concrete Truck	17	350	64	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	2
2028	October	Concrete Truck	17	350	66	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	2
2028	November	Concrete Truck	17	350	15	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	0
2028	December	Concrete Truck	17	350	39	0.38	0.07	0.45	0.34	0.01	0.01	202.14	0.00	0.00	0.00	0.00	0.00	1
2029	January	Concrete Truck	17	350	72	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	2
2029	February	Concrete Truck	17	350	735	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.01	0.05	0.03	0.00	0.00	20
2029	March	Concrete Truck	17	350	1774	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.02	0.11	0.08	0.00	0.00	48
2029	April	Concrete Truck	17	350	1232	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.01	0.08	0.06	0.00	0.00	33
2029	May	Concrete Truck	17	350	176	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	5
2029	June	Concrete Truck	17	350	8	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0
2029	July	Concrete Truck	17	350	128	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.01	0.01	0.00	0.00	3
2029	August	Concrete Truck	17	350	24	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1
2029	September	Concrete Truck	17	350	24	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1
2029	October	Concrete Truck	17	350	24	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1
2029	November	Concrete Truck	17	350	56	0.38	0.07	0.44	0.31	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	2
2029	December	Concrete Truck	17	350		0.38	0.07	0.44	0.31	0.01	0.01	202.22	-	-	-	-	-	-
2030	January	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-
2030	February	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-
2030	March	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-
2030	April	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-
2030	May	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-
2030	June	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-
2030	July	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-
2030	August	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-
2030	September	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-
2030	October	Concrete Truck	17	350		0.38	0.06	0.44	0.30	0.01	0.01	202.22	-	-	-	-	-	-

2035	January	Concrete Truck	17	350	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	February	Concrete Truck	17	350	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	March	Concrete Truck	17	350	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	April	Concrete Truck	17	350	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	May	Concrete Truck	17	350	96	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	254
2035	June	Concrete Truck	17	350	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	July	Concrete Truck	17	350	96	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	254
2035	August	Concrete Truck	17	350	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2035	September	Concrete Truck	17	350	96	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	254
2035	October	Concrete Truck	17	350	48	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	127
2035	November	Concrete Truck	17	350	56	0.38	0.06	0.44	0.22	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	2	148
2035	December	Concrete Truck	17	350	0	0.38	0.06	0.44	0.22	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	January	Concrete Truck	17	350	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	February	Concrete Truck	17	350	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	March	Concrete Truck	17	350	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	April	Concrete Truck	17	350	88	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	2	233
2036	May	Concrete Truck	17	350	0	0.38	0.06	0.43	0.21	0.01	0.01	202.22	-	-	-	-	-	-	-
2036	June	Concrete Truck	17	350	128	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	339
2036	July	Concrete Truck	17	350	16	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	42
2036	August	Concrete Truck	17	350	40.8	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	108
2036	September	Concrete Truck	17	350	8.8	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	23
2036	October	Concrete Truck	17	350	9.2	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	24
2036	November	Concrete Truck	17	350	241.2	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.02	0.01	0.00	0.00	6	639
2036	December	Concrete Truck	17	350	16	0.38	0.06	0.43	0.21	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	0	42
2037	January	Concrete Truck	17	350	120	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	318
2037	February	Concrete Truck	17	350	48	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	127
2037	March	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	April	Concrete Truck	17	350	40	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	106
2037	May	Concrete Truck	17	350	112	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	297
2037	June	Concrete Truck	17	350	112	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	3	297
2037	July	Concrete Truck	17	350	24	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	64
2037	August	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2037	September	Concrete Truck	17	350	32	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.00	0.00	0.00	0.00	1	85
2037	October	Concrete Truck	17	350	80	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	2	212
2037	November	Concrete Truck	17	350	80	0.38	0.06	0.43	0.19	0.01	0.01	202.22	0.00	0.01	0.00	0.00	0.00	2	212
2037	December	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	January	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	February	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	March	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	April	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	May	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	June	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	July	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	August	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-
2038	September	Concrete Truck	17	350	0	0.38	0.06	0.43	0.19	0.01	0.01	202.22	-	-	-	-	-	-	-

	2026	-	-	-	-	-	-	-
	2027	0.01	0.08	0.07	0.00	0.00	34.39	3,389
	2028	0.01	0.07	0.06	0.00	0.00	29.74	2,931
	2029	0.04	0.28	0.20	0.01	0.01	114.40	11,271
	2030	-	-	-	-	-	-	-
Phase 1		0.06	0.43	0.32	0.01	0.01	178.54	17,590
	2035	0.00	0.03	0.01	0.00	0.00	10.54	1,039
	2036	0.00	0.03	0.02	0.00	0.00	14.74	1,452
	2037	0.01	0.04	0.02	0.00	0.00	17.43	1,717
	2038	-	-	-	-	-	-	-
Phase 2		0.01	0.10	0.05	0.00	0.00	42.71	4,208
		ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel
Days		Emissions (tons)						
132	2026	-	-	-	-	-		
264	2027	0.10	0.64	0.52	0.02	0.02		
264	2028	0.08	0.55	0.42	0.01	0.01		
264	2029	0.31	2.08	1.48	0.05	0.05		
220	2030	-	-	-	-	-		
1144	Phase 1	0.11	0.76	0.56	0.02	0.02		
264	2035	0.03	0.19	0.10	0.00	0.00		
264	2036	0.04	0.26	0.13	0.00	0.00		
264	2037	0.04	0.31	0.14	0.01	0.00		
198	2038	-	-	-	-	-		
792	Phase 2	0.04	0.26	0.12	0.00	0.00		
		Average Daily Emissions (pounds)						

		Offroad Construction Equipment Emissions - Unmitigated																		
Year	Month	Equipment	ID	HP	Total Hours	Load Factor	Emission Factor (g/hp-hour)					Emissions (tons)					Annual Emissions (metric tons/year)			
							ROG	CO	NOX	PM10	PM2.5	CO2	ROG	CO	NOX	PM10	PM2.5	CO2	gals Diesel	
2026	July	Porta Can Truck	11	200		0.38	0.07	0.47	0.41	0.02	0.01	200.94	-	-	-	-	-	-		
2026	August	Porta Can Truck	11	200	96	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.00	0.00	0.00	0.00	1 144		
2026	September	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.01	0.01	0.00	0.00	3 253		
2026	October	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.01	0.01	0.00	0.00	3 265		
2026	November	Porta Can Truck	11	200	144	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.01	0.00	0.00	0.00	2 217		
2026	December	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.41	0.02	0.01	200.94	0.00	0.01	0.01	0.00	0.00	2 241		
2027	January	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.00	0.00	0.00	2 229		
2027	February	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.00	0.00	0.00	2 229		
2027	March	Porta Can Truck	11	200	184	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	3 277		
2027	April	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	3 265		
2027	May	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	2 241		
2027	June	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	3 265		
2027	July	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	3 253		
2027	August	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	3 265		
2027	September	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	3 253		
2027	October	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	3 253		
2027	November	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.00	0.00	0.00	2 229		
2027	December	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.39	0.01	0.01	200.95	0.00	0.01	0.01	0.00	0.00	3 253		
2028	January	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.00	0.00	0.00	2 229		
2028	February	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	2 241		
2028	March	Porta Can Truck	11	200	184	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	3 277		
2028	April	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	2 241		
2028	May	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	3 265		
2028	June	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	3 265		
2028	July	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.00	0.00	0.00	2 229		
2028	August	Porta Can Truck	11	200	184	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	3 277		
2028	September	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	2 241		
2028	October	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.01	0.00	0.00	3 265		
2028	November	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.00	0.00	0.00	2 229		
2028	December	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.38	0.01	0.01	200.94	0.00	0.01	0.00	0.00	0.00	2 229		
2029	January	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	2 241		
2029	February	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2 229		
2029	March	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3 265		
2029	April	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3 253		
2029	May	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3 265		
2029	June	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3 253		
2029	July	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	2 241		
2029	August	Porta Can Truck	11	200	184	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3 277		
2029	September	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2 229		
2029	October	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3 265		
2029	November	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3 253		
2029	December	Porta Can Truck	11	200	144	0.38	0.07	0.47	0.38	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2 217		
2030	January	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2 241		
2030	February	Porta Can Truck	11	200	152	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2 229		
2030	March	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3 253		
2030	April	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3 265		
2030	May	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3 265		
2030	June	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2 241		
2030	July	Porta Can Truck	11	200	168	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3 253		
2030	August	Porta Can Truck	11	200	176	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.01	0.00	0.00	3 265		
2030	September	Porta Can Truck	11	200	160	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2 241		
2030	October	Porta Can Truck	11	200	32	0.38	0.07	0.47	0.35	0.01	0.01	201.01	0.00	0.00	0.00	0.00	0.00	0 48		

2035	January	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	February	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	March	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	April	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	May	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	June	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	July	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	August	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	September	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	October	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	November	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2035	December	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.26	0.01	0.01	201.01	-	-	-	-	-	-	-
2036	January	Porta Can Truck	11	200	0	0.38	0.06	0.45	0.24	0.01	0.01	201.01	-	-	-	-	-	-	-
2036	February	Porta Can Truck	11	200	144	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2	217
2036	March	Porta Can Truck	11	200	168	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253
2036	April	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2036	May	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2036	June	Porta Can Truck	11	200	168	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253
2036	July	Porta Can Truck	11	200	184	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	277
2036	August	Porta Can Truck	11	200	168	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253
2036	September	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2036	October	Porta Can Truck	11	200	184	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	277
2036	November	Porta Can Truck	11	200	160	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2	241
2036	December	Porta Can Truck	11	200	184	0.38	0.06	0.45	0.24	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	277
2037	January	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2037	February	Porta Can Truck	11	200	160	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2	241
2037	March	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2037	April	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2037	May	Porta Can Truck	11	200	168	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253
2037	June	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2037	July	Porta Can Truck	11	200	184	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	277
2037	August	Porta Can Truck	11	200	168	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253
2037	September	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2037	October	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2037	November	Porta Can Truck	11	200	168	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253
2037	December	Porta Can Truck	11	200	184	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	277
2038	January	Porta Can Truck	11	200	168	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253
2038	February	Porta Can Truck	11	200	160	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	2	241
2038	March	Porta Can Truck	11	200	184	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	277
2038	April	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2038	May	Porta Can Truck	11	200	168	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	253
2038	June	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2038	July	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2038	August	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265
2038	September	Porta Can Truck	11	200	176	0.38	0.06	0.45	0.23	0.01	0.01	201.01	0.00	0.01	0.00	0.00	0.00	3	265

Phase 1	2026	0.00	0.03	0.03	0.00	0.00	11.36	1,119
	2027	0.01	0.08	0.07	0.00	0.00	30.55	3,009
	2028	0.01	0.08	0.06	0.00	0.00	30.30	2,985
	2029	0.01	0.08	0.06	0.00	0.00	30.31	2,986
	2030	0.01	0.06	0.04	0.00	0.00	23.34	2,300
	Phase 1	0.05	0.32	0.26	0.01	0.01	125.86	12,400
Phase 2	2035	-	-	-	-	-	-	-
	2036	0.01	0.07	0.04	0.00	0.00	28.84	2,842
	2037	0.01	0.08	0.04	0.00	0.00	31.90	3,143
	2038	0.01	0.06	0.03	0.00	0.00	23.83	2,348
	Phase 2	0.03	0.21	0.11	0.00	0.00	84.57	8,332
	ROG	CO	NOX	PM10	PM2.5	CO2 (metric tons)	gals Diesel	
Days	Emissions (tons)							
132	2026	0.07	0.44	0.38	0.01	0.01		
264	2027	0.09	0.60	0.50	0.02	0.02		
264	2028	0.09	0.59	0.47	0.02	0.02		
264	2029	0.09	0.59	0.47	0.02	0.02		
220	2030	0.08	0.55	0.40	0.02	0.01		
1144	Phase 1	0.08	0.57	0.45	0.02	0.02		
Phase 2	2035	-	-	-	-	-		
	2036	0.07	0.54	0.29	0.01	0.01		
	2037	0.08	0.60	0.30	0.01	0.01		
	2038	0.08	0.60	0.30	0.01	0.01		
	Phase 2	0.07	0.53	0.27	0.01	0.01		
Average Daily Emissions (pounds)								

0.25 Percentage Daily Disturbance Factor
 0.10 Fugitive Dust Control Efficiency Factor
 0.21 PM2.5 fugitive dust factor

1.2 tons per acre-month AP42 PM10 EF
 0.42 tons per acre-month MRI PM10 EF

3.40 acres Phase 1
 2.30 acres Phase 2

PM10	PM2.5	
2.14	0.45 tons/year	Umitigated Phase 1
0.21	0.04 tons/year	Mitigated Phase 1
PM10	PM2.5	
1.45	0.30 tons/year	Umitigated Phase 2
0.14	0.03 tons/year	Mitigated Phase 2

Phase 1	Area A	15,100 square feet
Phase 1	Area B	20,400 square feet
Phase 1	Area C	21,800 square feet
Phase 1	Area D	43,200 square feet
Phase 2	Area E	22,700 square feet
Phase 2	Area F	30,500 square feet
Phase 2	Area G	31,400 square feet

		pounds per day			
		Umitigated PM10	Umitigated PM2.5	Mitigated PM10	Mitigated PM2.5
Days					
132	2026	32.5	6.82	3.25	0.68
264	2027	16.2	3.41	1.62	0.34
264	2028	16.2	3.41	1.62	0.34
264	2029	16.2	3.41	1.62	0.34
220	2030	19.5	4.09	1.95	0.41
1,144	Phase 1	32.5	6.82	3.25	0.68
264	2035	11.0	2.31	1.10	0.23
264	2036	11.0	2.31	1.10	0.23
220	2037	13.2	2.77	1.32	0.28
198	2038	14.6	3.07	1.46	0.31
	Phase 2	14.6	3.07	1.46	0.31

	Proposed
	sf
Phase 1 Solids Storage Basin Demolition	5,000
Phase 1 Reclaim Basin and Pumping Plant Demolition	12,500
	0.40 Acres
	0.86 Unmitigated PM10
	0.13 Unmitigated PM2.5
	0.34 Mitigated PM10
	0.05 Mitigated PM2.5

Building	Existing sf	Proposed sf	
Maintenance	5,744	17,700	
Polymer & Electrical		2,800	
Chemical Storage		7,500	Concrete, no coating
Solids Dewatering		5,000	Concrete, no coating
Total		20,500	

21.4 pounds per day (CALEEMOD)

0.11 tons per year (CALEEMOD)

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> EBMUD Sobrante Central North Aqueduct Unmitigated															
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)	
Grubbing/Land Clearing	2.55	21.20	51.07	22.10	2.10	20.00	5.17	1.01	4.16	0.26	27,120.70	0.21	3.21	28,082.54	
Grading/Excavation	6.11	47.45	76.72	23.28	3.28	20.00	5.79	1.63	4.16	0.43	45,165.76	0.51	4.52	46,525.70	
Drainage/Utilities/Sub-Grade	5.89	44.24	58.25	22.62	2.62	20.00	5.49	1.33	4.16	0.35	36,880.35	0.50	3.27	37,866.30	
Paving	3.64	30.23	19.03	1.27	1.27	0.00	0.70	0.70	0.00	0.15	16,168.10	0.32	0.89	16,442.21	
Maximum (pounds/day)	15.65	121.92	154.00	47.17	7.17	40.00	11.98	3.66	8.32	0.93	98,214.20	1.33	8.68	100,834.21	
Total (tons/construction project)	0.50	3.84	5.52	1.84	0.25	1.59	0.45	0.12	0.33	0.03	3,376.44	0.04	0.32	3,472.41	
Notes: Project Start Year -> 2035															
Project Length (months) -> 9															
Total Project Area (acres) -> 17															
Maximum Area Disturbed/Day (acres) -> 1															
Water Truck Used? -> Yes															
Total Material Imported/Exported Volume (yd³/day)															
Daily VMT (miles/day)															
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck									
Grubbing/Land Clearing	0	0	6,000	0	4,160	80									
Grading/Excavation	0	0	8,400	0	8,000	80									
Drainage/Utilities/Sub-Grade	0	0	6,000	0	7,360	80									
Paving	0	0	720	720	6,080	80									
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.															
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.															
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.															
Total Emission Estimates by Phase for -> EBMUD Sobrante Central North Aqueduct Unmitigated															
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)	
Grubbing/Land Clearing	0.02	0.20	0.48	0.21	0.02	0.19	0.05	0.01	0.04	0.00	253.58	0.00	0.03	258.20	
Grading/Excavation	0.23	1.77	2.87	0.87	0.12	0.75	0.22	0.06	0.16	0.02	1,689.20	0.02	0.17	1,578.57	
Drainage/Utilities/Sub-Grade	0.19	1.45	1.91	0.74	0.09	0.65	0.18	0.04	0.14	0.01	1,206.91	0.02	0.11	1,124.17	
Paving	0.05	0.42	0.27	0.02	0.02	0.00	0.01	0.01	0.00	0.00	226.76	0.00	0.01	209.20	
Maximum (tons/phase)	0.23	1.77	2.87	0.87	0.12	0.75	0.22	0.06	0.16	0.02	1689.20	0.02	0.17	1,578.57	
Total (tons/construction project)	0.50	3.84	5.52	1.84	0.25	1.59	0.45	0.12	0.33	0.03	3376.44	0.04	0.32	3,150.15	
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.															
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.															
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.															
The CO2e emissions are reported as metric tons per phase.															

Data Entry Worksheet

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.85	0.85	8/1/2035	1/1/2035
Grading/Excavation	3.49	3.49	1/1/2035	1/2/2035
Drainage/Utilities/Sub-Grade	2.98	2.98	2/16/2035	5/11/2035
Paving	1.28	1.28	3/16/2035	8/10/2035
Totals (Months)		9		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
User Input						
Miles/round trip: Grubbing/Land Clearing	30.00		200	0		6000.00
Miles/round trip: Grading/Excavation	30.00		200	0		8400.00
Miles/round trip: Drainage/Utilities/Sub-Grade	30.00		200	0		6000.00
Miles/round trip: Paving	30.00		24	0		720.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.43	3.32	0.11	0.05	0.01	1,496.40	0.00	0.23	1,556.07
Grading/Excavation (grams/mile)	0.03	0.43	3.32	0.11	0.05	0.01	1,477.43	0.00	0.23	1,546.68
Drainage/Utilities/Sub-Grade (grams/mile)	0.03	0.43	3.31	0.11	0.05	0.01	1,468.71	0.00	0.23	1,537.54
Paving (grams/mile)	0.03	0.43	3.31	0.11	0.05	0.01	1,468.71	0.00	0.23	1,537.54
Grubbing/Land Clearing (grams/strip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/strip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade (grams/strip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/strip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.43	5.72	45.95	1.50	0.67	0.19	19,661.77	0.02	3.09	20,363.26
Tons per const. Period - Grubbing/Land Clearing	0.00	0.05	0.43	0.01	0.01	0.00	183.84	0.00	0.03	192.45
Pounds per day - Grading/Excavation	0.60	8.60	64.25	2.11	0.94	0.26	27,360.39	0.03	4.30	28,642.69
Tons per const. Period - Grading/Excavation	0.02	0.30	2.40	0.08	0.04	0.01	1,023.28	0.00	0.16	1,071.24
Pounds per day - Drainage/Utilities/Sub-Grade	0.43	5.71	45.84	1.50	0.67	0.18	19,427.70	0.02	3.05	20,338.22
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.01	0.19	1.50	0.05	0.02	0.01	635.77	0.00	0.10	665.57
Pounds per day - Paving	0.05	0.69	5.50	0.18	0.08	0.02	2,331.32	0.00	0.37	2,440.59
Tons per const. Period - Paving	0.00	0.01	0.08	0.00	0.00	0.00	32.70	0.00	0.01	34.23
Total tons per construction project	0.04	0.55	4.41	0.14	0.06	0.02	1,875.58	0.00	0.29	1,963.49

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions		User Override of Miles/Round Trip		Program Estimate of Miles/Round Trip		User Override of Truck Round Trips/Day		Default Values Round Trips/Day		Calculated Daily VMT	
User Input											
Miles/round trip: Grubbing/Land Clearing								0		0.00	
Miles/round trip: Grading/Excavation								0		0.00	
Miles/round trip: Drainage/Utilities/Sub-Grade								0		0.00	
Miles/round trip: Paving	30.00					24		0		720.00	

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.43	3.32	0.11	0.05	0.01	1,496.40	0.00	0.23	1,556.07
Grading/Excavation (grams/mile)	0.03	0.43	3.32	0.11	0.05	0.01	1,477.43	0.00	0.23	1,546.68
Drainage/Utilities/Sub-Grade (grams/mile)	0.03	0.43	3.31	0.11	0.05	0.01	1,468.71	0.00	0.23	1,537.54
Paving (grams/mile)	0.03	0.43	3.31	0.11	0.05	0.01	1,468.71	0.00	0.23	1,537.54
Grubbing/Land Clearing (grams/strip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/strip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade (grams/strip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/strip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.05	0.69	5.50	0.18	0.08	0.02	2,331.32	0.00	0.37	2,440.59
Tons per const. Period - Paving	0.00	0.01	0.08	0.00	0.00	0.00	32.70	0.00	0.01	34.23
Total tons per construction project	0.00	0.01	0.08	0.00	0.00	0.00	32.70	0.00	0.01	34.23

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions											
User Input	User Override of Worker Commute Default Values				Default Values						
	Miles/one-way trip	4			Calculated Daily Trips	Calculated Daily VMT					
No. of employees: Grubbing/Land Clearing	52				208	4,160.00					
No. of employees: Grading/Excavation	100				400	8,000.00					
No. of employees: Drainage/Utilities/Sub-Grade	92				368	7,360.00					
No. of employees: Paving	76				304	6,080.00					
Emission Rates											
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Grubbing/Land Clearing (grams/mile)	0.00	0.49	0.02	0.05	0.02	0.00	230.02	0.00	0.00	231.06	
Grading/Excavation (grams/mile)	0.00	0.49	0.02	0.05	0.02	0.00	228.43	0.00	0.00	229.46	
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.48	0.02	0.05	0.02	0.00	226.88	0.00	0.00	227.90	
Paving (grams/mile)	0.00	0.48	0.02	0.05	0.02	0.00	226.88	0.00	0.00	227.90	
Emissions											
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Grubbing/Land Clearing (grams/day)	0.51	1.94	0.14	0.00	0.00	0.00	48.69	0.03	0.02	55.58	
Grading/Excavation (grams/day)	1.50	0.49	0.14	0.00	0.00	0.00	48.29	0.03	0.02	55.10	
Drainage/Utilities/Sub-Grade (grams/day)	0.48	1.91	0.14	0.00	0.00	0.00	47.87	0.03	0.02	54.63	
Paving (grams/day)	0.48	1.91	0.14	0.00	0.00	0.00	47.87	0.03	0.02	54.63	
Emissions											
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Pounds per day - Grubbing/Land Clearing	0.27	5.41	0.28	0.42	0.17	0.02	2,131.90	0.03	0.04	2,144.55	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.05	0.00	0.00	0.00	0.00	19.93	0.00	0.00	20.05	
Pounds per day - Grading/Excavation	0.50	10.28	0.52	0.80	0.33	0.04	4,071.36	0.05	0.08	4,095.52	
Tons per const. Period - Grading/Excavation	0.02	0.38	0.02	0.03	0.01	0.00	152.27	0.00	0.00	153.17	
Pounds per day - Drainage/Utilities/Sub-Grade	0.45	9.36	0.47	0.74	0.30	0.04	3,720.18	0.04	0.07	3,742.20	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.01	0.31	0.02	0.02	0.01	0.00	122.74	0.00	0.00	122.46	
Pounds per day - Paving	0.37	7.73	0.39	0.61	0.25	0.03	3,073.19	0.04	0.06	3,091.38	
Tons per const. Period - Paving	0.01	0.11	0.01	0.01	0.00	0.00	43.10	0.00	0.00	43.36	
Total tons per construction project	0.04	0.85	0.04	0.07	0.03	0.00	337.05	0.00	0.01	339.04	

Note: Water Truck default values can be overridden in cells D156, I153 through I156, and F153 through F156.

Water Truck Emissions										
User Input	User Override of Default # Water Trucks		Program Estimate of Number of Water Trucks		User Override of Round Trips/Vehicle/Day		Default Values Round Trips/Vehicle/Day		Calculated Miles/Round Trip	
	2				5.00				8.00	80.00
Grubbing/Land Clearing - Exhaust	2				5.00				8.00	80.00
Grading/Excavation - Exhaust	2				5.00				8.00	80.00
Drainage/Utilities/Subgrade	2				5.00				8.00	80.00
Paving	2				5.00				8.00	80.00
Emission Rates										
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.43	3.32	0.11	0.05	0.01	1,486.40	0.00	0.23	1,556.07
Grading/Excavation (grams/mile)	0.03	0.43	3.32	0.11	0.05	0.01	1,477.43	0.00	0.23	1,546.68
Drainage/Utilities/Sub-Grade (grams/mile)	0.03	0.43	3.31	0.11	0.05	0.01	1,468.71	0.00	0.23	1,537.54
Paving (grams/mile)	0.03	0.43	3.31	0.11	0.05	0.01	1,468.71	0.00	0.23	1,537.54
Emissions										
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.01	0.08	0.69	0.02	0.01	0.00	262.16	0.00	0.04	274.44
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	2.45	0.00	0.00	2.57
Pounds per day - Grading/Excavation	0.01	0.08	0.69	0.02	0.01	0.00	260.58	0.00	0.04	272.79
Tons per const. Period - Grading/Excavation	0.00	0.00	0.01	0.00	0.00	0.00	9.75	0.00	0.00	10.20
Pounds per day - Drainage/Utilities/Sub-Grade	0.01	0.08	0.68	0.02	0.01	0.00	259.04	0.00	0.04	271.18
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.02	0.00	0.00	0.00	8.48	0.00	0.00	8.67
Pounds per day - Paving	0.01	0.08	0.68	0.02	0.01	0.00	259.04	0.00	0.04	271.18
Tons per const. Period - Paving	0.00	0.00	0.01	0.00	0.00	0.00	1.63	0.00	0.00	3.80
Total tons per construction project	0.00	0.01	0.06	0.00	0.00	0.00	24.31	0.00	0.00	25.45

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acetage Dislurbed/Day		Default Maximum Acetage/Day		PM10 pounds/day		PM10 tons/per period		PM2.5 pounds/day		PM2.5 tons/per period	
	2.00				20.00		0.19		4.16		0.04	
Fugitive Dust - Grubbing/Land Clearing	2.00				20.00		0.75		4.16		0.16	
Fugitive Dust - Grading/Excavation	2.00				20.00		0.65		4.16		0.14	
Fugitive Dust - Drainage/Utilities/Subgrade	2.00				20.00							

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)												
	Override of Default Number of Vehicles	Program-estimate	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00		Model Default Tier	Crawler Tractors	0.74	3.80	2.23	0.08	0.08	0.02	1,827.41	0.06	0.01	1,833.11	
		Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00		Model Default Tier	Excavators	1.11	6.20	1.92	0.07	0.07	0.03	3,237.46	0.10	0.02	3,247.13	
		Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Other General Industrial Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Other Material Handling Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment														
If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab														
Number of Vehicles		Equipment Tier	Type		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing		pounds per day		1.85	10.00	4.15	0.16	0.16	0.05	5,064.87	0.16	0.04	5,080.25
	Grubbing/Land Clearing		tons per phase		0.02	0.09	0.04	0.00	0.00	0.00	47.36	0.00	0.00	47.50

Data Entry Worksheet

Drainage/Utilities/Subgrade	Default	Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default equipment tier (applicable only when "Tier 4 Mitigation" Option Selected)												
	Override of Default Number of Vehicles	Program-estimate	Equipment Tier		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Cement and Mortar Mixers	0.16	0.82	0.98	0.04	0.04	0.00	134.71	0.01	0.00	135.40
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Cranes	2.40	2.92	0.03	0.03	0.01	1,133.61	0.04	0.01	0.00	1,137.05
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	1.11	6.20	1.92	0.07	0.07	0.03	3,237.46	0.10	0.02	3,247.13
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tier	Off-Highway Trucks	2.51	13.33	4.20	0.16	0.16	0.06	6,856.79	0.22	0.05	6,876.58
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surface Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.53	3.35	0.99	0.04	0.04	0.02	1,705.93	0.05	0.01	1,710.95
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Welders	0.29	3.11	2.25	0.02	0.02	0.01	406.94	0.03	0.00	407.59
User-Defined Off-road Equipment														
If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab														
Number of Vehicles		Equipment Tier		Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
0.00		N/A			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0						

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default	Equipment Tier										
	Override of Default Number of Vehicles	Program-estimate	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Borer/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00			Model Default Tier	Off-Highway Trucks	2.51	13.33	4.20	0.16	0.16	0.06	6,856.79	0.22	0.05	6,876.58
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Pavers	0.51	6.98	1.87	0.09	0.09	0.01	1,195.55	0.05	0.01	1,199.39
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tier	Rollers	0.14	0.74	0.89	0.03	0.03	0.00	121.88	0.01	0.00	122.50
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment														
	Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	0.00		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		pounds per day	3.16	21.06	6.96	0.28	0.28	0.07	8,173.23	0.28	0.06	8,198.48
		Paving		tons per phase	0.04	0.30	0.10	0.00	0.00	0.00	114.63	0.00	0.00	114.98
Total Emissions all Phases (tons per construction period) ==>					0.41	2.43	0.93	0.03	0.03	0.01	1,106.81	0.04	0.01	1,110.20

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers	12.00	9		8
Concrete/Industrial Saws		81		8
Cranes	195.00	231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators	425.00	158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks	300.00	402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers	142.00	130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers	8.00	80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		85		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes	230.00	97		8
Trenchers		78		8
Welders	45.00	46		8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 9.0.0

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model		Version 9.0.0																																								
Data Entry Worksheet Note: Required data input sections have a yellow background. Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background. The user is required to enter information in cells D10 through D24, E29 through G35, and D38 through D41 for all project types. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.																																										
Input Type Project Name Construction Start Year Project Type Project Construction Time Working Days per Month Predominant Soil/Type: Enter 1, 2, or 3 Project Length Total Project Area Maximum Area Disturbed/Day Water Trucks Used? <table border="1"> <tr><td>EBMUD Soiranle Central North Aqueduct Mitigated</td></tr> <tr><td>2035</td></tr> <tr><td>4</td></tr> <tr><td>8.50</td></tr> <tr><td>22.00</td></tr> <tr><td>1</td></tr> <tr><td>3.95</td></tr> <tr><td>16.78</td></tr> <tr><td>1.00</td></tr> <tr><td>1</td></tr> </table> Enter a Year between 2014 and 2040 (inclusive) 1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction months days (assume 22 if unknown) 1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murietta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murietta) miles acres acre 1. Yes 2. No 				EBMUD Soiranle Central North Aqueduct Mitigated	2035	4	8.50	22.00	1	3.95	16.78	1.00	1																													
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Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County. http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/geologicmaps.aspx#regionalseries																																										
Material Hauling Quantity Input <table border="1" style="width: 100%;"> <thead> <tr> <th>Material Type</th> <th>Phase</th> <th>Haul Truck Capacity (yd³) (assume 20 if unknown)</th> <th>Import Volume (yd³/day)</th> <th>Export Volume (yd³/day)</th> </tr> </thead> <tbody> <tr><td rowspan="4">Soil</td><td>Grubbing/Land Clearing</td><td></td><td></td><td></td></tr> <tr><td>Grading/Excavation</td><td></td><td></td><td></td></tr> <tr><td>Drainage/Utilities/Sub-Grade</td><td></td><td></td><td></td></tr> <tr><td>Paving</td><td></td><td></td><td></td></tr> <tr><td rowspan="4">Asphalt</td><td>Grubbing/Land Clearing</td><td></td><td></td><td></td></tr> <tr><td>Grading/Excavation</td><td></td><td></td><td></td></tr> <tr><td>Drainage/Utilities/Sub-Grade</td><td></td><td></td><td></td></tr> <tr><td>Paving</td><td></td><td></td><td></td></tr> </tbody> </table>				Material Type	Phase	Haul Truck Capacity (yd ³) (assume 20 if unknown)	Import Volume (yd ³ /day)	Export Volume (yd ³ /day)	Soil	Grubbing/Land Clearing				Grading/Excavation				Drainage/Utilities/Sub-Grade				Paving				Asphalt	Grubbing/Land Clearing				Grading/Excavation				Drainage/Utilities/Sub-Grade				Paving			
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Mitigation Options <table border="1" style="width: 100%;"> <tbody> <tr> <td>On-road Fleet Emissions Mitigation</td> <td>2010 and Newer On-road Vehicles Fleet</td> <td rowspan="3"> Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer. Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard. </td> </tr> <tr> <td>Off-road Equipment Emissions Mitigation</td> <td>Tier 4 Equipment</td> </tr> <tr> <td>Will all off-road equipment be tier 4?</td> <td>All Tier 4 Equipment</td> </tr> </tbody> </table>				On-road Fleet Emissions Mitigation	2010 and Newer On-road Vehicles Fleet	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer. Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard.	Off-road Equipment Emissions Mitigation	Tier 4 Equipment	Will all off-road equipment be tier 4?	All Tier 4 Equipment																																
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The remaining sections of this sheet contain areas that require modification when "Other Project Type" is selected.																																										

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of	Program	User Override of	Program
	Construction Months	Calculated Months	Phase Starting Date	Default Phase Starting Date
Grubbing/Land Clearing	0.85	0.85	8/1/2035	1/1/2035
Grading/Excavation	3.49	3.49	1/1/2035	1/2/2035
Drainage/Utilities/Sub-Grade	2.98	2.98	2/16/2035	5/11/2035
Paving	1.28	1.28	3/16/2035	8/10/2035
Totals (Months)		9		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		Program Estimate of		User Override of Truck		Default Values		Calculated	
User Input	Miles/Round Trip	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Round Trips/Day	Round Trips/Day	Daily VMT	
Miles/round trip: Grubbing/Land Clearing	30.00			200	0	0	6000.00		
Miles/round trip: Grading/Excavation	30.00			280	0	0	8400.00		
Miles/round trip: Drainage/Utilities/Sub-Grade	30.00			24	0	0	6000.00		
Miles/round trip: Paving	30.00			24	0	0	720.00		

2010+ Model Year Mitigation Option Emission Rates										
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.43	3.26	0.11	0.05	0.01	1,494.35	0.00	0.23	1,553.92
Grading/Excavation (grams/mile)	0.03	0.43	3.26	0.11	0.05	0.01	1,475.53	0.00	0.23	1,544.68
Drainage/Utilities/Sub-Grade (grams/mile)	0.03	0.43	3.27	0.11	0.05	0.01	1,466.95	0.00	0.23	1,535.70
Paving (grams/mile)	0.03	0.43	3.27	0.11	0.05	0.01	1,466.95	0.00	0.23	1,535.70
Grubbing/Land Clearing (grams/round trip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/round trip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade (grams/round trip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/round trip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions										
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.41	5.69	45.17	1.50	0.67	0.19	19,634.62	0.02	3.09	20,554.81
Tons per const. Period - Grubbing/Land Clearing	0.00	0.05	0.42	0.01	0.01	0.00	183.58	0.00	0.03	192.19
Pounds per day - Grading/Excavation	0.57	7.96	63.25	2.10	0.93	0.26	27,325.17	0.03	4.30	28,605.78
Tons per const. Period - Grading/Excavation	0.02	0.30	2.37	0.08	0.03	0.01	1,025.96	0.00	0.16	1,069.86
Pounds per day - Drainage/Utilities/Sub-Grade	0.41	5.69	45.19	1.50	0.67	0.18	19,404.49	0.02	3.05	20,313.90
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.01	0.19	1.48	0.05	0.02	0.01	635.01	0.00	0.10	664.77
Pounds per day - Paving	0.05	0.68	5.42	0.18	0.08	0.02	2,328.54	0.00	0.37	2,437.67
Tons per const. Period - Paving	0.00	0.01	0.08	0.00	0.00	0.00	32.66	0.00	0.01	34.19
Total tons per construction project	0.04	0.55	4.34	0.14	0.06	0.02	1,873.21	0.00	0.29	1,961.00

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
User Input	Miles/round trip: Grubbing/Land Clearing				0	0.00
	Miles/round trip: Grading/Excavation				0	0.00
	Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
	Miles/round trip: Paving	30.00		24	0	720.00

2010+ Model Year Mitigation Option Emission Rates										
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.43	3.26	0.11	0.05	0.01	1,484.35	0.00	0.23	1,553.92
Grading/Excavation (grams/mile)	0.03	0.43	3.26	0.11	0.05	0.01	1,475.53	0.00	0.23	1,544.68
Drainage/Utilities/Sub-Grade (grams/mile)	0.03	0.43	3.27	0.11	0.05	0.01	1,466.95	0.00	0.23	1,535.70
Paving (grams/mile)	0.03	0.43	3.27	0.11	0.05	0.01	1,466.95	0.00	0.23	1,535.70
Grubbing/Land Clearing (grams/round trip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/round trip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade (grams/round trip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/round trip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions										
	CO	NOx	PM10	PM2.5	SOx	CH4	CO2	N2O	CO2e	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.05	0.68	5.42	0.18	0.08	0.02	2,328.54	0.00	0.37	2,437.67
Tons per const. Period - Paving	0.01	0.08	0.08	0.00	0.00	0.00	32.66	0.00	0.01	34.19
Total tons per construction project	0.01	0.08	0.08	0.00	0.00	0.00	32.66	0.00	0.01	34.19

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values							
User Input											
Miles/one-way trip	32				Calculated		Calculated				
One-way trips/day	4				Daily Trips		Daily VMT				
No. of employees: Grubbing/Land Clearing	52				208		4,160.00				
No. of employees: Grading/Excavation	100				400		8,000.00				
No. of employees: Drainage/Utilities/Sub-Grade	92				368		7,360.00				
No. of employees: Paving	76				304		6,080.00				
Emission Rates											
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Grubbing/Land Clearing (grams/mile)	0.00	0.49	0.02	0.05	0.02	0.00	230.02	0.00	0.00	231.06	
Grading/Excavation (grams/mile)	0.00	0.49	0.02	0.05	0.02	0.00	228.43	0.00	0.00	229.46	
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.48	0.02	0.05	0.02	0.00	226.88	0.00	0.00	227.90	
Paving (grams/mile)	0.00	0.48	0.02	0.05	0.02	0.00	225.88	0.00	0.00	227.90	
Grubbing/Land Clearing (grams/trip)	0.51	1.94	0.14	0.00	0.00	0.00	48.69	0.03	0.02	55.58	
Grading/Excavation (grams/trip)	0.49	1.93	0.14	0.00	0.00	0.00	48.28	0.03	0.02	55.10	
Drainage/Utilities/Sub-Grade (grams/trip)	0.48	1.91	0.14	0.00	0.00	0.00	47.87	0.03	0.02	54.63	
Paving (grams/trip)	0.48	1.91	0.14	0.00	0.00	0.00	47.87	0.03	0.02	54.63	
Emissions											
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Pounds per day - Grubbing/Land Clearing	0.27	5.41	0.28	0.42	0.17	0.00	2,151.90	0.03	0.04	2,144.55	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.05	0.00	0.00	0.00	0.00	19.93	0.00	0.00	20.05	
Pounds per day - Grading/Excavation	0.50	10.28	0.52	0.80	0.33	0.04	4,072.36	0.05	0.08	4,095.52	
Tons per const. Period - Grading/Excavation	0.02	0.38	0.02	0.03	0.01	0.00	152.27	0.00	0.00	153.17	
Pounds per day - Drainage/Utilities/Sub-Grade	0.45	9.36	0.47	0.74	0.30	0.04	3,720.18	0.04	0.07	3,742.20	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.01	0.31	0.02	0.02	0.01	0.00	121.74	0.00	0.00	122.46	
Pounds per day - Paving	0.37	7.73	0.39	0.61	0.25	0.03	3,073.19	0.04	0.06	3,091.38	
Tons per const. Period - Paving	0.01	0.11	0.01	0.01	0.00	0.00	43.10	0.00	0.00	43.36	
Total tons per construction project	0.04	0.89	0.04	0.07	0.03	0.00	337.05	0.00	0.01	339.04	

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions										
User Input	User Override of Default # Water Trucks		Program Estimate of Number of Water Trucks		User Override of Round Trips/Vehicle/Day		Default Values Round Trips/Vehicle/Day		Calculated Trips/day	
Grubbing/Land Clearing - Exhaust	2			5.00				8.00		80.00
Grading/Excavation - Exhaust	2			5.00				8.00		80.00
Drainage/Utilities/Subgrade	2			5.00				8.00		80.00
Paving	2			5.00				8.00		80.00
2010+ Model Year Mitigation Option Emission Rates										
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.43	3.26	0.11	0.05	0.01	1,484.35	0.00	0.23	1,553.92
Grading/Excavation (grams/mile)	0.03	0.43	3.26	0.11	0.05	0.01	1,475.53	0.00	0.23	1,544.68
Drainage/Utilities/Sub-Grade (grams/mile)	0.03	0.43	3.27	0.11	0.05	0.01	1,466.95	0.00	0.23	1,535.70
Paving (grams/mile)	0.03	0.43	3.27	0.11	0.05	0.01	1,466.95	0.00	0.23	1,535.70
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions										
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.01	0.08	0.68	0.02	0.01	0.00	261.79	0.00	0.04	274.06
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	2.45	0.00	0.00	2.59
Pounds per day - Grading/Excavation	0.01	0.08	0.68	0.02	0.01	0.00	260.24	0.00	0.04	272.44
Tons per const. Period - Grading/Excavation	0.00	0.00	0.01	0.00	0.00	0.00	9.73	0.00	0.00	10.19
Pounds per day - Drainage/Utilities/Sub-Grade	0.01	0.08	0.68	0.02	0.01	0.00	258.73	0.00	0.04	270.85
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.02	0.00	0.00	0.00	8.47	0.00	0.00	8.86
Pounds per day - Paving	0.01	0.08	0.68	0.02	0.01	0.00	258.73	0.00	0.04	270.85
Tons per const. Period - Paving	0.00	0.00	0.01	0.00	0.00	0.00	3.63	0.00	0.00	3.80
Total tons per construction project	0.00	0.01	0.06	0.00	0.00	0.00	24.28	0.00	0.00	25.41

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust						
User Input	User Override of Max Acreage Disturbed/Day		Default Maximum Acreage/Day			
					PM10 pounds/day	PM2.5 tons/per person
Fugitive Dust - Grubbing/Land Clearing	2.00				20.00	0.19
Fugitive Dust - Grading/Excavation	2.00				20.00	0.75
Fugitive Dust - Drainage/Utilities/Subgrade	2.00				20.00	4.16

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
	Override of Default Number of Vehicles	Program-estimate	Selected	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2.00		Tier 4	Crawler Tractors	0.48	8.36	0.96	0.05	0.04	0.02	1,827.41	0.06	0.01	1,833.11
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2.00		Tier 4	Excavators	0.85	14.81	1.71	0.09	0.08	0.03	3,237.46	0.10	0.02	3,247.13
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment														
Number of Vehicles		If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab												
0.00			Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
			N/A		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation	Default		Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type											
	Override of Default Number of Vehicles	Program-estimate				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Tier 4	Cement and Mortar Mixers	0.07	1.16	1.26	0.07	0.00	0.00	0.00	134.71	0.01	0.00	135.40
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Tier 4	Cranes	0.30	5.19	0.60	0.03	0.03	0.01	1,133.61	0.04	0.01	0.00	1,137.05
			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Tier 4	Excavators	0.85	14.86	1.71	0.09	0.08	0.03	3,237.46	0.10	0.02	0.00	3,247.13
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00			Tier 4	Off-Highway Trucks	1.81	31.37	3.62	0.18	0.17	0.06	6,856.79	0.22	0.05	0.00	6,876.58
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surface Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Tier 4	Tractors/Loaders/Backhoes	0.45	7.80	0.90	0.04	0.02	0.00	1,705.93	0.05	0.01	0.00	1,710.95
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Tier 4	Welders	0.13	2.93	2.38	0.01	0.01	0.01	406.94	0.03	0.00	0.00	407.59
User-Defined Off-road Equipment															
	Number of Vehicles	If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	0.00	N/A	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00	N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grading/Excavation		pounds per day		3.61	63.26	10.46	0.43	0.39	0.13	13,473.43	0.44	0.10	13,514.71
		Grading/Excavation		tons per phase		0.14	2.37	0.39	0.02	0.01	0.00	503.91	0.02	0.00	505.45

Drainage/Utilities/Subgrade	Default		Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e		
	Number of Vehicles		Override of														
	Default		Default														
	Default		Default														
Override of Default Number of Vehicles		Program-estimate		Override of Default Number of Vehicles		Equipment Tier		pounds/day		pounds/day		pounds/day		pounds/day		pounds/day	
2.00																	
2.00																	
2.00																	
5.00																	

Paving	Default		Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Override of												
		Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)												
Override of Default Number of Vehicles		Program-estimate		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
				Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00				Tier 4	Off-Highway Trucks	1.81	31.37	3.62	0.18	0.17	0.06	6,856.79	0.22	0.05	6,876.58
				Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Other General Industrial Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Other Material Handling Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00				Tier 4	Pavers	0.32	7.78	0.63	0.03	0.03	0.01	1,195.55	0.05	0.01	1,199.39
				Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00				Tier 4	Rollers	0.06	1.29	1.14	0.06	0.06	0.00	121.88	0.01	0.00	122.50
				Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment															
If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab															
Number of Vehicles		Equipment Tier		Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving				pounds per day	2.19	40.44	5.39	0.28	0.25	0.07	8,173.23	0.28	0.06	8,198.48	0.00
Paving				tons per phase	0.03	0.57	0.08	0.00	0.00	0.00	114.63	0.00	0.00	114.98	0.00
Total Emissions all Phases (tons per construction period) =>					0.30	5.22	0.83	0.04	0.03	0.01	1,106.81	0.04	0.01	1,110.20	0.00

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers	12.00	9		8
Concrete/Industrial Saws		81		8
Cranes	195.00	231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators	425.00	158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks	300.00	402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers	142.00	130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers	8.00	80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		85		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes	230.00	97		8
Trenchers		78		8
Welders	45.00	46		8

END OF DATA ENTRY SHEET

Road Construction Emissions Model		Version 9.0.0			
Data Entry Worksheet Note: Required data input sections have a yellow background. Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background. The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.					
Input Type Project Name Construction Start Year Project Type For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data Project Construction Time Working Days per Month Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County"; follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22) Project Length Total Project Area Maximum Area Disturbed/Day Water Trucks Used? EBMUD Sobrante Central North Aqueduct Trenchless Unmitigated 2035 4 3.00 22.00 1 0.10 0.48 0.48 1 Enter a Year between 2014 and 2040 (inclusive) 1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction months days (assume 22 if unknown) 1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta) miles acres acres 1. Yes 2. No					
Material Hauling Quantity Input					
	Phase	Haul Truck Capacity (yd³) (assume 20 if unknown)	Import Volume (yd³/day)	Export Volume (yd³/day)	
	Grubbing/Land Clearing				
	Grading/Excavation				
	Drainage/Utilities/Sub-Grade Paving				
	Grubbing/Land Clearing				
	Grading/Excavation				
	Drainage/Utilities/Sub-Grade				
	Paving				
Mitigation Options On-road Fleet Emissions Mitigation Off-road Equipment Emissions Mitigation No Mitigation No Mitigation Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard					
The remaining sections of this sheet contain areas that require modification when "Other Project Type" is selected.					

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		0.30		1/1/2035
Grading/Excavation		1.20		1/11/2035
Drainage/Utilities/Sub-Grade		1.05		2/17/2035
Paving		0.45		3/21/2035
Totals (Months)	3			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT				
User Input										
Miles/round trip: Grubbing/Land Clearing		30.00		14	0	420.00				
Miles/round trip: Grading/Excavation		30.00		14	0	420.00				
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		7	0	210.00				
Miles/round trip: Paving		30.00		7	0	210.00				
Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.43	3.32	0.11	0.05	0.01	1,486.40	0.00	0.23	1,556.07
Grading/Excavation (grams/mile)	0.03	0.43	3.32	0.11	0.05	0.01	1,486.40	0.00	0.23	1,556.07
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.43	3.32	0.11	0.05	0.01	1,486.40	0.00	0.23	1,556.07
Paving (grams/mile)	0.03	0.43	3.32	0.11	0.05	0.01	1,486.40	0.00	0.23	1,556.07
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	COG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.03	0.40	3.22	0.11	0.05	0.01	1,376.32	0.00	0.22	1,440.83
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	4.54	0.00	0.00	4.75
Pounds per day - Grading/Excavation	0.03	0.40	3.22	0.11	0.05	0.01	1,376.32	0.00	0.22	1,440.83
Tons per const. Period - Grading/Excavation	0.00	0.01	0.04	0.00	0.00	0.00	18.17	0.00	0.00	19.02
Pounds per day - Drainage/Utilities/Sub-Grade	0.02	0.20	1.61	0.05	0.02	0.01	688.16	0.00	0.11	720.41
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.02	0.00	0.00	0.00	7.95	0.00	0.00	8.32
Pounds per day - Paving	0.02	0.20	1.61	0.05	0.02	0.01	688.16	0.00	0.11	720.41
Tons per const. Period - Paving	0.00	0.00	0.01	0.00	0.00	0.00	3.41	0.00	0.00	3.57
Total tons per construction project	0.00	0.01	0.08	0.00	0.00	0.00	34.06	0.00	0.01	35.66

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT				
User Input										
Miles/round trip: Grubbing/Land Clearing				0	0.00					
Miles/round trip: Grading/Excavation				0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.43	3.32	0.11	0.05	0.01	1,486.40	0.00	0.23	1,556.07
Grading/Excavation (grams/mile)	0.03	0.43	3.32	0.11	0.05	0.01	1,486.40	0.00	0.23	1,556.07
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.43	3.32	0.11	0.05	0.01	1,486.40	0.00	0.23	1,556.07
Paving (grams/mile)	0.03	0.43	3.32	0.11	0.05	0.01	1,486.40	0.00	0.23	1,556.07
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions											
User Input		User Override of Worker Commute Default Values		Default Values		Calculated Daily Trips		Calculated Daily VMT			
Miles/ one-way trip		30									
One-way trips/day		4									
No. of employees: Grubbing/Land Clearing		8				32		960.00			
No. of employees: Grading/Excavation		8				32		960.00			
No. of employees: Drainage/Utilities/Sub-Grade		14				56		1,680.00			
No. of employees: Paving		14				56		1,680.00			
Emission Rates		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)		0.00	0.49	0.02	0.05	0.02	0.00	230.02	0.00	0.00	231.06
Grading/Excavation (grams/mile)		0.00	0.49	0.02	0.05	0.02	0.00	230.02	0.00	0.00	231.06
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.49	0.02	0.05	0.02	0.00	230.02	0.00	0.00	231.06
Paving (grams/mile)		0.00	0.49	0.02	0.05	0.02	0.00	230.02	0.00	0.00	231.06
Grubbing/Land Clearing (grams/trip)		0.51	1.94	0.14	0.00	0.00	0.00	48.69	0.03	0.02	55.58
Grading/Excavation (grams/trip)		0.51	1.94	0.14	0.00	0.00	0.00	48.69	0.03	0.02	55.58
Draining/Utilities/Sub-Grade (grams/trip)		0.51	1.94	0.14	0.00	0.00	0.00	48.69	0.03	0.02	55.58
Paving (grams/trip)		0.51	1.94	0.14	0.00	0.00	0.00	48.69	0.03	0.02	55.58
Emissions		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing		0.04	1.18	0.06	0.10	0.04	0.00	490.26	0.00	0.01	492.95
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	1.62	0.00	0.00	1.63
Pounds per day - Grading/Excavation		0.04	1.18	0.06	0.10	0.04	0.00	490.26	0.00	0.01	492.95
Tons per const. Period - Grading/Excavation		0.00	0.02	0.00	0.00	0.00	0.00	6.47	0.00	0.00	6.51
Pounds per day - Drainage/Utilities/Sub-Grade		0.08	2.06	0.10	0.17	0.07	0.01	857.96	0.01	0.02	862.65
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.02	0.00	0.00	0.00	0.00	9.91	0.00	0.00	9.96
Pounds per day - Paving		0.08	2.06	0.10	0.17	0.07	0.01	857.96	0.01	0.02	862.65
Tons per const. Period - Paving		0.00	0.01	0.00	0.00	0.00	0.00	4.25	0.00	0.00	4.27
Total tons per construction project		0.00	0.05	0.00	0.00	0.00	0.00	22.25	0.00	0.00	22.37

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions											
User Input		User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT		
Grubbing/Land Clearing - Exhaust		1		1.00			8.00		8.00		
Grading/Excavation - Exhaust		1		1.00			8.00		8.00		
Drainage/Utilities/Subgrade		1		1.00			8.00		8.00		
Paving		1		1.00			8.00		8.00		
Emission Rates		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)		0.03	0.43	3.32	0.11	0.05	0.01	1,486.40	0.00	0.23	1,556.07
Grading/Excavation (grams/mile)		0.03	0.43	3.32	0.11	0.05	0.01	1,486.40	0.00	0.23	1,556.07
Draining/Utilities/Sub-Grade (grams/mile)		0.03	0.43	3.32	0.11	0.05	0.01	1,486.40	0.00	0.23	1,556.07
Paving (grams/mile)		0.03	0.43	3.32	0.11	0.05	0.01	1,486.40	0.00	0.23	1,556.07
Grubbing/Land Clearing (grams/trip)		0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)		0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)		0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)		0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing		0.00	0.01	0.07	0.00	0.00	0.00	26.22	0.00	0.00	27.44
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.09
Pounds per day - Grading/Excavation		0.00	0.01	0.07	0.00	0.00	0.00	26.22	0.00	0.00	27.44
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.36
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.01	0.07	0.00	0.00	0.00	26.22	0.00	0.00	27.44
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.32
Pounds per day - Paving		0.00	0.01	0.07	0.00	0.00	0.00	26.22	0.00	0.00	27.44
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.14
Total tons per construction project		0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.00	0.00	0.91

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust		User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.48		4.85	0.02	1.01	0.00
Fugitive Dust - Grading/Excavation		0.48		4.85	0.06	1.01	0.01
Fugitive Dust - Drainage/Utilities/Subgrade		0.48		4.85	0.06	1.01	0.01

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions															
Grubbing/Land Clearing	Default	Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4		N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day		pounds/day	pounds/day
	Override of Default Number of Vehicles	Program-estimate													
	1.00		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Air Compressors	0.38	2.40	0.78	0.03	0.03	0.03	1,288.99	0.01		0.01	1,302.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
	1.00		Model Default Tier	Cranes	0.20	1.14	0.46	0.02	0.02	0.01	566.81	0.02		0.00	568.52
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
	1.00		Model Default Tier	Excavators	0.08	0.28	0.52	0.02	0.02	0.00	68.56	0.01		0.00	68.91
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
	3.00		Model Default Tier	Off-Highway Trucks	1.25	6.67	2.10	0.08	0.08	0.03	3,427.90	0.11		0.03	3,438.29
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Other General Industrial Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Other Material Handling Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
	1.00		Model Default Tier	Tractors/Loaders/Backhoes	0.36	2.16	0.66	0.02	0.02	0.01	1,153.36	0.03		0.01	1,156.70
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
User-Defined Off-road Equipment															
Number of Vehicles		If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4		N2O	CO2e
		Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day		pounds/day	pounds/day
	0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
	0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
	0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
	0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
	0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
	0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
	0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
	0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
		Grubbing/Land Clearing	pounds per day		2.28	12.65	4.53	0.17	0.17	0.06	6,515.61	0.20		0.05	6,535.14
		Grubbing/Land Clearing	tons per phase		0.01	0.04	0.01	0.00	0.00	0.00	21.50	0.00		0.00	21.50

Grading/Excavation		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles		Program-estimate		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00				Model Default Tier	Air Compressors	0.38	2.40	0.78	0.03	0.03	0.01	1,298.99	0.03	1,302.70
1.00				Model Default Tier	Bore/Drill Rigs	0.21	1.73	0.45	0.02	0.02	0.01	947.18	0.02	949.76
				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00				Model Default Tier	Cranes	0.20	1.14	0.46	0.02	0.02	0.01	566.81	0.02	568.52
				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00				Model Default Tier	Generator Sets	1.56	13.90	4.66	0.16	0.16	0.07	8,077.20	0.13	8,098.50
				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other General Industrial Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other Material Handling Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00				Model Default Tier	Welders	0.15	1.55	1.12	0.01	0.01	0.00	202.97	0.01	203.79
User-Defined Off-road Equipment		If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	CO2e
Number of Vehicles			Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grading/Excavation		pounds per day		2.50	20.71	7.48	0.22	0.22	0.10	11,093.15	0.21	11,123.29
		Grading/Excavation		tons per phase		0.03	0.27	0.10	0.00	0.00	0.00	146.43	0.00	146.83

Paving	Default	Mitigation Option	Default	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)												
	Override of Default Number of Vehicles	Program-estimate	Equipment Tier		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Excavators	0.08	0.28	0.52	0.02	0.02	0.00	68.56	0.01	0.00	68.91
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tier	Off-Highway Trucks	1.67	8.89	2.80	0.10	0.10	0.04	4,570.53	0.14	0.03	4,584.39
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Plate Compactors	0.04	0.21	0.25	0.01	0.01	0.00	34.48	0.00	0.00	34.65
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Rollers	0.04	0.19	0.22	0.01	0.01	0.00	30.47	0.00	0.00	30.63
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Tractors/Loaders/Backhoes	0.36	2.16	0.66	0.02	0.02	0.01	1,153.36	0.03	0.01	1,156.70
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab					pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
Number of Vehicles														
Equipment Tier														
Type														
0.00					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving					pounds per day	2.19	11.73	4.46	0.17	0.17	0.05	5,857.39	0.19	5,875.29
Paving					tons per phase	0.01	0.06	0.02	0.00	0.00	0.00	28.99	0.00	29.08
Total Emissions all Phases (tons per construction period) =>						0.08	0.65	0.23	0.01	0.01	0.00	345.21	0.01	346.16

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors	270.00	78		8
Bore/Drill Rigs	189.00	221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes	195.00	231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators	18.00	158		8
Forklifts		89		8
Generator Sets	363.00	84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks	300.00	402		8
Other Construction Equipment		172		8
Other General Industrial Equipment	100.00	88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors	8.00	8		8
Pressure Washers		13		8
Pumps		84		8
Rollers	8.00	80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes	311.00	97		8
Trenchers		78		8
Welders	45.00	46		8

END OF DATA ENTRY SHEET

ROAD CONSTRUCTION EMISSIONS MODEL

DATA ENTRY WORKSHEET

Note: Required data input sections have a yellow background.

Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.

The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41, for all project types.

Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

Version 9.0.0

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN

AIR QUALITY

MANAGEMENT DISTRICT

Input Type

Project Name

Construction Start Year

Project Type

Project Construction Time

Working Days per Month

Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)

Project Length

Total Project Area

Maximum Area Disturbed/Day

Water Trucks Used?

EBMUD Sobrante Central North Aqueduct Trenchless Mitigated

2035

4

3.00

22.00

1

0.10

0.48

0.48

1

Enter a Year between 2014 and 2040 (inclusive)

1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway

2) Road Widening : Project to add a new lane to an existing roadway

3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane

4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction

months

days (assume 22 if unknown)

1) Sand Gravel : Use for quaternary deposits (Delta/West County)

2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta)

3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)

miles

acres

acres

1. Yes

2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd³) (assume 20 if unknown)	Import Volume (yd³/day)	Export Volume (yd³/day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

Mitigation Options

On-road Fleet Emissions Mitigation

Off-road Equipment Emissions Mitigation

Will all off-road equipment be tier 4?

2010 and Newer On-road Vehicles Fleet

Tier 4 Equipment

All Tier 4 Equipment

Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer

Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (<http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation>).

Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when "Other Project Type" is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		0.30		1/1/2035
Grading/Excavation		1.20		1/11/2035
Drainage/Utilities/Sub-Grade		1.05		2/17/2035
Paving		0.45		3/21/2035
Totals (Months)	3			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
User Input											
Miles/round trip: Grubbing/Land Clearing		30.00		14	0	420.00					
Miles/round trip: Grading/Excavation		30.00		14	0	420.00					
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		7	0	210.00					
Miles/round trip: Paving		30.00		7	0	210.00					
2010+ Model Year Mitigation Option Emission Rates		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)		0.03	0.43	3.26	0.11	0.05	0.01	1,484.35	0.00	0.23	1,553.92
Grading/Excavation (grams/mile)		0.03	0.43	3.26	0.11	0.05	0.01	1,484.35	0.00	0.23	1,553.92
Draining/Utilities/Sub-Grade (grams/mile)		0.03	0.43	3.26	0.11	0.05	0.01	1,484.35	0.00	0.23	1,553.92
Paving (grams/mile)		0.03	0.43	3.26	0.11	0.05	0.01	1,484.35	0.00	0.23	1,553.92
Grubbing/Land Clearing (grams/trip)		0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)		0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)		0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)		0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions		COG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing		0.03	0.40	3.16	0.10	0.05	0.01	1,374.42	0.00	0.22	1,438.84
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.01	0.00	0.00	0.00	4.54	0.00	0.00	4.75
Pounds per day - Grading/Excavation		0.03	0.40	3.16	0.10	0.05	0.01	1,374.42	0.00	0.22	1,438.84
Tons per const. Period - Grading/Excavation		0.00	0.01	0.04	0.00	0.00	0.00	18.14	0.00	0.00	18.99
Pounds per day - Drainage/Utilities/Sub-Grade		0.01	0.20	1.58	0.05	0.02	0.01	687.21	0.00	0.11	719.42
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.02	0.00	0.00	0.00	7.94	0.00	0.00	8.31
Pounds per day - Paving		0.01	0.20	1.58	0.05	0.02	0.01	687.21	0.00	0.11	719.42
Tons per const. Period - Paving		0.00	0.00	0.01	0.00	0.00	0.00	3.40	0.00	0.00	3.56
Total tons per construction project		0.00	0.01	0.08	0.00	0.00	0.00	34.02	0.00	0.01	35.61

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
User Input						
Miles/round trip: Grubbing/Land Clearing					0	0.00
Miles/round trip: Grading/Excavation					0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00
Miles/round trip: Paving					0	0.00

2010+ Model Year Mitigation Option Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Grubbing/Land Clearing (grams/mile)	0.03	0.43	3.26	0.11	0.05	0.01	1,484.35	0.00	0.23	1,553.92
	Grading/Excavation (grams/mile)	0.03	0.43	3.26	0.11	0.05	0.01	1,484.35	0.00	0.23	1,553.92
	Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.43	3.26	0.11	0.05	0.01	1,484.35	0.00	0.23	1,553.92
	Paving (grams/mile)	0.03	0.43	3.26	0.11	0.05	0.01	1,484.35	0.00	0.23	1,553.92
	Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation (grams/trip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving (grams/trip)	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions											
User Input		User Override of Worker Commute Default Values		Default Values		Calculated Daily Trips		Calculated Daily VMT			
Miles/ one-way trip		30									
One-way trips/day		4									
No. of employees: Grubbing/Land Clearing		8				32		960.00			
No. of employees: Grading/Excavation		8				32		960.00			
No. of employees: Drainage/Utilities/Sub-Grade		14				56		1,680.00			
No. of employees: Paving		14				56		1,680.00			
Emission Rates		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)		0.00	0.49	0.02	0.05	0.02	0.00	230.02	0.00	0.00	231.06
Grading/Excavation (grams/mile)		0.00	0.49	0.02	0.05	0.02	0.00	230.02	0.00	0.00	231.06
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.49	0.02	0.05	0.02	0.00	230.02	0.00	0.00	231.06
Paving (grams/mile)		0.00	0.49	0.02	0.05	0.02	0.00	230.02	0.00	0.00	231.06
Grubbing/Land Clearing (grams/trip)		0.51	1.94	0.14	0.00	0.00	0.00	48.69	0.03	0.02	55.58
Grading/Excavation (grams/trip)		0.51	1.94	0.14	0.00	0.00	0.00	48.69	0.03	0.02	55.58
Draining/Utilities/Sub-Grade (grams/trip)		0.51	1.94	0.14	0.00	0.00	0.00	48.69	0.03	0.02	55.58
Paving (grams/trip)		0.51	1.94	0.14	0.00	0.00	0.00	48.69	0.03	0.02	55.58
Emissions		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing		0.04	1.18	0.06	0.10	0.04	0.00	490.26	0.00	0.01	492.95
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	1.62	0.00	0.00	1.63
Pounds per day - Grading/Excavation		0.04	1.18	0.06	0.10	0.04	0.00	490.26	0.00	0.01	492.95
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	6.47	0.00	0.00	6.51
Pounds per day - Drainage/Utilities/Sub-Grade		0.08	2.06	0.10	0.17	0.07	0.01	857.96	0.01	0.02	862.65
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.02	0.00	0.00	0.00	0.00	9.91	0.00	0.00	9.96
Pounds per day - Paving		0.08	2.06	0.10	0.17	0.07	0.01	857.96	0.01	0.02	862.65
Tons per const. Period - Paving		0.00	0.01	0.00	0.00	0.00	0.00	4.25	0.00	0.00	4.27
Total tons per construction project		0.00	0.05	0.00	0.00	0.00	0.00	22.25	0.00	0.00	22.37

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions											
User Input		User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT		
Grubbing/Land Clearing - Exhaust		1		1.00			8.00		8.00		
Grading/Excavation - Exhaust		1		1.00			8.00		8.00		
Drainage/Utilities/Subgrade		1		1.00			8.00		8.00		
Paving		1		1.00			8.00		8.00		
2010+ Model Year Mitigation Option Emission Rates		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)		0.03	0.43	3.26	0.11	0.05	0.01	1,484.35	0.00	0.23	1,553.92
Grading/Excavation (grams/mile)		0.03	0.43	3.26	0.11	0.05	0.01	1,484.35	0.00	0.23	1,553.92
Draining/Utilities/Sub-Grade (grams/mile)		0.03	0.43	3.26	0.11	0.05	0.01	1,484.35	0.00	0.23	1,553.92
Paving (grams/mile)		0.03	0.43	3.26	0.11	0.05	0.01	1,484.35	0.00	0.23	1,553.92
Grubbing/Land Clearing (grams/trip)		0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)		0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)		0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)		0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing		0.00	0.01	0.07	0.00	0.00	0.00	26.18	0.00	0.00	27.41
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.09
Pounds per day - Grading/Excavation		0.00	0.01	0.07	0.00	0.00	0.00	26.18	0.00	0.00	27.41
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.36
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.01	0.07	0.00	0.00	0.00	26.18	0.00	0.00	27.41
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.32
Pounds per day - Paving		0.00	0.01	0.07	0.00	0.00	0.00	26.18	0.00	0.00	27.41
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.14
Total tons per construction project		0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.00	0.00	0.90

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust		User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.48		4.85	0.02	1.01	0.00
Fugitive Dust - Grading/Excavation		0.48		4.85	0.06	1.01	0.01
Fugitive Dust - Drainage/Utilities/Subgrade		0.48		4.85	0.06	1.01	0.01

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions															
Grubbing/Land Clearing	Default	Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of	Default Equipment Tier (applicable only												
	Override of Default Number of Vehicles	Program-estimate	when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
1.00			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Air Compressors	0.34	5.94	0.69	0.03	0.03	0.01	1,298.99	0.03	0.01	1,302.70	
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Tier 4	Cranes	0.15	2.59	0.30	0.01	0.01	0.01	566.81	0.02	0.00	568.52	
			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Tier 4	Excavators	0.04	0.59	0.64	0.04	0.03	0.00	68.56	0.01	0.00	68.91	
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3.00			Tier 4	Off-Highway Trucks	0.90	15.68	1.81	0.09	0.08	0.03	3,427.90	0.11	0.03	3,438.29	
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Other General Industrial Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Other Material Handling Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Tier 4	Tractors/Loaders/Backhoes	0.30	5.28	0.61	0.03	0.03	0.01	1,153.36	0.03	0.01	1,156.70	
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
User-Defined Off-road Equipment															
Number of Vehicles		If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
		Equipment Tier				Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grubbing/Land Clearing				pounds per day	1.74	30.09	4.05	0.21	0.19	0.06	6,515.61	0.20	6,535.14
		Grubbing/Land Clearing				tons per phase	0.01	0.10	0.01	0.00	0.00	0.00	21.50	0.00	21.57

Grading/Excavation	Default		Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type											
Override of Default Number of Vehicles		Program-estimate	Selected	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	1.00			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00
	1.00			Tier 4	Air Compressors	0.34	5.94	0.69	0.03	0.03	0.01	1,298.99	0.03	0.01	1,302.70
				Tier 4	Bore/Drill Rigs	0.25	4.33	0.50	0.03	0.02	0.01	947.18	0.02	0.01	949.76
				Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1.00			Tier 4	Cranes	0.15	2.59	0.30	0.01	0.01	0.01	566.81	0.02	0.00	568.52
				Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3.00			Tier 4	Generator Sets	2.13	36.95	4.26	0.21	0.20	0.07	8,077.20	0.13	0.06	8,098.50
				Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Other General Industrial Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Other Material Handling Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1.00			Tier 4	Welders	0.07	1.46	1.19	0.01	0.01	0.00	202.97	0.01	0.00	203.79
User-Defined Off-road Equipment		If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles				Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grading/Excavation			pounds per day	2.94	51.29	6.94	0.29	0.27	0.10	11,093.15	0.21	0.08	11,123.29
		Grading/Excavation			tons per phase	0.04	0.68	0.09	0.00	0.00	0.00	146.43	0.00	0.00	146.83

Data Entry Worksheet

Paving	Default		Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option													
	Override of Default Number of Vehicles	Program-estimate Selected)	Equipment Tier	Type											
				Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00				Tier 4	Excavators	0.04	0.59	0.64	0.04	0.03	0.00	68.56	0.01	0.00	68.91
				Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00				Tier 4	Off-Highway Trucks	1.20	20.91	2.41	0.12	0.11	0.04	4,570.53	0.14	0.03	4,584.39
				Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Other General Industrial Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Other Material Handling Equip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00				Tier 4	Plate Compactors	0.02	0.36	0.32	0.02	0.02	0.00	34.48	0.00	0.00	34.65
				Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00				Tier 4	Rollers	0.02	0.32	0.29	0.02	0.01	0.00	30.47	0.00	0.00	30.63
				Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00				Tier 4	Tractors/Loaders/Backhoes	0.30	5.28	0.61	0.03	0.03	0.01	1,153.36	0.03	0.01	1,156.70
				Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment						ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles						pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving						pounds per day	1.58	27.46	4.27	0.22	0.20	0.05	5,857.39	0.19	5,875.29
Paving						tons per phase	0.01	0.14	0.02	0.00	0.00	0.00	28.99	0.00	29.08
Total Emissions all Phases (tons per construction period) =>						0.09	1.60	0.22	0.01	0.01	0.00	345.21	0.01	0.00	346.16

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors	270.00	78		8
Bore/Drill Rigs	189.00	221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes	195.00	231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators	18.00	158		8
Forklifts		89		8
Generator Sets	363.00	84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks	300.00	402		8
Other Construction Equipment		172		8
Other General Industrial Equipment	100.00	88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors	8.00	8		8
Pressure Washers		13		8
Pumps		84		8
Rollers	8.00	80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes	311.00	97		8
Trenchers		78		8
Welders	45.00	46		8

END OF DATA ENTRY SHEET

Attachment B

Health Risk Assessment Results

- **Pipeline**
- **WTP**
- **Pipeline and WTP**

Daily Emissions (pounds)							
	ROG	CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f
Employee Vehicles	0.01	0.41	0.03	0.00	0.04	0.00	0.02
Delivery Trucks	0.00	0.01	0.09	0.01	0.01	0.00	0.00
Light Trucks	0.00	0.32	0.02	0.00	0.03	0.00	0.01
Area Sources	0.50	0.00	0.00	0.00		0.00	
Total	0.51	0.74	0.15	0.01	0.08	0.00	0.03
CEQA Thresholds	54		54	82		54	

Annual Emissions (tons)							
	ROG	CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f
Employee Vehicles	0.00	0.06	0.00	0.00	0.01	0.00	0.00
Delivery Trucks	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Light Trucks	0.00	0.04	0.00	0.00	0.00	0.00	0.00
Area Sources	0.09	0.00					
Energy Source							
Waste							
Water							
Total	0.09	0.10	0.02	0.00	0.01	0.00	0.00

CEQA Thresholds	10		10	15		10	
-----------------	----	--	----	----	--	----	--

Metric Tons	Metric Tons	Gallons	Gallons
CO2	CO2	Gasoline	Diesel
27	27	2,993	
6	6		588
19	19	2,156	
0	0		
50	63		
13	13		
9	9		
123	136	5,149	588

660	440
Phase 1	Phase 2

Operational Employee Vehicle Emissions																																	
Year	Monthly Trips	Maximum Daily Trips	Average Daily Trips	Emission Factor (g/mile)												Daily Emissions (pounds/day)								Annual Emissions (tons/year)								Annual Emissions (metric tons/year)	
				ROG	CO	NOX	CO2	CH4	N2O	PM10e	PM10f	PM2.5e	PM2.5f	SO2	ROG	CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	SO2	ROG	CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	SO2	CO2e	gals Gas	
2030	446	24	24	0.01	0.44	0.03	229	0.001	0.004	0.00	0.05	0.00	0.02	0.002	0.01	0.41	0.03	0.00	0.04	0.00	0.02	0.00	0.00	0.06	0.00	0.00	0.01	0.00	0.00	0.00	26.7	2,993	

23 Days per Month
10.8 miles per one way trip
8.91 kg/CO2/gal

5,352 trips per year

Operational Light Dudy Truck Emissions																																	
Year	Monthly Trips	Maximum Daily Trips	Average Daily Trips	Emission Factor (g/mile)												Daily Emissions (pounds/day)								Annual Emissions (tons/year)								Annual Emissions (metric tons/year)	
				ROG	CO	NOX	CO2	CH4	N2O	PM10e	PM10f	PM2.5e	PM2.5f	SO2	ROG	CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	SO2	ROG	CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	SO2	CO2e	gals Gas	
2030	296	18	18	0.01	0.52	0.03	250	0.002	0.004	0.00	0.04	0.00	0.02	0.002	0.00	0.32	0.02	0.00	0.03	0.00	0.01	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	19.2	2,156	

23 Days per Month
10.8 miles per one way trip
8.91 kg/CO2/gal

3,546 trips per year

Operational Delivery Truck Emissions																																	
Year	Monthly Trips	Maximum Daily Trips	Average Daily Trips	Emission Factor (g/mile)												Daily Emissions (pounds/day)								Annual Emissions (tons/year)								Annual Emissions (metric tons/year)	
				ROG	CO	NOX	CO2	CH4	N2O	PM10e	PM10f	PM2.5e	PM2.5f	SO2	ROG	CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	SO2	ROG	CO	NOX	PM10e	PM10f	PM2.5e	PM2.5f	SO2	CO2e	gals Diesel	
2030	33	1	1	0.02	0.19	2.21	1,069	0.001	0.168	0.15	0.14	0.01	0.06	0.010	0.00	0.01	0.09	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	6.0	588

23 Days per Month
6.8 miles per one way trip
10.15 kg/CO2/gal
394 trips per year

		PGE CO2	PGE CO2	PGE CH4	PGE CH4	PGE N2O	PGE N2O
		MT/MWh	lb/MWh	MT/MWh	lb/MWh	MT/MWh	lb/MWh
2020	33%	0.0925	203.93	0.000015	0.033	0.000002	0.004
2021	36%	0.0823	181.50	0.000013	0.029	0.000002	0.004
2022	39%	0.0722	159.06	0.000012	0.026	0.000001	0.003
2023	41%	0.0620	136.63	0.000010	0.022	0.000001	0.003
2024	44%	0.0518	114.20	0.000008	0.018	0.000001	0.002
2025	47%	0.0493	108.76	0.000008	0.018	0.000001	0.002
2026	49%	0.0469	103.32	0.000008	0.017	0.000001	0.002
2027	52%	0.0444	97.89	0.000007	0.016	0.000001	0.002
2028	55%	0.0419	92.45	0.000007	0.015	0.000001	0.002
2029	57%	0.0395	87.01	0.000006	0.014	0.000001	0.002
2030	60%	0.0370	81.57	0.000006	0.013	0.000001	0.002
2031	63%	0.0347	76.47	0.000006	0.012	0.000001	0.002
2032	65%	0.0324	71.37	0.000005	0.012	0.000001	0.001
2033	68%	0.0301	66.28	0.000005	0.011	0.000001	0.001
2034	70%	0.0278	61.18	0.000004	0.010	0.000001	0.001
2035	73%	0.0254	56.08	0.000004	0.009	0.000000	0.001
2036	75%	0.0231	50.98	0.000004	0.008	0.000000	0.001
2037	78%	0.0208	45.88	0.000003	0.007	0.000000	0.001
2038	80%	0.0185	40.79	0.000003	0.007	0.000000	0.001
2039	83%	0.0162	35.69	0.000003	0.006	0.000000	0.001
2040	85%	0.0139	30.59	0.000002	0.005	0.000000	0.001
2041	88%	0.0116	25.49	0.000002	0.004	0.000000	0.001
2042	90%	0.0093	20.39	0.000001	0.003	0.000000	0.000
2043	93%	0.0069	15.29	0.000001	0.002	0.000000	0.000
2044	95%	0.0046	10.20	0.000001	0.002	0.000000	0.000
2045	100%	-	-	-	-	-	-

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**EBMUD El Sobrante
Bay Area AQMD Air District, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	20.50	1000sqft	2.31	20,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	64
Climate Zone	5			Operational Year	2030
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Phase 1 = 2.31 acres, Phase 2 = 1.94 acres

Construction Phase - Demolition fugitive dust only, construction exhaust emissions calculated externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Trips and VMT - Fugitive dust emission only; exhaust determined externally

Demolition -

Grading - Phase 1 = 2.31 acres, Phase 2 = 1.94 acres

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Vehicle Trips - Motor vehicles emissions determined externally

Energy Use - The 2022 state energy code requires all-electric facilities. Estimate energy usage per SOWTP Energy & Truck Trips.

Construction Off-road Equipment Mitigation - Basic and enhanced mitigation measures

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	0.00
tblEnergyUse	LightingElect	3.70	0.00
tblEnergyUse	NT24E	3.36	3.81
tblEnergyUse	NT24NG	6.90	0.00
tblEnergyUse	T24E	1.59	324.00
tblEnergyUse	T24NG	20.06	0.00
tblGrading	AcresOfGrading	0.00	2.31
tblGrading	AcresOfGrading	0.00	2.31
tblLandUse	LotAcreage	0.47	2.31
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	80.00	0.00
tblTripsAndVMT	VendorTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	9.00	0.00
tblTripsAndVMT	WorkerTripNumber	2.00	0.00
tblVehicleTrips	ST_TR	1.99	0.00
tblVehicleTrips	SU_TR	5.00	0.00
tblVehicleTrips	WD_TR	4.96	0.00

2.0 Emissions Summary

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**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					
2026	0.0000	0.0000	0.0000	0.0000	0.0111	0.0000	0.0111	1.5700e-003	0.0000	1.5700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2027	0.1069	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.1069	0.0000	0.0000	0.0000	0.0111	0.0000	0.0111	1.5700e-003	0.0000	1.5700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					
2026	0.0000	0.0000	0.0000	0.0000	4.3100e-003	0.0000	4.3100e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2027	0.1069	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.1069	0.0000	0.0000	0.0000	4.3100e-003	0.0000	4.3100e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	61.03	0.00	61.03	61.15	0.00	61.15	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
4	4-1-2027	6-30-2027	0.0153	0.0153
5	7-1-2027	9-30-2027	0.0916	0.0916
		Highest	0.0916	0.0916

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	0.0908	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7000e-004	3.7000e-004	0.0000	0.0000	3.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	621.7695	621.7695	0.1006	0.0122	627.9177
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	5.1600	0.0000	5.1600	0.3050	0.0000	12.7838
Water						0.0000	0.0000		0.0000	0.0000	1.5040	2.3734	3.8774	0.1549	3.6900e-003	8.8496
Total	0.0908	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6.6640	624.1432	630.8072	0.5604	0.0159	649.5514

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

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	0.0908	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7000e-004	3.7000e-004	0.0000	0.0000	3.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	5.1600	0.0000	5.1600	0.3050	0.0000	12.7838
Water						0.0000	0.0000		0.0000	0.0000	1.5040	2.3734	3.8774	0.1549	3.6900e-003	8.8496
Total	0.0908	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6.6640	2.3738	9.0378	0.4598	3.6900e-003	21.6338

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.62	98.57	17.95	76.76	96.67

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2026	7/28/2026	5	20	
2	Site Preparation	Site Preparation	7/29/2026	7/31/2026	5	3	
3	Grading	Grading	8/1/2026	8/10/2026	5	6	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Building Construction	Building Construction	8/11/2026	8/10/2026	5	0
5	Paving	Paving	6/15/2027	6/28/2027	5	10
6	Architectural Coating	Architectural Coating	6/29/2027	7/12/2027	5	10

Acres of Grading (Site Preparation Phase): 2.31**Acres of Grading (Grading Phase): 2.31****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 30,750; Non-Residential Outdoor: 10,250; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Scrapers	0	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Cranes	0	8.00	231	0.29
Building Construction	Forklifts	0	7.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	0	8.00	9	0.56
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Paving	Rollers	0	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Architectural Coating	Air Compressors	0	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
Demolition	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2026

Unmitigated Construction On-Site

[illegible]

Unmitigated Construction Off-Site

[illegible]

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

[illegible]

Mitigated Construction Off-Site

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction On-Site

[illegible]

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

[illegible]

Mitigated Construction Off-Site

[illegible]

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction On-Site

[illegible]

Unmitigated Construction Off-Site

[illegible]

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

[illegible]

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction On-Site

[illegible]

Unmitigated Construction Off-Site

[illegible]

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

[illegible]

Mitigated Construction Off-Site

[illegible]

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction On-Site

[illegible]

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

[illegible]

Mitigated Construction Off-Site

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction On-Site

[illegible]

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

[illegible]

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.555148	0.059467	0.187500	0.120419	0.022094	0.005825	0.011277	0.007430	0.000952	0.000505	0.025870	0.000875	0.002638

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Historical Energy Use: Y

Percent of Electricity Use Generated with Renewable Energy

[illegible]

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated

[illegible]

Mitigated

[illegible]

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	6.72011e+006	621.7695	0.1006	0.0122	627.9177
Total		621.7695	0.1006	0.0122	627.9177

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0908	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7000e-004	3.7000e-004	0.0000	0.0000	3.9000e-004
Unmitigated	0.0908	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7000e-004	3.7000e-004	0.0000	0.0000	3.9000e-004

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	0.0107					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7000e-004	3.7000e-004	0.0000	0.0000	3.9000e-004
Total	0.0908	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7000e-004	3.7000e-004	0.0000	0.0000	3.9000e-004

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

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	0.0107					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7000e-004	3.7000e-004	0.0000	0.0000	3.9000e-004
Total	0.0908	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7000e-004	3.7000e-004	0.0000	0.0000	3.9000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.8774	0.1549	3.6900e-003	8.8496
Unmitigated	3.8774	0.1549	3.6900e-003	8.8496

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	4.74062 / 0	3.8774	0.1549	3.6900e-003	8.8496
Total		3.8774	0.1549	3.6900e-003	8.8496

EBMUD El Sobrante - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	4.74062 / 0	3.8774	0.1549	3.6900e-003	8.8496
Total		3.8774	0.1549	3.6900e-003	8.8496

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.1600	0.3050	0.0000	12.7838
Unmitigated	5.1600	0.3050	0.0000	12.7838

EBMUD El Sobrante - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	25.42	5.1600	0.3050	0.0000	12.7838
Total		5.1600	0.3050	0.0000	12.7838

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	25.42	5.1600	0.3050	0.0000	12.7838
Total		5.1600	0.3050	0.0000	12.7838

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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EBMUD El Sobrante - Bay Area AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**EBMUD El Sobrante**
Bay Area AQMD Air District, Summer**1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	20.50	1000sqft	2.31	20,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	64
Climate Zone	5			Operational Year	2030
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Phase 1 = 2.31 acres, Phase 2 = 1.94 acres

Construction Phase - Demolition fugitive dust only, construction exhaust emissions calculated externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Trips and VMT - Fugitive dust emission only; exhaust determined externally

Demolition -

Grading - Phase 1 = 2.31 acres, Phase 2 = 1.94 acres

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Vehicle Trips - Motor vehicles emissins determined externally

Energy Use - The 2022 state energy code requires all-electric facilities. Estimate energy usage per SOWTP Energy & Truck Trips.

Construction Off-road Equipment Mitigation - Basic and enhanced mitigation measures

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	0.00
tblEnergyUse	LightingElect	3.70	0.00
tblEnergyUse	NT24E	3.36	3.81
tblEnergyUse	NT24NG	6.90	0.00
tblEnergyUse	T24E	1.59	324.00
tblEnergyUse	T24NG	20.06	0.00
tblGrading	AcresOfGrading	0.00	2.31
tblGrading	AcresOfGrading	0.00	2.31
tblLandUse	LotAcreage	0.47	2.31
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	80.00	0.00
tblTripsAndVMT	VendorTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	9.00	0.00
tblTripsAndVMT	WorkerTripNumber	2.00	0.00
tblVehicleTrips	ST_TR	1.99	0.00
tblVehicleTrips	SU_TR	5.00	0.00
tblVehicleTrips	WD_TR	4.96	0.00

2.0 Emissions Summary

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**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					
2026	0.0000	0.0000	0.0000	0.0000	0.8613	0.0000	0.8613	0.1304	0.0000	0.1304	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2027	21.3789	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	21.3789	0.0000	0.0000	0.0000	0.8613	0.0000	0.8613	0.1304	0.0000	0.1304	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					
2026	0.0000	0.0000	0.0000	0.0000	0.3359	0.0000	0.3359	0.0509	0.0000	0.0509	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2027	21.3789	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	21.3789	0.0000	0.0000	0.0000	0.3359	0.0000	0.3359	0.0509	0.0000	0.0509	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	61.00	0.00	61.00	61.00	0.00	61.00	0.00	0.00	0.00	0.00	0.00	0.00

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**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	0.4975	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	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	0.4975	2.0000e-005	2.0800e-003	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005	0.0000	4.7800e-003

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	0.4975	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	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	0.4975	2.0000e-005	2.0800e-003	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005	0.0000	4.7800e-003

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2026	7/28/2026	5	20	
2	Site Preparation	Site Preparation	7/29/2026	7/31/2026	5	3	
3	Grading	Grading	8/1/2026	8/10/2026	5	6	
4	Building Construction	Building Construction	8/11/2026	8/10/2026	5	0	
5	Paving	Paving	6/15/2027	6/28/2027	5	10	
6	Architectural Coating	Architectural Coating	6/29/2027	7/12/2027	5	10	

Acres of Grading (Site Preparation Phase): 2.31**Acres of Grading (Grading Phase): 2.31****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 30,750; Non-Residential Outdoor: 10,250; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Scrapers	0	8.00	367	0.48

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Site Preparation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Cranes	0	8.00	231	0.29
Building Construction	Forklifts	0	7.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	0	8.00	9	0.56
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Architectural Coating	Air Compressors	0	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
Demolition	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction**Water Exposed Area**

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					0.8613	0.0000	0.8613	0.1304	0.0000	0.1304			0.0000			0.0000
Off-Road	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	0.0000	0.0000	0.0000	0.0000	0.8613	0.0000	0.8613	0.1304	0.0000	0.1304		0.0000	0.0000	0.0000		0.0000

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2026****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	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
Worker	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	lb/day										lb/day					
Fugitive Dust					0.3359	0.0000	0.3359	0.0509	0.0000	0.0509			0.0000			0.0000
Off-Road	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.3359	0.0000	0.3359	0.0509	0.0000	0.0509	0.0000	0.0000	0.0000	0.0000		0.0000

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2026****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	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
Worker	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

3.3 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					0.8166	0.0000	0.8166	0.0882	0.0000	0.0882			0.0000			0.0000
Off-Road	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	0.0000	0.0000	0.0000	0.0000	0.8166	0.0000	0.8166	0.0882	0.0000	0.0882		0.0000	0.0000	0.0000		0.0000

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Site Preparation - 2026****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	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
Worker	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	lb/day										lb/day					
Fugitive Dust					0.3185	0.0000	0.3185	0.0344	0.0000	0.0344			0.0000			0.0000
Off-Road	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.3185	0.0000	0.3185	0.0344	0.0000	0.0344	0.0000	0.0000	0.0000	0.0000		0.0000

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Site Preparation - 2026****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	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
Worker	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

3.4 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					0.4083	0.0000	0.4083	0.0441	0.0000	0.0441			0.0000			0.0000
Off-Road	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	0.0000	0.0000	0.0000	0.0000	0.4083	0.0000	0.4083	0.0441	0.0000	0.0441		0.0000	0.0000	0.0000		0.0000

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Grading - 2026****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	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
Worker	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	lb/day										lb/day					
Fugitive Dust					0.1592	0.0000	0.1592	0.0172	0.0000	0.0172			0.0000			0.0000
Off-Road	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.1592	0.0000	0.1592	0.0172	0.0000	0.0172	0.0000	0.0000	0.0000	0.0000		0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

Unmitigated Construction On-Site

[illegible]

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

[illegible]

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Building Construction - 2026****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	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	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.6 Paving - 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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Paving - 2027****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	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
Worker	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

3.7 Architectural Coating - 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					
Archit. Coating	21.3789					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	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	21.3789	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

[illegible]

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.7 Architectural Coating - 2027****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	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
Worker	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.555148	0.059467	0.187500	0.120419	0.022094	0.005825	0.011277	0.007430	0.000952	0.000505	0.025870	0.000875	0.002638

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.0 Energy Detail**

Historical Energy Use: Y

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
General Light Industry	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		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	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		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.4975	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Unmitigated	0.4975	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003

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	0.0586					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4387					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Total	0.4975	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

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	0.0586					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4387					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Total	0.4975	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003

7.0 Water Detail

7.1 Mitigation Measures Water

EBMUD El Sobrante - Bay Area AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**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
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

EBMUD EI Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**EBMUD EI Sobrante****Bay Area AQMD Air District, Winter****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	20.50	1000sqft	2.31	20,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	64
Climate Zone	5			Operational Year	2030
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Phase 1 = 2.31 acres, Phase 2 = 1.94 acres

Construction Phase - Demolition fugitive dust only, construction exhaust emissions calculated externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Off-road Equipment - Fugitive emission only; exhaust determined externally

Trips and VMT - Fugitive dust emission only; exhaust determined externally

Demolition -

Grading - Phase 1 = 2.31 acres, Phase 2 = 1.94 acres

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Vehicle Trips - Motor vehicles emissions determined externally

Energy Use - The 2022 state energy code requires all-electric facilities. Estimate energy usage per SOWTP Energy & Truck Trips.

Construction Off-road Equipment Mitigation - Basic and enhanced mitigation measures

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	0.00
tblEnergyUse	LightingElect	3.70	0.00
tblEnergyUse	NT24E	3.36	3.81
tblEnergyUse	NT24NG	6.90	0.00
tblEnergyUse	T24E	1.59	324.00
tblEnergyUse	T24NG	20.06	0.00
tblGrading	AcresOfGrading	0.00	2.31
tblGrading	AcresOfGrading	0.00	2.31
tblLandUse	LotAcreage	0.47	2.31
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	80.00	0.00
tblTripsAndVMT	VendorTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	9.00	0.00
tblTripsAndVMT	WorkerTripNumber	2.00	0.00
tblVehicleTrips	ST_TR	1.99	0.00
tblVehicleTrips	SU_TR	5.00	0.00
tblVehicleTrips	WD_TR	4.96	0.00

2.0 Emissions Summary

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**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					
2026	0.0000	0.0000	0.0000	0.0000	0.8613	0.0000	0.8613	0.1304	0.0000	0.1304	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2027	21.3789	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	21.3789	0.0000	0.0000	0.0000	0.8613	0.0000	0.8613	0.1304	0.0000	0.1304	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					
2026	0.0000	0.0000	0.0000	0.0000	0.3359	0.0000	0.3359	0.0509	0.0000	0.0509	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2027	21.3789	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	21.3789	0.0000	0.0000	0.0000	0.3359	0.0000	0.3359	0.0509	0.0000	0.0509	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	61.00	0.00	61.00	61.00	0.00	61.00	0.00	0.00	0.00	0.00	0.00	0.00

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**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	0.4975	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	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	0.4975	2.0000e-005	2.0800e-003	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005	0.0000	4.7800e-003

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	0.4975	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	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	0.4975	2.0000e-005	2.0800e-003	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005	0.0000	4.7800e-003

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2026	7/28/2026	5	20	
2	Site Preparation	Site Preparation	7/29/2026	7/31/2026	5	3	
3	Grading	Grading	8/1/2026	8/10/2026	5	6	
4	Building Construction	Building Construction	8/11/2026	8/10/2026	5	0	
5	Paving	Paving	6/15/2027	6/28/2027	5	10	
6	Architectural Coating	Architectural Coating	6/29/2027	7/12/2027	5	10	

Acres of Grading (Site Preparation Phase): 2.31**Acres of Grading (Grading Phase): 2.31****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 30,750; Non-Residential Outdoor: 10,250; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Scrapers	0	8.00	367	0.48

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Site Preparation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Cranes	0	8.00	231	0.29
Building Construction	Forklifts	0	7.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	0	8.00	9	0.56
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Architectural Coating	Air Compressors	0	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
Demolition	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction**Water Exposed Area**

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					0.8613	0.0000	0.8613	0.1304	0.0000	0.1304			0.0000			0.0000
Off-Road	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	0.0000	0.0000	0.0000	0.0000	0.8613	0.0000	0.8613	0.1304	0.0000	0.1304		0.0000	0.0000	0.0000		0.0000

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2026****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	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
Worker	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	lb/day										lb/day					
Fugitive Dust					0.3359	0.0000	0.3359	0.0509	0.0000	0.0509			0.0000			0.0000
Off-Road	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.3359	0.0000	0.3359	0.0509	0.0000	0.0509	0.0000	0.0000	0.0000	0.0000		0.0000

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2026****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	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
Worker	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

3.3 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					0.8166	0.0000	0.8166	0.0882	0.0000	0.0882			0.0000			0.0000
Off-Road	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	0.0000	0.0000	0.0000	0.0000	0.8166	0.0000	0.8166	0.0882	0.0000	0.0882		0.0000	0.0000	0.0000		0.0000

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Site Preparation - 2026****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	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
Worker	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	lb/day										lb/day					
Fugitive Dust					0.3185	0.0000	0.3185	0.0344	0.0000	0.0344			0.0000			0.0000
Off-Road	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.3185	0.0000	0.3185	0.0344	0.0000	0.0344	0.0000	0.0000	0.0000	0.0000		0.0000

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Site Preparation - 2026****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	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
Worker	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

3.4 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					0.4083	0.0000	0.4083	0.0441	0.0000	0.0441			0.0000			0.0000
Off-Road	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	0.0000	0.0000	0.0000	0.0000	0.4083	0.0000	0.4083	0.0441	0.0000	0.0441		0.0000	0.0000	0.0000		0.0000

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Grading - 2026****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	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
Worker	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	lb/day										lb/day					
Fugitive Dust					0.1592	0.0000	0.1592	0.0172	0.0000	0.0172			0.0000			0.0000
Off-Road	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.1592	0.0000	0.1592	0.0172	0.0000	0.0172	0.0000	0.0000	0.0000	0.0000		0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

Unmitigated Construction On-Site

[illegible]

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Building Construction - 2026****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	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	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.6 Paving - 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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	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
Worker	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction On-Site

[illegible]

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2027

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	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
Worker	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

3.7 Architectural Coating - 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					
Archit. Coating	21.3789					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	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	21.3789	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

[illegible]

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.7 Architectural Coating - 2027****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	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
Worker	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.555148	0.059467	0.187500	0.120419	0.022094	0.005825	0.011277	0.007430	0.000952	0.000505	0.025870	0.000875	0.002638

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
General Light Industry	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		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	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		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.4975	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Unmitigated	0.4975	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003

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	0.0586					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4387					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Total	0.4975	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

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	0.0586					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4387					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Total	0.4975	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003

7.0 Water Detail

7.1 Mitigation Measures Water

EBMUD El Sobrante - Bay Area AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**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
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

APPENDIX E

Appendix E.2 – Health Risk Assessment

Attachment B

Health Risk Assessment Methodology and Assumptions

A health risk assessment (HRA) is accomplished in four steps: 1) hazards identification, 2) exposure assessment, 3) toxicity assessment, and 4) risk characterization. These steps cover the estimation of air emissions, the estimation of the air concentrations resulting from a dispersion analysis, the incorporation of the toxicity of the pollutants emitted, and the characterization of the risk based on exposure parameters such as breathing rate, age adjustment factors, and exposure duration; each depending on receptor type (i.e., residence, school, daycare centers, hospitals, senior care facilities, recreational areas, adult, infant, child).

This HRA was conducted in accordance with technical guidelines developed by federal, state, and regional agencies, including U.S. Environmental Protection Agency (USEPA), California Environmental Protection Agency (CalEPA), California Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*¹ and the Bay Area Air Quality Management District (BAAQMD) *Health Risk Screening Analysis Guidelines*.² This HRA addresses the emissions from construction activities including onsite equipment and haul trucks. Specific focus is on diesel particulate matter (DPM) and particulate matter equal to or less than 2.5 micrometers (fine particulate or PM_{2.5}) emissions. Gasoline-fueled vehicles emit air toxics in much smaller quantities and toxicity levels compared to DPM. Thus, gasoline-fueled emission sources were not included in the HRA. Secondly, air toxics emissions from project operations is not expected to be substantial (as shown in Section 7 of the Air Quality Technical Report incremental increases in operational emissions due to employee vehicles, and delivery trucks would be well below significance thresholds and not a large source of air toxics) and thus, the HRA focused on construction equipment emissions of DPM.

According to CalEPA, a HRA should not be interpreted as the expected rates of cancer or other potential human health effects, but rather as estimates of potential risk or likelihood of adverse effects based on current knowledge, under a number of highly conservative assumptions and the best assessment tools currently available.

TERMS AND DEFINITIONS

As the practice of conducting an HRA is particularly complex and involves concepts that are not altogether familiar to most people, several terms and definitions are provided that are considered essential to the understanding of the approach, methodology and results:

Acute effect – a health effect (non-cancer) produced within a short period of time (few minutes to several days) following an exposure to toxic air contaminants (TAC).

¹ Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, March 6, 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html.

² Bay Area Air Quality Management District, *Health Risk Screening Analysis Guidelines*, January 2010, http://www.baaqmd.gov/~media/Files/Engineering/Air%20Toxics%20Programs/hrsa_guidelines.ashx

Cancer risk – the probability of an individual contracting cancer from a lifetime (i.e., 70 year) exposure to TAC such as DPM in the ambient air.

Chronic effect – a health effect (non-cancer) produced from a continuous exposure occurring over an extended period (weeks, months, years).

Hazard Index (HI) – the unitless ratio of an exposure level over the acceptable reference dose. The HI can be applied to multiple compounds in an additive manner.

Hazard Quotient (HQ) – the unitless ratio of an exposure level over the acceptable reference dose. The HQ is applied to individual compounds.

Toxic Air Contaminants – any air pollutant that can cause short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). The current California list of TAC lists approximately 200 compounds, including particulate emissions from diesel-fueled engines.

Human Health Effects - comprise disorders such as eye watering, respiratory or heart ailments, and other (i.e., non-cancer) related diseases.

Health Risk Assessment – an analysis designed to predict the generation and dispersion of TAC in the outdoor environment, evaluate the potential for exposure of human populations, and to assess and quantify both the individual and population-wide health risks associated with those levels of exposure.

Incremental – under CEQA, the net difference (or change) in conditions or impacts when comparing the baseline to future year project conditions.

Maximum exposed individual (MEI) – an individual assumed to be located at the point where the highest concentrations of TAC, and therefore, health risks are predicted to occur.

Non-cancer risks – health risks such as eye watering, respiratory or heart ailments, and other non-cancer related diseases.

Receptors – the locations where potential health impacts or risks are predicted (i.e., schools, residences, and recreational sites).

LIMITATIONS AND UNCERTAINTIES

There are several important limitations and uncertainties commonly associated with an HRA due to the wide variability of human exposures to TAC, the extended timeframes over which the exposures are evaluated, and the inability to verify the results. Limitations and uncertainties associated with the HRA and identified by the CalEPA include: (a.) lack of reliable monitoring data; (b.) extrapolation of toxicity data in animals to humans; (c.) estimation errors in calculating TAC emissions; (d.) concentration prediction errors with dispersion models; and (e.) the variability in lifestyles, fitness and other confounding factors of the human population. This HRA was performed using the best available data and methodologies, notwithstanding the following uncertainties:

- There are uncertainties associated with the estimation of emissions from project activities. Where project-specific data, such as emission factors, are not available, default assumptions in emission models were used.
- The limitations of the air dispersion model provide a source of uncertainty in the estimation of exposure concentrations. According to USEPA, errors due to the limitation of the algorithms implemented in the air dispersion model in the highest estimated concentrations of +/- 10 percent to 40 percent are typical.³
- The source parameters used to model emission sources add uncertainty. For all emission sources, the source parameters used source-specific, recommended as defaults, or expected to produce more conservative results. Discrepancies might exist in actual emissions characteristics of an emission source and its representation in the dispersion model.
- The exposure duration estimates do not consider that people do not usually reside at the same location for 30 years and that other exposures (i.e., school children) are also of much shorter durations than was assumed in this HRA. This exposure duration is a highly conservative assumption, since most people do not remain at home all day and on average residents change residences every 11 to 12 years. In addition, this assumption adopts that residents are experiencing outdoor concentrations for the entire exposure period.
- For the risk and hazards calculations as well as the cumulative health impact, numerous assumptions must be made in order to estimate human exposure to pollutants. These assumptions include parameters such as breathing rates, exposure time and frequency, exposure duration, and human activity patterns. While a mean value derived from scientifically defensible studies is the best estimate of central tendency, most of the exposure variables used in this HRA are high-end estimates. The combination of several high-end estimates used as exposure parameters may substantially overestimate pollutant intake. The excess lifetime cancer risks calculated in this HRA are therefore likely to be higher than may be required to be protective of public health.
- The Cal/EPA cancer potency factor for DPM was used to estimate cancer risks associated with exposure to DPM emissions from construction activities. However, the cancer potency factor derived by Cal/EPA for DPM is highly uncertain in both the estimation of response and dose. In the past, due to inadequate animal test data and epidemiology data on diesel exhaust, the International Agency for Research on Cancer (IARC), a branch of the World Health Organization, had classified DPM as Probably Carcinogenic to Humans (Group 2); the USEPA had also concluded that the existing data did not provide an adequate basis for quantitative risk assessment.⁴ However, based on two recent scientific studies,⁵ IARC recently re-classified DPM

³ US Environmental Protection Agency, *Guideline on Air Quality Models (Revised)*, 40 Code of Federal Regulations, Part 51, Appendix W, November 2005, https://www3.epa.gov/scram001/guidance/guide/appw_05.pdf

⁴ US Environmental Protection Agency, *Health Assessment Document for Diesel Engine Exhaust*, May 2002, https://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=29060

as Carcinogenic to Humans to Group 1,⁶ which means that the agency has determined that there is “sufficient evidence of carcinogenicity” of a substance in humans and represents the strongest weight-of-evidence rating in IARC’s carcinogen classification scheme. This determination by the IARC may provide additional impetus for the USEPA to identify a quantitative dose-response relationship between exposure to DPM and cancer.

In summary, the estimated health impacts are based primarily on a series of conservative assumptions related to predicted environmental concentrations, exposure, and chemical toxicity. The use of conservative assumptions tends to produce upper-bound estimates of risk. BAAQMD acknowledges this uncertainty by stating: “the methods used [to estimate risk] are conservative, meaning that the real risks from the source may be lower than the calculations, but it is unlikely that they will be higher.” The USEPA notes that the conservative assumptions used in a HRA are intended to assure that the estimated risks do not underestimate the actual risks posed by a site and that the estimated risks do not necessarily represent actual risks experienced by populations at or near a site.⁷

HAZARDS IDENTIFICATION

California Air Resources Board (CARB) has developed a list of TAC, where a TAC is “an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health (California Health and Safety Code Section 39655). All USEPA hazardous air pollutants are TAC. CARB administers the Air Toxics “Hot Spots” program under Assembly Bill 2588 “Hot Spots” Information and Assessment Act, which requires periodic local review of facilities which emit TAC. Local air agencies periodically must prioritize stationary sources of TAC and prepare health risk assessments for high-priority sources.

Diesel exhaust is a complex mixture of numerous individual gaseous and particulate compounds emitted from diesel-fueled combustion engines. Diesel particulate matter is formed primarily through the incomplete combustion of diesel fuel. DPM is removed from the atmosphere through physical processes including atmospheric fall-out and washout by rain. Humans can be exposed to airborne DPM by deposition on water, soil, and vegetation; although the main pathway of exposure is inhalation. Cal/EPA has concluded that potential cancer risk from inhalation exposure to whole diesel exhaust outweigh the multi-pathway cancer risk from the speciated components.

In August 1998, the CARB identified DPM as an air toxic. CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel- Fueled Engines and Vehicles* and *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines* and approved these documents on

⁵ Attfield MD, Schleiff PL, Lubin JH, Blair A, Stewart PA, Vermeulen R, Coble JB, Silverman DT, *The Diesel Exhaust in Miners Study: A Nested Case-Control Study of Lung Cancer and Diesel Exhaust*, June 2012, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3369553/>

⁶ International Agency for Research on Cancer, *Diesel Engine Exhaust Carcinogenic*, June 2012, https://www.iarc.fr/en/media-centre/pr/2012/pdfs/pr213_E.pdf

⁷ US Environmental Protection Agency, *Risk Assessment Guidance for Superfund Human Health Risk Assessment*, December 1989, https://www.epa.gov/sites/production/files/2015-09/documents/rags_a.pdf

September 28, 2000.^{8 9} The documents represent proposals to reduce DPM emissions, with the goal of reducing emissions and the associated health risk by 75 percent in 2010 and by 85 percent in 2020. The program aimed to require the use of state-of-the-art catalyzed DPM filters and ultra-low-sulfur diesel fuel.

In 2001, CARB assessed the state-wide health risks from exposure to diesel exhaust and to other toxic air contaminants. It is difficult to distinguish the health risks of diesel emissions from those of other air toxics, since diesel exhaust contains approximately 40 different TAC. The CARB study detected diesel exhaust by using ambient air carbon soot measurements as a surrogate for diesel emissions. The study reported that the state-wide cancer risk from exposure to diesel exhaust was about 540 per million population as compared to a total risk for exposure to all ambient air toxics of 760 per million. This estimate, which accounts for about 70 percent of the total risk from TAC, included both urban and rural areas in the state. The estimate can also be considered an average worst-case for the state, since it assumes constant exposure to outdoor concentrations of diesel exhaust and does not account for expected lower concentrations indoors, where most of time is spent. DPM is estimated to increase statewide cancer risk by 520 cancers per million residents exposed over a lifetime.¹⁰

Exposure to DPM results in a greater incidence of chronic non-cancer health effects, such as cough, labored breathing, chest tightness, wheezing, and bronchitis. Individuals particularly vulnerable to DPM are children, whose lung tissue is still developing, the elderly and people with illnesses who may have other serious health problems that can be aggravated by exposure to DPM. In general, children are more vulnerable than adults to air pollutants because they have higher inhalation rates, narrower airways, and less mature immune systems. In addition, children with allergies may have an enhanced allergic response when exposed to diesel exhaust.

EXPOSURE ASSESSMENT

Dispersion is the process by which atmospheric pollutants disseminate due to wind and vertical stability. The results of a dispersion analysis are used to assess pollutant concentrations at or near an emission source. The results of an analysis allow predicted concentrations of pollutants to be compared directly to air quality standards and other criteria such as health risks based on modeled concentrations.

A rising pollutant plume reacts with the environment in several ways before it levels off. First, the plume's own turbulence interacts with atmospheric turbulence to entrain ambient air. This mixing process reduces and eventually eliminates the density and momentum differences that cause the plume to rise. Second, the wind transports the plume during its rise and entrainment process. Higher winds mix the plume more rapidly, resulting in a lower final rise. Third, the plume interacts with the vertical temperature stratification of the atmosphere, rising as a result of buoyancy in the unstable-to-neutrally

⁸ California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000, <http://www.arb.ca.gov/diesel/documents/rpfinal.pdf>

⁹ California Air Resources Board, *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines*, October 2000, <https://www.arb.ca.gov/diesel/documents/rmgFinal.pdf>

¹⁰ California Air Resources Board, *Summary: Diesel Particulate Matter Health Impacts*, April 12, 2016, https://www.arb.ca.gov/research/diesel/diesel-health_summ.htm

stratified mixed layer. However, after the plume encounters the mixing lid and the stably stratified air above, its vertical motion is dampened.

Molecules of gas or small particles injected into the atmosphere will separate from each other as they are acted on by turbulent eddies. The Gaussian mathematical model such as AERMOD simulates the dispersion of the gas or particles within the atmosphere. The formulation of the Gaussian model is based on the following assumptions:

- The predictions are not time-dependent (all conditions remain unchanged with time)
- The wind speed and direction are uniform, both horizontally and vertically, throughout the region of concern
- The rate of diffusion is not a function of position
- Diffusion in the direction of the transporting wind is negligible when compared to the transport flow

Dispersion Modeling Approach

Air dispersion modeling was performed to estimate the downwind dispersion of DPM exhaust emissions resulting from construction activities. The following sections present the fundamental components of an air dispersion modeling analysis including air dispersion model selection and options, receptor locations, meteorological data, and source exhaust parameters.

Model Selection and Options

AERMOD (Version 22112)¹¹ was used for the dispersion analysis. AERMOD is the USEPA preferred atmospheric dispersion modeling system for general industrial sources. The model can simulate point, area, volume, and line sources. AERMOD is the appropriate model for this analysis based on the coverage of simple, intermediate, and complex terrain. It also predicts both short-term and long-term (annual) average concentrations. The model was executed using the regulatory default options (stack-tip downwash, buoyancy-induced dispersion, and final plume rise), default wind speed profile categories, default potential temperature gradients, and assuming no pollutant decay.

The selection of the appropriate dispersion coefficients depends on the land use within three kilometers (km) of the project site. The types of land use were based on the classification method defined by Auer (1978); using pertinent United States Geological Survey (USGS) 1:24,000 scale (7.5 minute) topographic maps of the area. If the Auer land use types of heavy industrial, light-to-moderate industrial, commercial, and compact residential account for 50 percent or more of the total area, the USEPA *Guideline on Air Quality Models*¹² recommends using urban dispersion coefficients; otherwise, the appropriate rural coefficients can be used. Based on observation of the area surrounding the project

¹¹ US Environmental Protection Agency, AERMOD Modeling System, <https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models>

¹² US Environmental Protection Agency, *Guideline on Air Quality Models (Revised)*, 40 Code of Federal Regulations, Part 51, Appendix W, November 2005, https://www3.epa.gov/scram001/guidance/guide/appw_05.pdf

site, rural (urban is only designated within dense city centers such as downtown San Francisco) dispersion coefficients were applied within AERMOD.

Receptor Locations

Some receptors are considered more sensitive to air pollutants than others, because of preexisting health problems, proximity to the emissions source, or duration of exposure to air pollutants. Land uses such as primary and secondary schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because the very young, the old, and the infirm are more susceptible to respiratory infections and other air quality-related health problems than the general public. Residential areas are also considered sensitive to poor air quality because people in residential areas are often at home for extended periods. Recreational land uses are moderately sensitive to air pollution because vigorous exercise associated with recreation places having a high demand on respiratory system function.

Existing residences located within 1,000 feet of the project site were modeled as sensitive receptors to estimate health impacts due to proposed construction. **Figure B-1** displays the sensitive receptors within 1,000 feet of the project site. The sensitive receptors include residences, school, assisted living facilities, and day care.

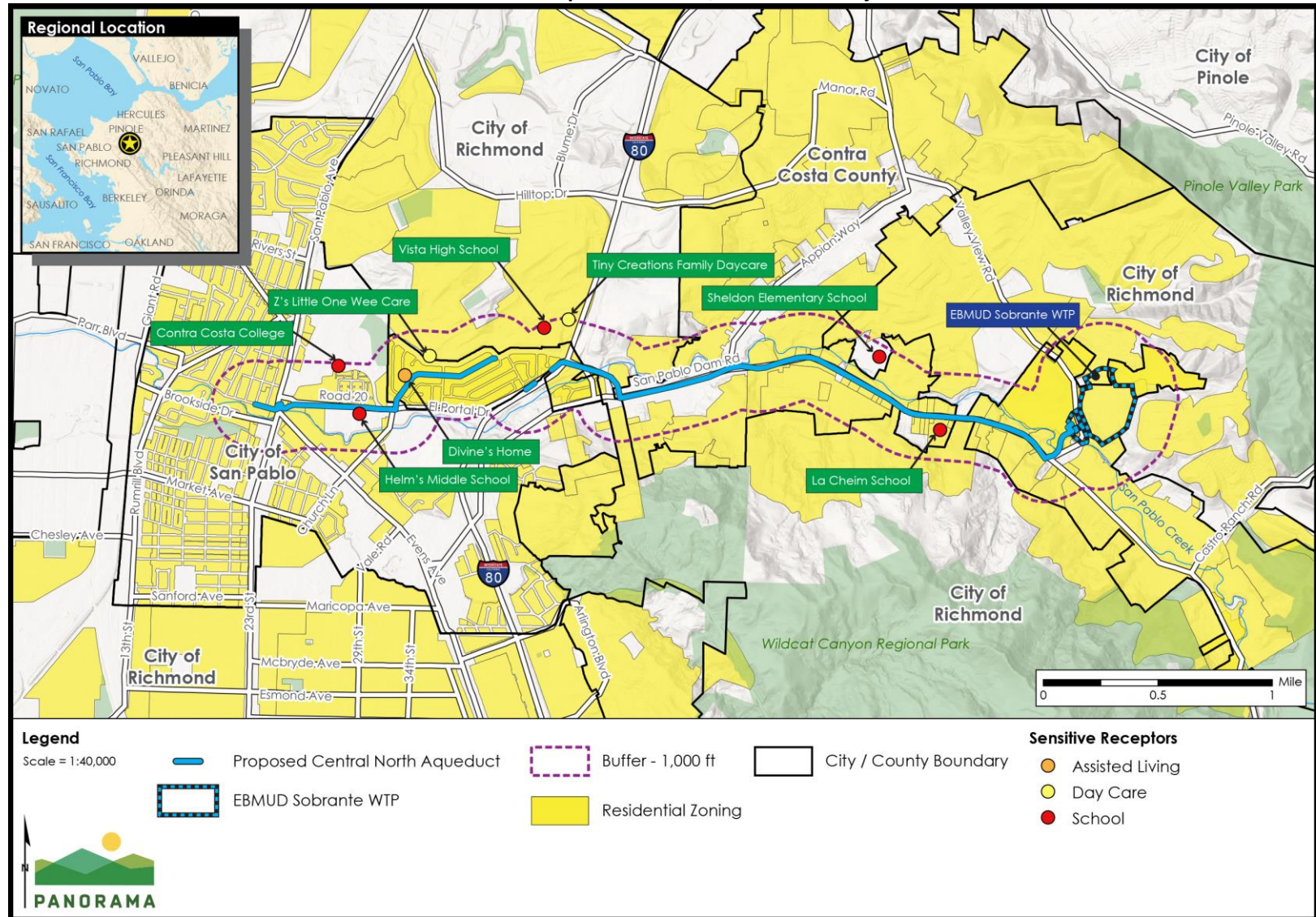
The HRA was conducted for the SOWTP and the trenchless pipeline installation just to the southwest of the plant. The HRA was not conducted along the remaining pipeline installation because although there are sensitive receptors within the route, the construction activities would occur less than two months at any one location and thus the exposure duration would be limited.

Figure B-2 displays the location of the sensitive receptors used in this HRA within 1,000 feet of the SOWTP and the trenchless pipeline installation. Receptors were placed at a height of 1.8 meters (typical breathing height). There are numerous residences within 1,000 feet of the SOWTP and the trenchless pipeline installation. No school, assisted living facilities, and day care are located within 1,000 feet of the SOWTP and the trenchless pipeline installation. Terrain elevations for receptor locations were used based on available USGS information for the area. During Phase 1, the maximum concentrations would occur at a residential receptor (also known as the maximum exposed individual or MEI) to the northwest of the project along Amend Road. During Phase 2, the maximum concentrations would occur at a residential receptor to the northeast of the project along Amend Road.

Meteorological Data

Hourly meteorological data from University of California at Richmond Field Station (surface data), located approximately five miles to the north-northeast of the proposed project, and Oakland International Airport (upper air) were used in the dispersion modeling analysis. **Figure B-3** displays the annual wind rose. Wind directions are predominantly from the south-southwest with a low frequency of calm wind speed conditions (less than one percent), as shown in **Figure B-4**. The average annual wind speed is 10.6 miles per hour (4.8 meters per second).

Figure B-1
Sensitive Receptors Within 1,000 Feet of Project



The map displays the San Pablo Creek Watershed with a distribution of 1,000 trees marked by green dots. Key features include:

- Residential Areas:** Labeled with street names such as Valley View Road, Greenwood Avenue, Heavens Ridge Lane, and others.
- Water Treatment Plant:** The Sobrante Water Treatment Plant is centrally located.
- Waterways:** San Pablo Creek flows through the watershed, with tributaries like San Pablo Creek and Spanish Trail Creek.
- Parks and Trails:** Rain Cloud Park and Spanish Trail are shown.
- Other Landmarks:** De Anza Senior High School is located in the upper left, and the Richmond area is visible on the right.

Figure B-3
Windrose for University of California at Richmond Field Station

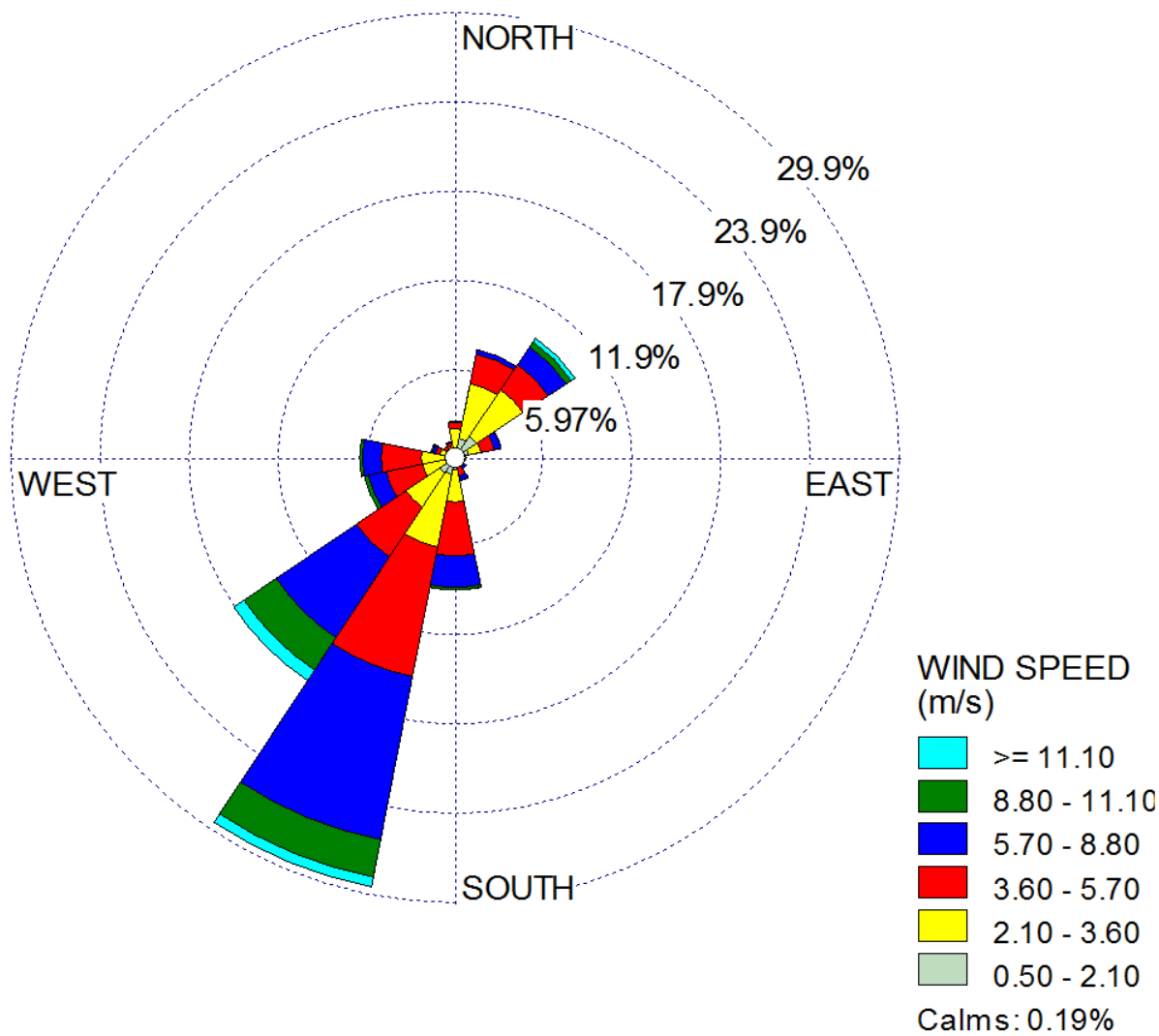
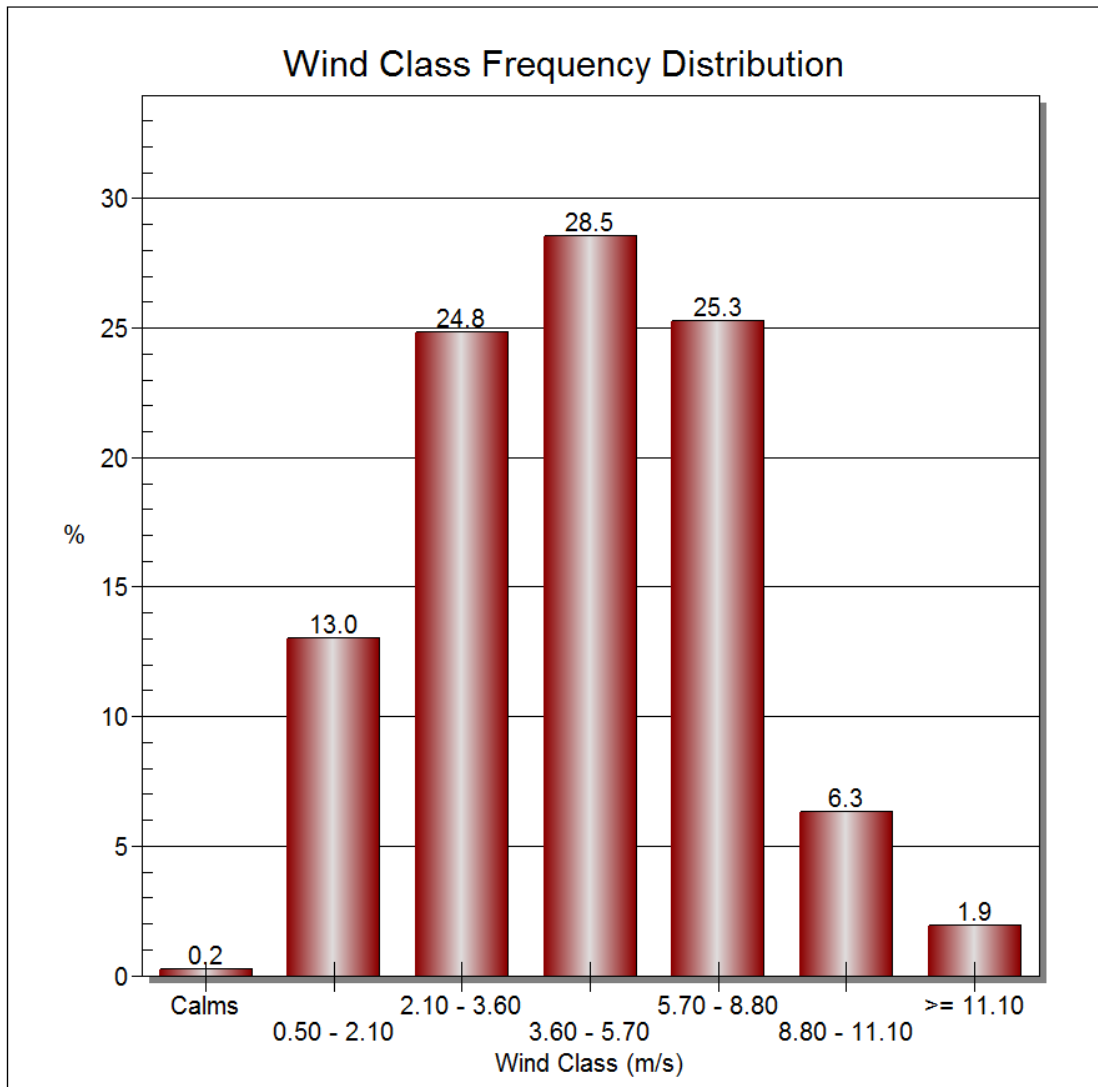


Figure B-4
Wind Speed Distribution for University of California at Richmond Field Station



Source Release Characteristics

Construction equipment activities were treated as an area source. The release height of the off-road equipment exhaust was 5.0 meters (16.4 feet) and an initial vertical dimension of 1.4 meters (4.6 feet), which reflects the height of the equipment plus an additional height of the exhaust plume above the exhaust point to account for plume rise due to buoyancy and momentum. Fugitive dust-generating activities were treated as an area source. The release height of the fugitive dust was 0.0 meters (0.0 feet) and an initial vertical dimension of 1.0 meter (3.3 feet). Haul trucks were treated as a line source (i.e., volume sources placed at regular intervals) located along an access road. The haul trucks were assigned a release height of 5.0 meters (16.4 feet) and an initial vertical dimension of 1.4 meters (4.6 feet), which accounts for dispersion from the movement of vehicles.^{13 14}

Construction activities would be expected to occur Monday through Friday (with occasional Saturday) from 7:30 am through 5:30 pm (with occasional evening/nighttime work). Terrain elevations for emission source locations were used based on available USGS information for the area. AERMAP (Version 18081)¹⁵ was used to develop the terrain elevations.

An operational profile, which is comprised of temporal factors, was used to describe the relationship of one period to another period of time (i.e., the relationship of the activity during one-hour to the activity during a 24-hour period). In AERMOD, temporal factors are applied to represent varying levels of activity as a fraction of a peak period. The use of temporal factors gives the model the ability to more accurately reflect real world conditions during an entire year.

To represent construction activities throughout the entire calendar year, hour-of-day, day-of-week, and month-of-year operational profiles were used in the HRA. These profiles were used by AERMOD in its dispersion mode to calculate concentrations for each hour of the evaluated years at each receptor location. **Table B-1** presents the operational profiles/

¹³ While haul truck emissions contribute substantially to overall project emissions, they are spread over many miles. Hence, the portion of trucking emissions that would impact one receptor is much smaller than the emissions that the clustered off-road activity at the project site would impact a receptor near the site. For example, the DPM emissions from truck travel within 1,000 feet of the project are less than one percent of the total off-road DPM emissions.

¹⁴ South Coast Air Quality Management District, Final Localized Significance Threshold Methodology. July 2008, <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2>

¹⁵ US Environmental Protection Agency, AERMAP, <https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models>

Table B-1
Construction Operational Profiles

Month	Phase 1	Phase 2	Phase 2 Mod
January	0.66	0.90	0.25
February	0.82	1.00	0.03
March	0.89	0.56	0.94
April	0.59	0.64	0.27
May	0.47	0.43	0.16
June	0.48	0.58	0.17
July	0.83	0.78	0.72
August	1.00	0.56	1.00
September	0.82	0.74	0.86
October	0.77	0.55	0.37
November	0.81	0.36	0.38
December	0.80	0.99	0.82

Source: CARB OFFROAD Emissions Model and Sobrante Water Treatment Plant Constructability Report Technical Memorandum (Brown and Caldwell, October/November, 2021 with Revisions August, 2022).

EXPOSURE PARAMETERS

This HRA was conducted following methodologies in OEHHHA's *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*.¹⁶ This was accomplished by applying the estimated concentrations at the receptors analyzed to the established cancer risk estimates and acceptable reference concentrations for non-cancer health effects.

OEHHHA's revisions to its *Guidance Manual* were primarily designed to ensure that the greater sensitivity of children to cancer and other health risks is reflected in HRAs. For example, OEHHHA now recommends that risks be analyzed separately for multiple age groups, focusing especially on young children and teenagers, rather than the past practice of analyzing risks to the general population, without distinction by age. OEHHHA also now recommends that statistical "age sensitivity factors" be incorporated into an HRA, and that children's relatively high breathing rates be accounted for. On the other hand, the *Guidance Manual* revisions also include some changes that would reduce calculated health risks. For example, under the former guidance, OEHHHA recommended that residential cancer risks be assessed by assuming 70 years of exposure at a residential receptor; under the *Guidance Manual*, this assumption is lessened to 30 years.

OEHHHA has developed exposure factors (e.g., daily breathing rates) for six age groups including the last trimester to birth, birth to 2 years, 2 to 9 years, 2 to 16 years, 16 to 30 years, and 16 to 70 years. These age bins allow for more refined exposure information to be used when estimating exposure and the potential for developing cancer over a lifetime. This means that exposure variates are needed for the third trimester, ages zero to less than two, ages two to less than nine, ages two to less than 16, ages 16

¹⁶ Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, March 6, 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html

to less than 30, and ages 16 to 70. Residential receptors utilize the 95th percentile breathing rate values. The breathing rates are age-specific and are 1,090 liters per kilogram-day for ages less than 2 years, 745 liters per kilogram-day for ages 2 to 16 years, 335 liters per kilogram-day for ages 16 to 30 years, and 290 liters per kilogram-day for ages 30 to 70 years. A school child breathing rate is 520 liters per kilogram-day and an off-site worker breathing rate is 230 liters per kilogram-day.

OEHHA developed age sensitivity factors (ASF) to consider the increased sensitivity to carcinogens during early-in-life exposures. OEHHA recommends that cancer risks be weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to 2 years of age, and by a factor of 3 for exposures from 2 years through 15 years of age.

Based on OEHHA recommendations, the cancer risk to residential receptors assumes exposure occurs 24 hours per day for 350 days per year while accounting for a percentage of time at home. OEHHA evaluated information from activity pattern databases to estimate the fraction of time at home (FAH) during the day. This information was used to adjust exposure duration and cancer risk based on the assumption that a person is not present at home continuously for 24 hours and therefore exposure to emissions is not occurring when a person is away from their home. In general, the FAH factors are age-specific and are 0.85 for ages less than 2 years, 0.72 for ages 2 to 16 years, and 0.73 for ages 30 to 70 years.

OEHHA has decreased the exposure duration currently being used for estimating cancer risk at the maximum exposed individual resident from 70 years to 30 years. This is based on studies showing that 30 years is a reasonable estimate of the 90th to 95th percentile of residency duration in the population. Additionally, OEHHA recommends using the 9 and 70-year exposure duration to represent the potential impacts over the range of residency periods.

Given the exposure durations of less than 24 hours, sensitive recreational receptors were evaluated for acute impacts only. Based on OEHHA recommendations, for children at school sites, exposure is assumed to occur 10 hours per day for 180 days (or 36 weeks) per year. Cancer risk estimates for children at school sites are calculated based on 9-year exposure duration. School sites also include teachers and other adult staff which are treated as off-site workers.

RISK CHARACTERIZATION

Cancer risk is defined as the lifetime probability of developing cancer from exposure to carcinogenic substances. Cancer risks are expressed as the chance in one million of getting cancer (i.e., number of cancer cases among one million people exposed). The cancer risks are assumed to occur exclusively through the inhalation pathway. The cancer risk can be estimated by using the cancer potency factor (milligrams per kilogram of body weight per day [mg/kg-day]), the 30-year annual average concentration (microgram per cubic meter [$\mu\text{g}/\text{m}^3$]), and the lifetime exposure adjustment.

Following guidelines established by OEHHA, the incremental cancer risks attributable to the proposed project were calculated by applying exposure parameters to modeled DPM concentrations in order to determine the inhalation dose (mg/kg-day) or the amount of pollutants inhaled per body weight mass per day. The cancer risks occur exclusively through the inhalation pathway; therefore, the cancer risks can be estimated from the following equation:

$$\text{Dose-inh} = \frac{C_{\text{air}} * \{DBR\} * A * ASF * FAH * EF * ED * 10^{-6}}{AT}$$

where:

Dose-inh	= Dose of the toxic substance through inhalation in mg/kg-day
10^{-6}	= Micrograms to milligrams conversion, Liters to cubic meters conversion
C_{air}	= Concentration in air in microgram (μg)/cubic meter (m^3)
{DBR}	= Daily breathing rate in liter (L)/kg body weight – day
A	= Inhalation absorption factor, 1.0
ASF	= Age Sensitivity Factor
EF	= Exposure frequency (days/year)
ED	= Exposure duration (years)
FAH	= Fraction of Time at Home
AT	= Averaging time period over which exposure is averaged in days (25,550 days for a 70-year cancer risk)

To determine incremental cancer risk, the estimated inhalation dose attributed to the proposed project was multiplied by the cancer potency slope factor (cancer risk per mg/kg-day). The cancer potency slope factor is the upper bound on the increased cancer risk from a lifetime exposure to a pollutant. These slope factors are based on epidemiological studies and are different values for different pollutants. This allows the estimated inhalation dose to be equated to a cancer risk.

Non-cancer adverse health impacts, acute (short-term) and chronic (long-term), are measured against a hazard index (HI), which is defined as the ratio of the predicted incremental exposure concentration from the proposed project to a published reference exposure level (REL) that could cause adverse health effects as established by OEHHA. The ratio (referred to as the Hazard Quotient [HQ]) of each non-carcinogenic substance that affects a certain organ system is added to produce an overall HI for that organ system. The overall HI is calculated as the total for each organ system. If the overall HI for the highest-impacted organ system is greater than one, then the impact is significant.

The HI is an expression used for the potential for non-cancer health effects. The relationship for the non-cancer health effects is given by the annual concentration (in $\mu\text{g}/\text{m}^3$) and the REL (in $\mu\text{g}/\text{m}^3$). The acute hazard index was determined using the “simple” concurrent maximum approach, which tends to be conservative (i.e., overpredicts).

The relationship for the non-cancer health effects is given by the following equation:

$$HI = C/REL$$

where:

HI	= Hazard index; an expression of the potential for non-cancer health effects.
C	= Annual average concentration ($\mu\text{g}/\text{m}^3$) during the 70-year exposure period.
REL	= Concentration at which no adverse health effects are anticipated.

The chronic REL for DPM was established by the California OEHHA as 5 µg/m³.¹⁷ There is no acute REL for DPM.

¹⁷ Office of Environmental Health Hazards Assessment - Acute, 8-hour, and Chronic Reference Exposure Levels, June 2014, <http://www.oehha.ca.gov/air/allrels.html>

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of time 0<2 Years
 0.72 fraction of time 2<16 Years
 0.73 fraction of time 16<70 Years

Project: EBMUD Sobrante Pipeline
 Date: May 8, 2023
 Condition: Unmitigated
 Receptor: Existing Residence
 Year: 2035

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2035	0.01	0.08	1,090	10.0	0.85	1.84	0.08 Maximum Annual PM2.5 Concentration (ug/m3) 0.3 Significance Threshold (ug/m3) No Significant?
2	2036			1,090	10.0	0.85		
3	2037			745	4.75	0.72		
4	2038			745	3.00	0.72		0.00 Chronic Hazard Impact 1 Significance Threshold No Significant?
5	2039			745	3.00	0.72		
6	2040			745	3.00	0.72		
7	2041			745	3.00	0.72		
8	2042			745	3.00	0.72		1.84 Cancer Risk (Child) 10 Significance Threshold No Significant?
9	2043			745	3.00	0.72		
10	2044			745	3.00	0.72		
11	2045			745	3.00	0.72		
12	2046			745	3.00	0.72		0.08 Cancer Risk (Adult) 10 Significance Threshold No Significant?
13	2047			745	3.00	0.72		
14	2048			745	3.00	0.72		
15	2049			745	3.00	0.72		
16	2050			745	3.00	0.72		
17	2051			335	1.70	0.73		
18	2052			335	1.00	0.73		
19	2053			335	1.00	0.73		
20	2054			335	1.00	0.73		
21	2055			335	1.00	0.73		
22	2056			335	1.00	0.73		
23	2057			335	1.00	0.73		
24	2058			335	1.00	0.73		
25	2059			335	1.00	0.73		
26	2060			335	1.00	0.73		
27	2061			335	1.00	0.73		
28	2062			335	1.00	0.73		
29	2063			335	1.00	0.73		
30	2064			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of : 0<2 Years
 0.72 fraction of : 2<16 Years
 0.73 fraction of : 16<70 Years

Project: EBMUD Sobrante Pipeline
 Date: May 8, 2023
 Condition: Mitigated
 Receptor: Existing Residence
 Year: 2035

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2035	0.02	0.04	1,090	10.0	0.85	2.12	0.04 Maximum Annual PM2.5 Concentration (ug/m3)
2	2036			1,090	10.0	0.85		0.3 Significance Threshold (ug/m3)
3	2037			745	4.75	0.72		No Significant?
4	2038			745	3.00	0.72		
5	2039			745	3.00	0.72		0.00 Chronic Hazard Impact
6	2040			745	3.00	0.72		1 Significance Threshold
7	2041			745	3.00	0.72		No Significant?
8	2042			745	3.00	0.72		
9	2043			745	3.00	0.72		2.12 Cancer Risk (Child)
10	2044			745	3.00	0.72		10 Significance Threshold
11	2045			745	3.00	0.72		No Significant?
12	2046			745	3.00	0.72		
13	2047			745	3.00	0.72		0.10 Cancer Risk (Adult)
14	2048			745	3.00	0.72		10 Significance Threshold
15	2049			745	3.00	0.72		No Significant?
16	2050			745	3.00	0.72		
17	2051			335	1.70	0.73		
18	2052			335	1.00	0.73		
19	2053			335	1.00	0.73		
20	2054			335	1.00	0.73		
21	2055			335	1.00	0.73		
22	2056			335	1.00	0.73		
23	2057			335	1.00	0.73		
24	2058			335	1.00	0.73		
25	2059			335	1.00	0.73		
26	2060			335	1.00	0.73		
27	2061			335	1.00	0.73		
28	2062			335	1.00	0.73		
29	2063			335	1.00	0.73		
30	2064			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of time 0<2 Years
 0.72 fraction of time 2<16 Years
 0.73 fraction of time 16<70 Years

Project: EBMUD Sobrante WTP Phase 2 Modification
 Date: May 8, 2023
 Condition: Unmitigated
 Receptor: Existing Residence
 Year: 2026

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2026	-	-	1,090	10.0	0.85	-	0.33 Maximum Annual PM2.5 Concentration (ug/m3)
2	2027	-	-	1,090	10.0	0.85	-	0.3 Significance Threshold (ug/m3)
3	2028	-	-	745	4.75	0.72	-	Yes Significant?
4	2029	-	-	745	3.00	0.72	-	0.00 Chronic Hazard Impact
5	2030	-	-	745	3.00	0.72	-	1 Significance Threshold
6	2031	-	-	745	3.00	0.72	-	No Significant?
7	2032	-	-	745	3.00	0.72	-	
8	2033	-	-	745	3.00	0.72	-	- Cancer Risk (Child)
9	2034	-	-	745	3.00	0.72	-	10 Significance Threshold
10	2035	0.01	0.28	745	3.00	0.72	0.13	No Significant?
11	2036	0.00	0.27	745	3.00	0.72	0.01	
12	2037	0.00	0.33	745	3.00	0.72	0.04	0.05 Cancer Risk (Adult)
13	2038	-	-	745	3.00	0.72	-	10 Significance Threshold
14	2039	-	-	745	3.00	0.72	-	No Significant?
15	2040	-	-	745	3.00	0.72	-	
16	2041	-	-	745	3.00	0.72	-	
17	2042	-	-	335	1.70	0.73	-	
18	2043	-	-	335	1.00	0.73	-	
19	2044	-	-	335	1.00	0.73	-	
20	2045	-	-	335	1.00	0.73	-	
21	2046	-	-	335	1.00	0.73	-	
22	2047	-	-	335	1.00	0.73	-	
23	2048	-	-	335	1.00	0.73	-	
24	2049	-	-	335	1.00	0.73	-	
25	2050	-	-	335	1.00	0.73	-	
26	2051	-	-	335	1.00	0.73	-	
27	2052	-	-	335	1.00	0.73	-	
28	2053	-	-	335	1.00	0.73	-	
29	2054	-	-	335	1.00	0.73	-	
30	2055	-	-	335	1.00	0.73	-	

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of 0<2 Years
 0.72 fraction of 2<16 Years
 0.73 fraction of 16<70 Years

Project: EBMUD Sobrante WTP Phase 2 Modification
 Date: May 8, 2023
 Condition: Unmitigated
 Receptor: Existing Residence
 Year: 2027

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2027	-	-	1,090	10.0	0.85	-	0.33 Maximum Annual PM2.5 Concentration (ug/m3)
2	2028	-	-	1,090	10.0	0.85	-	0.3 Significance Threshold (ug/m3)
3	2029	-	-	745	4.75	0.72	-	Yes Significant?
4	2030	-	-	745	3.00	0.72	-	0.00 Chronic Hazard Impact
5	2031	-	-	745	3.00	0.72	-	1 Significance Threshold
6	2032	-	-	745	3.00	0.72	-	No Significant?
7	2033	-	-	745	3.00	0.72	-	
8	2034	-	-	745	3.00	0.72	-	0.13 Cancer Risk (Child)
9	2035	0.01	0.28	745	3.00	0.72	0.13	10 Significance Threshold
10	2036	0.00	0.27	745	3.00	0.72	0.01	No Significant?
11	2037	0.00	0.33	745	3.00	0.72	0.04	
12	2038	-	-	745	3.00	0.72	-	0.05 Cancer Risk (Adult)
13	2039	-	-	745	3.00	0.72	-	10 Significance Threshold
14	2040	-	-	745	3.00	0.72	-	No Significant?
15	2041	-	-	745	3.00	0.72	-	
16	2042	-	-	745	3.00	0.72	-	
17	2043	-	-	335	1.70	0.73	-	
18	2044	-	-	335	1.00	0.73	-	
19	2045	-	-	335	1.00	0.73	-	
20	2046	-	-	335	1.00	0.73	-	
21	2047	-	-	335	1.00	0.73	-	
22	2048	-	-	335	1.00	0.73	-	
23	2049	-	-	335	1.00	0.73	-	
24	2050	-	-	335	1.00	0.73	-	
25	2051	-	-	335	1.00	0.73	-	
26	2052	-	-	335	1.00	0.73	-	
27	2053	-	-	335	1.00	0.73	-	
28	2054	-	-	335	1.00	0.73	-	
29	2055	-	-	335	1.00	0.73	-	
30	2056	-	-	335	1.00	0.73	-	

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of 0<2 Years
 0.72 fraction of 2<16 Years
 0.73 fraction of 16<70 Years

Project: EBMUD Sobrante WTP Phase 2 Modification
 Date: May 8, 2023
 Condition: Unmitigated
 Receptor: Existing Residence
 Year: 2028

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2028	-	-	1,090	10.0	0.85	-	0.33 Maximum Annual PM2.5 Concentration (ug/m3)
2	2029	-	-	1,090	10.0	0.85	-	0.3 Significance Threshold (ug/m3)
3	2030	-	-	745	4.75	0.72	-	Yes Significant?
4	2031			745	3.00	0.72		0.00 Chronic Hazard Impact
5	2032			745	3.00	0.72		1 Significance Threshold
6	2033			745	3.00	0.72		No Significant?
7	2034			745	3.00	0.72		
8	2035	0.01	0.28	745	3.00	0.72	0.13	0.14 Cancer Risk (Child)
9	2036	0.00	0.27	745	3.00	0.72	0.01	10 Significance Threshold
10	2037	0.00	0.33	745	3.00	0.72	0.04	No Significant?
11	2038	-	-	745	3.00	0.72	-	
12	2039			745	3.00	0.72		0.05 Cancer Risk (Adult)
13	2040			745	3.00	0.72		10 Significance Threshold
14	2041			745	3.00	0.72		No Significant?
15	2042			745	3.00	0.72		
16	2043			745	3.00	0.72		
17	2044			335	1.70	0.73		
18	2045			335	1.00	0.73		
19	2046			335	1.00	0.73		
20	2047			335	1.00	0.73		
21	2048			335	1.00	0.73		
22	2049			335	1.00	0.73		
23	2050			335	1.00	0.73		
24	2051			335	1.00	0.73		
25	2052			335	1.00	0.73		
26	2053			335	1.00	0.73		
27	2054			335	1.00	0.73		
28	2055			335	1.00	0.73		
29	2056			335	1.00	0.73		
30	2057			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of time 0<2 Years
 0.72 fraction of time 2<16 Years
 0.73 fraction of time 16<70 Years

Project: EBMUD Sobrante WTP Phase 2 Modification
 Date: May 8, 2023
 Condition: Unmitigated
 Receptor: Existing Residence
 Year: 2029

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2029	-	-	1,090	10.0	0.85	-	0.33 Maximum Annual PM2.5 Concentration (ug/m3)
2	2030	-	-	1,090	10.0	0.85	-	0.3 Significance Threshold (ug/m3)
3	2031			745	4.75	0.72		Yes Significant?
4	2032			745	3.00	0.72		0.00 Chronic Hazard Impact
5	2033			745	3.00	0.72		1 Significance Threshold
6	2034			745	3.00	0.72		No Significant?
7	2035	0.01	0.28	745	3.00	0.72	0.13	
8	2036	0.00	0.27	745	3.00	0.72	0.01	0.19 Cancer Risk (Child)
9	2037	0.00	0.33	745	3.00	0.72	0.04	10 Significance Threshold
10	2038	-	-	745	3.00	0.72	-	No Significant?
11	2039			745	3.00	0.72		
12	2040			745	3.00	0.72		0.05 Cancer Risk (Adult)
13	2041			745	3.00	0.72		10 Significance Threshold
14	2042			745	3.00	0.72		No Significant?
15	2043			745	3.00	0.72		
16	2044			745	3.00	0.72		
17	2045			335	1.70	0.73		
18	2046			335	1.00	0.73		
19	2047			335	1.00	0.73		
20	2048			335	1.00	0.73		
21	2049			335	1.00	0.73		
22	2050			335	1.00	0.73		
23	2051			335	1.00	0.73		
24	2052			335	1.00	0.73		
25	2053			335	1.00	0.73		
26	2054			335	1.00	0.73		
27	2055			335	1.00	0.73		
28	2056			335	1.00	0.73		
29	2057			335	1.00	0.73		
30	2058			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of : 0<2 Years
 0.72 fraction of : 2<16 Years
 0.73 fraction of : 16<70 Years

Project: EBMUD Sobrante WTP Phase 2 Modification
 Date: May 8, 2023
 Condition: Mitigated
 Receptor: Existing Residence
 Year: 2026

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2026	-	-	1,090	10.0	0.85	-	0.03 Maximum Annual PM2.5 Concentration (ug/m3)
2	2027	-	-	1,090	10.0	0.85	-	0.3 Significance Threshold (ug/m3)
3	2028	-	-	745	4.75	0.72	-	No Significant?
4	2029	-	-	745	3.00	0.72	-	
5	2030	-	-	745	3.00	0.72	-	0.00 Chronic Hazard Impact
6	2031			745	3.00	0.72		1 Significance Threshold
7	2032			745	3.00	0.72		No Significant?
8	2033			745	3.00	0.72		
9	2034			745	3.00	0.72		- Cancer Risk (Child)
10	2035	0.00	0.03	745	3.00	0.72	0.09	10 Significance Threshold
11	2036	0.00	0.03	745	3.00	0.72	0.01	No Significant?
12	2037	0.00	0.03	745	3.00	0.72	0.02	
13	2038	-	-	745	3.00	0.72	-	0.03 Cancer Risk (Adult)
14	2039			745	3.00	0.72		10 Significance Threshold
15	2040			745	3.00	0.72		No Significant?
16	2041			745	3.00	0.72		
17	2042			335	1.70	0.73		
18	2043			335	1.00	0.73		
19	2044			335	1.00	0.73		
20	2045			335	1.00	0.73		
21	2046			335	1.00	0.73		
22	2047			335	1.00	0.73		
23	2048			335	1.00	0.73		
24	2049			335	1.00	0.73		
25	2050			335	1.00	0.73		
26	2051			335	1.00	0.73		
27	2052			335	1.00	0.73		
28	2053			335	1.00	0.73		
29	2054			335	1.00	0.73		
30	2055			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of : 0<2 Years
 0.72 fraction of : 2<16 Years
 0.73 fraction of : 16<70 Years

Project: EBMUD Sobrante WTP Phase 2 Modification
 Date: May 8, 2023
 Condition: Mitigated
 Receptor: Existing Residence
 Year: 2027

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2027	-	-	1,090	10.0	0.85	-	0.03 Maximum Annual PM2.5 Concentration (ug/m3)
2	2028	-	-	1,090	10.0	0.85	-	0.3 Significance Threshold (ug/m3)
3	2029	-	-	745	4.75	0.72	-	No Significant?
4	2030	-	-	745	3.00	0.72	-	0.00 Chronic Hazard Impact
5	2031			745	3.00	0.72		1 Significance Threshold
6	2032			745	3.00	0.72		No Significant?
7	2033			745	3.00	0.72		
8	2034			745	3.00	0.72		0.09 Cancer Risk (Child)
9	2035	0.00	0.03	745	3.00	0.72	0.09	10 Significance Threshold
10	2036	0.00	0.03	745	3.00	0.72	0.01	No Significant?
11	2037	0.00	0.03	745	3.00	0.72	0.02	
12	2038	-	-	745	3.00	0.72	-	0.03 Cancer Risk (Adult)
13	2039			745	3.00	0.72		10 Significance Threshold
14	2040			745	3.00	0.72		No Significant?
15	2041			745	3.00	0.72		
16	2042			745	3.00	0.72		
17	2043			335	1.70	0.73		
18	2044			335	1.00	0.73		
19	2045			335	1.00	0.73		
20	2046			335	1.00	0.73		
21	2047			335	1.00	0.73		
22	2048			335	1.00	0.73		
23	2049			335	1.00	0.73		
24	2050			335	1.00	0.73		
25	2051			335	1.00	0.73		
26	2052			335	1.00	0.73		
27	2053			335	1.00	0.73		
28	2054			335	1.00	0.73		
29	2055			335	1.00	0.73		
30	2056			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of : 0<2 Years
 0.72 fraction of : 2<16 Years
 0.73 fraction of : 16<70 Years

Project: EBMUD Sobrante WTP Phase 2 Modification
 Date: May 8, 2023
 Condition: Mitigated
 Receptor: Existing Residence
 Year: 2028

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2028	-	-	1,090	10.0	0.85	-	0.03 Maximum Annual PM2.5 Concentration (ug/m3)
2	2029	-	-	1,090	10.0	0.85	-	0.3 Significance Threshold (ug/m3)
3	2030	-	-	745	4.75	0.72	-	No Significant?
4	2031			745	3.00	0.72		0.00 Chronic Hazard Impact
5	2032			745	3.00	0.72		1 Significance Threshold
6	2033			745	3.00	0.72		No Significant?
7	2034			745	3.00	0.72		
8	2035	0.00	0.03	745	3.00	0.72	0.09	0.10 Cancer Risk (Child)
9	2036	0.00	0.03	745	3.00	0.72	0.01	10 Significance Threshold
10	2037	0.00	0.03	745	3.00	0.72	0.02	No Significant?
11	2038	-	-	745	3.00	0.72	-	
12	2039			745	3.00	0.72		0.03 Cancer Risk (Adult)
13	2040			745	3.00	0.72		10 Significance Threshold
14	2041			745	3.00	0.72		No Significant?
15	2042			745	3.00	0.72		
16	2043			745	3.00	0.72		
17	2044			335	1.70	0.73		
18	2045			335	1.00	0.73		
19	2046			335	1.00	0.73		
20	2047			335	1.00	0.73		
21	2048			335	1.00	0.73		
22	2049			335	1.00	0.73		
23	2050			335	1.00	0.73		
24	2051			335	1.00	0.73		
25	2052			335	1.00	0.73		
26	2053			335	1.00	0.73		
27	2054			335	1.00	0.73		
28	2055			335	1.00	0.73		
29	2056			335	1.00	0.73		
30	2057			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of : 0<2 Years
 0.72 fraction of : 2<16 Years
 0.73 fraction of : 16<70 Years

Project: EBMUD Sobrante WTP Phase 2 Modification
 Date: May 8, 2023
 Condition: Mitigated
 Receptor: Existing Residence
 Year: 2029

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2029	-	-	1,090	10.0	0.85	-	0.03 Maximum Annual PM2.5 Concentration (ug/m3)
2	2030	-	-	1,090	10.0	0.85	-	0.3 Significance Threshold (ug/m3)
3	2031			745	4.75	0.72		No Significant?
4	2032			745	3.00	0.72		0.00 Chronic Hazard Impact
5	2033			745	3.00	0.72		1 Significance Threshold
6	2034			745	3.00	0.72		No Significant?
7	2035	0.00	0.03	745	3.00	0.72	0.09	
8	2036	0.00	0.03	745	3.00	0.72	0.01	0.12 Cancer Risk (Child)
9	2037	0.00	0.03	745	3.00	0.72	0.02	10 Significance Threshold
10	2038	-	-	745	3.00	0.72	-	No Significant?
11	2039			745	3.00	0.72		
12	2040			745	3.00	0.72		0.03 Cancer Risk (Adult)
13	2041			745	3.00	0.72		10 Significance Threshold
14	2042			745	3.00	0.72		No Significant?
15	2043			745	3.00	0.72		
16	2044			745	3.00	0.72		
17	2045			335	1.70	0.73		
18	2046			335	1.00	0.73		
19	2047			335	1.00	0.73		
20	2048			335	1.00	0.73		
21	2049			335	1.00	0.73		
22	2050			335	1.00	0.73		
23	2051			335	1.00	0.73		
24	2052			335	1.00	0.73		
25	2053			335	1.00	0.73		
26	2054			335	1.00	0.73		
27	2055			335	1.00	0.73		
28	2056			335	1.00	0.73		
29	2057			335	1.00	0.73		
30	2058			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of time 0<2 Years
 0.72 fraction of time 2<16 Years
 0.73 fraction of time 16<70 Years

Project: EBMUD Sobrante WTP
 Date: May 8, 2023
 Condition: Unmitigated
 Receptor: Existing Residence
 Year: 2026

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2026	0.02	0.88	1,090	10.0	0.85	2.61	0.88 Maximum Annual PM2.5 Concentration (ug/m3)
2	2027	0.03	0.46	1,090	10.0	0.85	4.07	0.3 Significance Threshold (ug/m3)
3	2028	0.03	0.46	745	4.75	0.72	1.14	Yes Significant?
4	2029	0.04	0.47	745	3.00	0.72	0.99	0.01 Chronic Hazard Impact
5	2030	0.01	0.53	745	3.00	0.72	0.25	1 Significance Threshold
6	2031			745	3.00	0.72		No Significant?
7	2032			745	3.00	0.72		
8	2033			745	3.00	0.72		9.05 Cancer Risk (Child)
9	2034			745	3.00	0.72		10 Significance Threshold
10	2035	0.00	0.11	745	3.00	0.72	0.02	No Significant?
11	2036	0.01	0.12	745	3.00	0.72	0.14	
12	2037	0.01	0.14	745	3.00	0.72	0.12	0.91 Cancer Risk (Adult)
13	2038	0.01	0.15	745	3.00	0.72	0.12	10 Significance Threshold
14	2039			745	3.00	0.72		No Significant?
15	2040			745	3.00	0.72		
16	2041			745	3.00	0.72		
17	2042			335	1.70	0.73		
18	2043			335	1.00	0.73		
19	2044			335	1.00	0.73		
20	2045			335	1.00	0.73		
21	2046			335	1.00	0.73		
22	2047			335	1.00	0.73		
23	2048			335	1.00	0.73		
24	2049			335	1.00	0.73		
25	2050			335	1.00	0.73		
26	2051			335	1.00	0.73		
27	2052			335	1.00	0.73		
28	2053			335	1.00	0.73		
29	2054			335	1.00	0.73		
30	2055			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of time 0<2 Years
 0.72 fraction of time 2<16 Years
 0.73 fraction of time 16<70 Years

Project: EBMUD Sobrante WTP
 Date: May 8, 2023
 Condition: Unmitigated
 Receptor: Existing Residence
 Year: 2027

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2027	0.03	0.46	1,090	10.0	0.85	4.07	0.53 Maximum Annual PM2.5 Concentration (ug/m3)
2	2028	0.03	0.46	1,090	10.0	0.85	4.16	0.3 Significance Threshold (ug/m3)
3	2029	0.04	0.47	745	4.75	0.72	1.56	Yes Significant?
4	2030	0.01	0.53	745	3.00	0.72	0.25	0.01 Chronic Hazard Impact
5	2031			745	3.00	0.72		1 Significance Threshold
6	2032			745	3.00	0.72		No Significant?
7	2033			745	3.00	0.72		
8	2034			745	3.00	0.72		10.1 Cancer Risk (Child)
9	2035	0.00	0.11	745	3.00	0.72	0.02	10 Significance Threshold
10	2036	0.01	0.12	745	3.00	0.72	0.14	Yes Significant?
11	2037	0.01	0.14	745	3.00	0.72	0.12	
12	2038	0.01	0.15	745	3.00	0.72	0.12	0.79 Cancer Risk (Adult)
13	2039			745	3.00	0.72		10 Significance Threshold
14	2040			745	3.00	0.72		No Significant?
15	2041			745	3.00	0.72		
16	2042			745	3.00	0.72		
17	2043			335	1.70	0.73		
18	2044			335	1.00	0.73		
19	2045			335	1.00	0.73		
20	2046			335	1.00	0.73		
21	2047			335	1.00	0.73		
22	2048			335	1.00	0.73		
23	2049			335	1.00	0.73		
24	2050			335	1.00	0.73		
25	2051			335	1.00	0.73		
26	2052			335	1.00	0.73		
27	2053			335	1.00	0.73		
28	2054			335	1.00	0.73		
29	2055			335	1.00	0.73		
30	2056			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of 0<2 Years
 0.72 fraction of 2<16 Years
 0.73 fraction of 16<70 Years

Project: EBMUD Sobrante WTP
 Date: May 8, 2023
 Condition: Unmitigated
 Receptor: Existing Residence
 Year: 2028

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2028	0.03	0.46	1,090	10.0	0.85	4.16	0.53 Maximum Annual PM2.5 Concentration (ug/m3)
2	2029	0.04	0.47	1,090	10.0	0.85	5.68	0.3 Significance Threshold (ug/m3)
3	2030	0.01	0.53	745	4.75	0.72	0.39	Yes Significant?
4	2031			745	3.00	0.72		0.01 Chronic Hazard Impact
5	2032			745	3.00	0.72		1 Significance Threshold
6	2033			745	3.00	0.72		No Significant?
7	2034			745	3.00	0.72		
8	2035	0.00	0.11	745	3.00	0.72	0.02	10.4 Cancer Risk (Child)
9	2036	0.01	0.12	745	3.00	0.72	0.14	10 Significance Threshold
10	2037	0.01	0.14	745	3.00	0.72	0.12	Yes Significant?
11	2038	0.01	0.15	745	3.00	0.72	0.12	
12	2039			745	3.00	0.72		0.61 Cancer Risk (Adult)
13	2040			745	3.00	0.72		10 Significance Threshold
14	2041			745	3.00	0.72		No Significant?
15	2042			745	3.00	0.72		
16	2043			745	3.00	0.72		
17	2044			335	1.70	0.73		
18	2045			335	1.00	0.73		
19	2046			335	1.00	0.73		
20	2047			335	1.00	0.73		
21	2048			335	1.00	0.73		
22	2049			335	1.00	0.73		
23	2050			335	1.00	0.73		
24	2051			335	1.00	0.73		
25	2052			335	1.00	0.73		
26	2053			335	1.00	0.73		
27	2054			335	1.00	0.73		
28	2055			335	1.00	0.73		
29	2056			335	1.00	0.73		
30	2057			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of time 0<2 Years
 0.72 fraction of time 2<16 Years
 0.73 fraction of time 16<70 Years

Project: EBMUD Sobrante WTP
 Date: May 8, 2023
 Condition: Unmitigated
 Receptor: Existing Residence
 Year: 2029

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2029	0.04	0.47	1,090	10.0	0.85	5.68	0.53 Maximum Annual PM2.5 Concentration (ug/m3)
2	2030	0.01	0.53	1,090	10.0	0.85	1.42	0.3 Significance Threshold (ug/m3)
3	2031			745	4.75	0.72		Yes Significant?
4	2032			745	3.00	0.72		0.01 Chronic Hazard Impact
5	2033			745	3.00	0.72		1 Significance Threshold
6	2034			745	3.00	0.72		No Significant?
7	2035	0.00	0.11	745	3.00	0.72	0.02	
8	2036	0.01	0.12	745	3.00	0.72	0.14	7.38 Cancer Risk (Child)
9	2037	0.01	0.14	745	3.00	0.72	0.12	10 Significance Threshold
10	2038	0.01	0.15	745	3.00	0.72	0.12	No Significant?
11	2039			745	3.00	0.72		
12	2040			745	3.00	0.72		0.42 Cancer Risk (Adult)
13	2041			745	3.00	0.72		10 Significance Threshold
14	2042			745	3.00	0.72		No Significant?
15	2043			745	3.00	0.72		
16	2044			745	3.00	0.72		
17	2045			335	1.70	0.73		
18	2046			335	1.00	0.73		
19	2047			335	1.00	0.73		
20	2048			335	1.00	0.73		
21	2049			335	1.00	0.73		
22	2050			335	1.00	0.73		
23	2051			335	1.00	0.73		
24	2052			335	1.00	0.73		
25	2053			335	1.00	0.73		
26	2054			335	1.00	0.73		
27	2055			335	1.00	0.73		
28	2056			335	1.00	0.73		
29	2057			335	1.00	0.73		
30	2058			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of : 0<2 Years
 0.72 fraction of : 2<16 Years
 0.73 fraction of : 16<70 Years

Project: EBMUD Sobrante WTP
 Date: May 8, 2023
 Condition: Mitigated
 Receptor: Existing Residence
 Year: 2026

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2026	0.01	0.10	1,090	10.0	0.85	1.77	0.10 Maximum Annual PM2.5 Concentration (ug/m3)
2	2027	0.02	0.06	1,090	10.0	0.85	2.87	0.3 Significance Threshold (ug/m3)
3	2028	0.02	0.06	745	4.75	0.72	0.81	No Significant?
4	2029	0.04	0.08	745	3.00	0.72	0.91	0.01 Chronic Hazard Impact
5	2030	0.01	0.06	745	3.00	0.72	0.20	1 Significance Threshold
6	2031			745	3.00	0.72		No Significant?
7	2032			745	3.00	0.72		
8	2033			745	3.00	0.72		6.56 Cancer Risk (Child)
9	2034			745	3.00	0.72		10 Significance Threshold
10	2035	0.00	0.01	745	3.00	0.72	0.01	No Significant?
11	2036	0.00	0.02	745	3.00	0.72	0.11	
12	2037	0.00	0.02	745	3.00	0.72	0.09	0.71 Cancer Risk (Adult)
13	2038	0.00	0.02	745	3.00	0.72	0.11	10 Significance Threshold
14	2039			745	3.00	0.72		No Significant?
15	2040			745	3.00	0.72		
16	2041			745	3.00	0.72		
17	2042			335	1.70	0.73		
18	2043			335	1.00	0.73		
19	2044			335	1.00	0.73		
20	2045			335	1.00	0.73		
21	2046			335	1.00	0.73		
22	2047			335	1.00	0.73		
23	2048			335	1.00	0.73		
24	2049			335	1.00	0.73		
25	2050			335	1.00	0.73		
26	2051			335	1.00	0.73		
27	2052			335	1.00	0.73		
28	2053			335	1.00	0.73		
29	2054			335	1.00	0.73		
30	2055			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of : 0<2 Years
 0.72 fraction of : 2<16 Years
 0.73 fraction of : 16<70 Years

Project: EBMUD Sobrante WTP
 Date: May 8, 2023
 Condition: Mitigated
 Receptor: Existing Residence
 Year: 2027

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2027	0.02	0.06	1,090	10.0	0.85	2.87	0.08 Maximum Annual PM2.5 Concentration (ug/m3)
2	2028	0.02	0.06	1,090	10.0	0.85	2.94	0.3 Significance Threshold (ug/m3)
3	2029	0.04	0.08	745	4.75	0.72	1.44	No Significant?
4	2030	0.01	0.06	745	3.00	0.72	0.20	0.01 Chronic Hazard Impact
5	2031			745	3.00	0.72		1 Significance Threshold
6	2032			745	3.00	0.72		No Significant?
7	2033			745	3.00	0.72		
8	2034			745	3.00	0.72		7.46 Cancer Risk (Child)
9	2035	0.00	0.01	745	3.00	0.72	0.01	10 Significance Threshold
10	2036	0.00	0.02	745	3.00	0.72	0.11	No Significant?
11	2037	0.00	0.02	745	3.00	0.72	0.09	
12	2038	0.00	0.02	745	3.00	0.72	0.11	0.63 Cancer Risk (Adult)
13	2039			745	3.00	0.72		10 Significance Threshold
14	2040			745	3.00	0.72		No Significant?
15	2041			745	3.00	0.72		
16	2042			745	3.00	0.72		
17	2043			335	1.70	0.73		
18	2044			335	1.00	0.73		
19	2045			335	1.00	0.73		
20	2046			335	1.00	0.73		
21	2047			335	1.00	0.73		
22	2048			335	1.00	0.73		
23	2049			335	1.00	0.73		
24	2050			335	1.00	0.73		
25	2051			335	1.00	0.73		
26	2052			335	1.00	0.73		
27	2053			335	1.00	0.73		
28	2054			335	1.00	0.73		
29	2055			335	1.00	0.73		
30	2056			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of : 0<2 Years
 0.72 fraction of : 2<16 Years
 0.73 fraction of : 16<70 Years

Project: EBMUD Sobrante WTP
 Date: May 8, 2023
 Condition: Mitigated
 Receptor: Existing Residence
 Year: 2028

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2028	0.02	0.06	1,090	10.0	0.85	2.94	0.08 Maximum Annual PM2.5 Concentration (ug/m3)
2	2029	0.04	0.08	1,090	10.0	0.85	5.22	0.3 Significance Threshold (ug/m3)
3	2030	0.01	0.06	745	4.75	0.72	0.32	No Significant?
4	2031			745	3.00	0.72		0.01 Chronic Hazard Impact
5	2032			745	3.00	0.72		1 Significance Threshold
6	2033			745	3.00	0.72		No Significant?
7	2034			745	3.00	0.72		
8	2035	0.00	0.01	745	3.00	0.72	0.01	8.61 Cancer Risk (Child)
9	2036	0.00	0.02	745	3.00	0.72	0.11	10 Significance Threshold
10	2037	0.00	0.02	745	3.00	0.72	0.09	No Significant?
11	2038	0.00	0.02	745	3.00	0.72	0.11	
12	2039			745	3.00	0.72		0.50 Cancer Risk (Adult)
13	2040			745	3.00	0.72		10 Significance Threshold
14	2041			745	3.00	0.72		No Significant?
15	2042			745	3.00	0.72		
16	2043			745	3.00	0.72		
17	2044			335	1.70	0.73		
18	2045			335	1.00	0.73		
19	2046			335	1.00	0.73		
20	2047			335	1.00	0.73		
21	2048			335	1.00	0.73		
22	2049			335	1.00	0.73		
23	2050			335	1.00	0.73		
24	2051			335	1.00	0.73		
25	2052			335	1.00	0.73		
26	2053			335	1.00	0.73		
27	2054			335	1.00	0.73		
28	2055			335	1.00	0.73		
29	2056			335	1.00	0.73		
30	2057			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of : 0<2 Years
 0.72 fraction of : 2<16 Years
 0.73 fraction of : 16<70 Years

Project: EBMUD Sobrante WTP
 Date: May 8, 2023
 Condition: Mitigated
 Receptor: Existing Residence
 Year: 2029

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2029	0.04	0.08	1,090	10.0	0.85	5.22	0.08 Maximum Annual PM2.5 Concentration (ug/m3)
2	2030	0.01	0.06	1,090	10.0	0.85	1.18	0.3 Significance Threshold (ug/m3)
3	2031			745	4.75	0.72		No Significant?
4	2032			745	3.00	0.72		0.01 Chronic Hazard Impact
5	2033			745	3.00	0.72		1 Significance Threshold
6	2034			745	3.00	0.72		No Significant?
7	2035	0.00	0.01	745	3.00	0.72	0.01	
8	2036	0.00	0.02	745	3.00	0.72	0.11	6.61 Cancer Risk (Child)
9	2037	0.00	0.02	745	3.00	0.72	0.09	10 Significance Threshold
10	2038	0.00	0.02	745	3.00	0.72	0.11	No Significant?
11	2039			745	3.00	0.72		
12	2040			745	3.00	0.72		0.37 Cancer Risk (Adult)
13	2041			745	3.00	0.72		10 Significance Threshold
14	2042			745	3.00	0.72		No Significant?
15	2043			745	3.00	0.72		
16	2044			745	3.00	0.72		
17	2045			335	1.70	0.73		
18	2046			335	1.00	0.73		
19	2047			335	1.00	0.73		
20	2048			335	1.00	0.73		
21	2049			335	1.00	0.73		
22	2050			335	1.00	0.73		
23	2051			335	1.00	0.73		
24	2052			335	1.00	0.73		
25	2053			335	1.00	0.73		
26	2054			335	1.00	0.73		
27	2055			335	1.00	0.73		
28	2056			335	1.00	0.73		
29	2057			335	1.00	0.73		
30	2058			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of time 0<2 Years
 0.72 fraction of time 2<16 Years
 0.73 fraction of time 16<70 Years

Project: EBMUD Sobrante WTP and Pipeline
 Date: May 8, 2023
 Condition: Unmitigated
 Receptor: Existing Residence
 Year: 2026

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2026	0.02	0.88	1,090	10.0	0.85	2.61	0.88 Maximum Annual PM2.5 Concentration (ug/m3)
2	2027	0.03	0.46	1,090	10.0	0.85	4.07	0.3 Significance Threshold (ug/m3)
3	2028	0.03	0.46	745	4.75	0.72	1.14	Yes Significant?
4	2029	0.04	0.47	745	3.00	0.72	0.99	0.01 Chronic Hazard Impact
5	2030	0.01	0.53	745	3.00	0.72	0.25	1 Significance Threshold
6	2031			745	3.00	0.72		No Significant?
7	2032			745	3.00	0.72		
8	2033			745	3.00	0.72		9.78 Cancer Risk (Child)
9	2034			745	3.00	0.72		10 Significance Threshold
10	2035	0.01	0.32	745	3.00	0.72	0.33	No Significant?
11	2036	0.01	0.31	745	3.00	0.72	0.14	
12	2037	0.01	0.38	745	3.00	0.72	0.14	0.99 Cancer Risk (Adult)
13	2038	0.01	0.15	745	3.00	0.72	0.12	10 Significance Threshold
14	2039			745	3.00	0.72		No Significant?
15	2040			745	3.00	0.72		
16	2041			745	3.00	0.72		
17	2042			335	1.70	0.73		
18	2043			335	1.00	0.73		
19	2044			335	1.00	0.73		
20	2045			335	1.00	0.73		
21	2046			335	1.00	0.73		
22	2047			335	1.00	0.73		
23	2048			335	1.00	0.73		
24	2049			335	1.00	0.73		
25	2050			335	1.00	0.73		
26	2051			335	1.00	0.73		
27	2052			335	1.00	0.73		
28	2053			335	1.00	0.73		
29	2054			335	1.00	0.73		
30	2055			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of time 0<2 Years
 0.72 fraction of time 2<16 Years
 0.73 fraction of time 16<70 Years

Project: EBMUD Sobrante WTP and Pipeline
 Date: May 8, 2023
 Condition: Unmitigated
 Receptor: Existing Residence
 Year: 2027

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2027	0.03	0.46	1,090	10.0	0.85	4.07	0.53 Maximum Annual PM2.5 Concentration (ug/m3)
2	2028	0.03	0.46	1,090	10.0	0.85	4.16	0.3 Significance Threshold (ug/m3)
3	2029	0.04	0.47	745	4.75	0.72	1.56	Yes Significant?
4	2030	0.01	0.53	745	3.00	0.72	0.25	0.01 Chronic Hazard Impact
5	2031			745	3.00	0.72		1 Significance Threshold
6	2032			745	3.00	0.72		No Significant?
7	2033			745	3.00	0.72		
8	2034			745	3.00	0.72		10.77 Cancer Risk (Child)
9	2035	0.01	0.32	745	3.00	0.72	0.33	10 Significance Threshold
10	2036	0.01	0.31	745	3.00	0.72	0.14	Yes Significant?
11	2037	0.01	0.38	745	3.00	0.72	0.14	
12	2038	0.01	0.15	745	3.00	0.72	0.12	0.88 Cancer Risk (Adult)
13	2039			745	3.00	0.72		10 Significance Threshold
14	2040			745	3.00	0.72		No Significant?
15	2041			745	3.00	0.72		
16	2042			745	3.00	0.72		
17	2043			335	1.70	0.73		
18	2044			335	1.00	0.73		
19	2045			335	1.00	0.73		
20	2046			335	1.00	0.73		
21	2047			335	1.00	0.73		
22	2048			335	1.00	0.73		
23	2049			335	1.00	0.73		
24	2050			335	1.00	0.73		
25	2051			335	1.00	0.73		
26	2052			335	1.00	0.73		
27	2053			335	1.00	0.73		
28	2054			335	1.00	0.73		
29	2055			335	1.00	0.73		
30	2056			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of time 0<2 Years
 0.72 fraction of time 2<16 Years
 0.73 fraction of time 16<70 Years

Project: EBMUD Sobrante WTP and Pipeline
 Date: May 8, 2023
 Condition: Unmitigated
 Receptor: Existing Residence
 Year: 2028

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2028	0.03	0.46	1,090	10.0	0.85	4.16	0.53 Maximum Annual PM2.5 Concentration (ug/m3)
2	2029	0.04	0.47	1,090	10.0	0.85	5.68	0.3 Significance Threshold (ug/m3)
3	2030	0.01	0.53	745	4.75	0.72	0.39	Yes Significant?
4	2031			745	3.00	0.72		0.01 Chronic Hazard Impact
5	2032			745	3.00	0.72		1 Significance Threshold
6	2033			745	3.00	0.72		No Significant?
7	2034			745	3.00	0.72		
8	2035	0.01	0.32	745	3.00	0.72	0.33	10.97 Cancer Risk (Child)
9	2036	0.01	0.31	745	3.00	0.72	0.14	10 Significance Threshold
10	2037	0.01	0.38	745	3.00	0.72	0.14	Yes Significant?
11	2038	0.01	0.15	745	3.00	0.72	0.12	
12	2039			745	3.00	0.72		0.70 Cancer Risk (Adult)
13	2040			745	3.00	0.72		10 Significance Threshold
14	2041			745	3.00	0.72		No Significant?
15	2042			745	3.00	0.72		
16	2043			745	3.00	0.72		
17	2044			335	1.70	0.73		
18	2045			335	1.00	0.73		
19	2046			335	1.00	0.73		
20	2047			335	1.00	0.73		
21	2048			335	1.00	0.73		
22	2049			335	1.00	0.73		
23	2050			335	1.00	0.73		
24	2051			335	1.00	0.73		
25	2052			335	1.00	0.73		
26	2053			335	1.00	0.73		
27	2054			335	1.00	0.73		
28	2055			335	1.00	0.73		
29	2056			335	1.00	0.73		
30	2057			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of time 0<2 Years
 0.72 fraction of time 2<16 Years
 0.73 fraction of time 16<70 Years

Project: EBMUD Sobrante WTP and Pipeline
 Date: May 8, 2023
 Condition: Unmitigated
 Receptor: Existing Residence
 Year: 2029

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2029	0.04	0.47	1,090	10.0	0.85	5.68	0.53 Maximum Annual PM2.5 Concentration (ug/m3)
2	2030	0.01	0.53	1,090	10.0	0.85	1.42	0.3 Significance Threshold (ug/m3)
3	2031			745	4.75	0.72		Yes Significant?
4	2032			745	3.00	0.72		0.01 Chronic Hazard Impact
5	2033			745	3.00	0.72		1 Significance Threshold
6	2034			745	3.00	0.72		No Significant?
7	2035	0.01	0.32	745	3.00	0.72	0.33	
8	2036	0.01	0.31	745	3.00	0.72	0.14	7.84 Cancer Risk (Child)
9	2037	0.01	0.38	745	3.00	0.72	0.14	10 Significance Threshold
10	2038	0.01	0.15	745	3.00	0.72	0.12	No Significant?
11	2039			745	3.00	0.72		
12	2040			745	3.00	0.72		0.51 Cancer Risk (Adult)
13	2041			745	3.00	0.72		10 Significance Threshold
14	2042			745	3.00	0.72		No Significant?
15	2043			745	3.00	0.72		
16	2044			745	3.00	0.72		
17	2045			335	1.70	0.73		
18	2046			335	1.00	0.73		
19	2047			335	1.00	0.73		
20	2048			335	1.00	0.73		
21	2049			335	1.00	0.73		
22	2050			335	1.00	0.73		
23	2051			335	1.00	0.73		
24	2052			335	1.00	0.73		
25	2053			335	1.00	0.73		
26	2054			335	1.00	0.73		
27	2055			335	1.00	0.73		
28	2056			335	1.00	0.73		
29	2057			335	1.00	0.73		
30	2058			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of : 0<2 Years
 0.72 fraction of : 2<16 Years
 0.73 fraction of : 16<70 Years

Project: EBMUD Sobrante WTP and Pipeline
 Date: May 8, 2023
 Condition: Mitigated
 Receptor: Existing Residence
 Year: 2026

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2026	0.01	0.10	1,090	10.0	0.85	1.77	0.10 Maximum Annual PM2.5 Concentration (ug/m3)
2	2027	0.02	0.06	1,090	10.0	0.85	2.87	0.3 Significance Threshold (ug/m3)
3	2028	0.02	0.06	745	4.75	0.72	0.81	No Significant?
4	2029	0.04	0.08	745	3.00	0.72	0.91	0.01 Chronic Hazard Impact
5	2030	0.01	0.06	745	3.00	0.72	0.20	1 Significance Threshold
6	2031			745	3.00	0.72		No Significant?
7	2032			745	3.00	0.72		
8	2033			745	3.00	0.72		7.26 Cancer Risk (Child)
9	2034			745	3.00	0.72		10 Significance Threshold
10	2035	0.02	0.04	745	3.00	0.72	0.38	No Significant?
11	2036	0.00	0.03	745	3.00	0.72	0.12	
12	2037	0.00	0.04	745	3.00	0.72	0.09	0.81 Cancer Risk (Adult)
13	2038	0.00	0.02	745	3.00	0.72	0.11	10 Significance Threshold
14	2039			745	3.00	0.72		No Significant?
15	2040			745	3.00	0.72		
16	2041			745	3.00	0.72		
17	2042			335	1.70	0.73		
18	2043			335	1.00	0.73		
19	2044			335	1.00	0.73		
20	2045			335	1.00	0.73		
21	2046			335	1.00	0.73		
22	2047			335	1.00	0.73		
23	2048			335	1.00	0.73		
24	2049			335	1.00	0.73		
25	2050			335	1.00	0.73		
26	2051			335	1.00	0.73		
27	2052			335	1.00	0.73		
28	2053			335	1.00	0.73		
29	2054			335	1.00	0.73		
30	2055			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of : 0<2 Years
 0.72 fraction of : 2<16 Years
 0.73 fraction of : 16<70 Years

Project: EBMUD Sobrante WTP and Pipeline
 Date: May 8, 2023
 Condition: Mitigated
 Receptor: Existing Residence
 Year: 2027

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2027	0.02	0.06	1,090	10.0	0.85	2.87	0.08 Maximum Annual PM2.5 Concentration (ug/m3)
2	2028	0.02	0.06	1,090	10.0	0.85	2.94	0.3 Significance Threshold (ug/m3)
3	2029	0.04	0.08	745	4.75	0.72	1.44	No Significant?
4	2030	0.01	0.06	745	3.00	0.72	0.20	0.01 Chronic Hazard Impact
5	2031			745	3.00	0.72		1 Significance Threshold
6	2032			745	3.00	0.72		No Significant?
7	2033			745	3.00	0.72		
8	2034			745	3.00	0.72		8.14 Cancer Risk (Child)
9	2035	0.02	0.04	745	3.00	0.72	0.38	10 Significance Threshold
10	2036	0.00	0.03	745	3.00	0.72	0.12	No Significant?
11	2037	0.00	0.04	745	3.00	0.72	0.09	
12	2038	0.00	0.02	745	3.00	0.72	0.11	0.73 Cancer Risk (Adult)
13	2039			745	3.00	0.72		10 Significance Threshold
14	2040			745	3.00	0.72		No Significant?
15	2041			745	3.00	0.72		
16	2042			745	3.00	0.72		
17	2043			335	1.70	0.73		
18	2044			335	1.00	0.73		
19	2045			335	1.00	0.73		
20	2046			335	1.00	0.73		
21	2047			335	1.00	0.73		
22	2048			335	1.00	0.73		
23	2049			335	1.00	0.73		
24	2050			335	1.00	0.73		
25	2051			335	1.00	0.73		
26	2052			335	1.00	0.73		
27	2053			335	1.00	0.73		
28	2054			335	1.00	0.73		
29	2055			335	1.00	0.73		
30	2056			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of : 0<2 Years
 0.72 fraction of : 2<16 Years
 0.73 fraction of : 16<70 Years

Project: EBMUD Sobrante WTP and Pipeline
 Date: May 8, 2023
 Condition: Mitigated
 Receptor: Existing Residence
 Year: 2028

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2028	0.02	0.06	1,090	10.0	0.85	2.94	0.08 Maximum Annual PM2.5 Concentration (ug/m3)
2	2029	0.04	0.08	1,090	10.0	0.85	5.22	0.3 Significance Threshold (ug/m3)
3	2030	0.01	0.06	745	4.75	0.72	0.32	No Significant?
4	2031			745	3.00	0.72		0.01 Chronic Hazard Impact
5	2032			745	3.00	0.72		1 Significance Threshold
6	2033			745	3.00	0.72		No Significant?
7	2034			745	3.00	0.72		
8	2035	0.02	0.04	745	3.00	0.72	0.38	9.18 Cancer Risk (Child)
9	2036	0.00	0.03	745	3.00	0.72	0.12	10 Significance Threshold
10	2037	0.00	0.04	745	3.00	0.72	0.09	No Significant?
11	2038	0.00	0.02	745	3.00	0.72	0.11	
12	2039			745	3.00	0.72		0.60 Cancer Risk (Adult)
13	2040			745	3.00	0.72		10 Significance Threshold
14	2041			745	3.00	0.72		No Significant?
15	2042			745	3.00	0.72		
16	2043			745	3.00	0.72		
17	2044			335	1.70	0.73		
18	2045			335	1.00	0.73		
19	2046			335	1.00	0.73		
20	2047			335	1.00	0.73		
21	2048			335	1.00	0.73		
22	2049			335	1.00	0.73		
23	2050			335	1.00	0.73		
24	2051			335	1.00	0.73		
25	2052			335	1.00	0.73		
26	2053			335	1.00	0.73		
27	2054			335	1.00	0.73		
28	2055			335	1.00	0.73		
29	2056			335	1.00	0.73		
30	2057			335	1.00	0.73		

Health Risk Assessment Assumptions

5 Chronic Reference Exposure Level (ug/m3) for DPM
 1.1 Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM
 350 days per year
 25,550 days per lifetime

1,090 95th Percentile Daily Breathing Rates (L/kg-day) 0<2 Years
 861 95th Percentile Daily Breathing Rates (L/kg-day) 2<9 Years
 745 95th Percentile Daily Breathing Rates (L/kg-day) 2<16 Years
 335 95th Percentile Daily Breathing Rates (L/kg-day) 16<30 Years
 290 95th Percentile Daily Breathing Rates (L/kg-day) 30<70 Years

0.85 fraction of : 0<2 Years
 0.72 fraction of : 2<16 Years
 0.73 fraction of : 16<70 Years

Project: EBMUD Sobrante WTP and Pipeline
 Date: May 8, 2023
 Condition: Mitigated
 Receptor: Existing Residence
 Year: 2029

Exposure Year	Calendar Year	Annual DPM Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk	
1	2029	0.04	0.08	1,090	10.0	0.85	5.22	0.08 Maximum Annual PM2.5 Concentration (ug/m3)
2	2030	0.01	0.06	1,090	10.0	0.85	1.18	0.3 Significance Threshold (ug/m3)
3	2031			745	4.75	0.72		No Significant?
4	2032			745	3.00	0.72		0.01 Chronic Hazard Impact
5	2033			745	3.00	0.72		1 Significance Threshold
6	2034			745	3.00	0.72		No Significant?
7	2035	0.02	0.04	745	3.00	0.72	0.38	
8	2036	0.00	0.03	745	3.00	0.72	0.12	7.10 Cancer Risk (Child)
9	2037	0.00	0.04	745	3.00	0.72	0.09	10 Significance Threshold
10	2038	0.00	0.02	745	3.00	0.72	0.11	No Significant?
11	2039			745	3.00	0.72		
12	2040			745	3.00	0.72		0.47 Cancer Risk (Adult)
13	2041			745	3.00	0.72		10 Significance Threshold
14	2042			745	3.00	0.72		No Significant?
15	2043			745	3.00	0.72		
16	2044			745	3.00	0.72		
17	2045			335	1.70	0.73		
18	2046			335	1.00	0.73		
19	2047			335	1.00	0.73		
20	2048			335	1.00	0.73		
21	2049			335	1.00	0.73		
22	2050			335	1.00	0.73		
23	2051			335	1.00	0.73		
24	2052			335	1.00	0.73		
25	2053			335	1.00	0.73		
26	2054			335	1.00	0.73		
27	2055			335	1.00	0.73		
28	2056			335	1.00	0.73		
29	2057			335	1.00	0.73		
30	2058			335	1.00	0.73		

APPENDIX F

Appendix F – Biological Resources Supplemental Information and Aquatic Resource Delineation Report

APPENDIX F

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APPENDIX F

Appendix F.1 – Biological Resources Supplemental Information

APPENDIX F – BIOLOGICAL RESOURCES SUPPLEMENTAL INFORMATION

Table 1 Special-Status Plant Species with Potential to Occur within the Project Vicinity

Scientific Name	Common Name	Listed Status	Habitat Requirements	Potential for Occurrence
<i>Amsinckia lunaris</i>	Bent-flowered fiddleneck	1B.2	Occurs in coastal bluff scrub, cismontane woodland, and valley and foothill grassland at elevations of 10 to 1,640 feet.	Low potential. Grassland habitats are annual and highly disturbed. The species was absent during focused surveys.
<i>Arctostaphylos pallida</i>	pallid manzanita	FT, CE, 1B.1	Occurs in broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub at elevations of 605 to 1,525 feet.	No potential. Suitable habitat is absent from the Project site. Plant known from only a few isolated locations in the East Bay.
<i>Astragalus tener</i> var. <i>tener</i>	alkali milk-vetch	1B.2	Occurs in alkaline environments within playas, valley and foothill grasslands with adobe clay, and vernal pools at elevations of 5 to 195 feet.	No potential. Suitable habitat and substrate are absent from the Project site.
<i>Chloropyron molle</i> ssp. <i>molle</i>	soft salty bird's-beak	FE, 1B.2	Occurs in coastal salt marshes and swamps at elevations of 0 to 10 feet.	No potential. Suitable habitat is absent from the Project site.
<i>Cirsium andrewsii</i>	Franciscan thistle	1B.2	Occurs in broadleafed upland forest, coastal bluff scrub, coastal prairie, and coastal scrub at elevations of 0 to 490 feet.	No potential. Suitable habitat is absent from the Project site.
<i>Cordylanthus mollis</i> ssp. <i>mollis</i>	soft bird's-beak	FE	Occurs in coastal prairie habitat, in grasslands on coastal terraces below 330 feet.	Low potential. Grassland habitats are annual and highly disturbed. The species was absent during focused surveys.
<i>Dirca occidentalis</i>	Western leatherwood	1B.2	Occurs in mesic areas within broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian forest, and riparian woodland at elevations of	Low potential. Potentially suitable habitat occurs within the willow riparian areas on the south side of the SOWTP site. Species was absent during focused surveys.

APPENDIX F – BIOLOGICAL RESOURCES SUPPLEMENTAL INFORMATION

Scientific Name	Common Name	Listed Status	Habitat Requirements	Potential for Occurrence
			80 to 1,395 feet. Grows on moist and shaded slopes	
<i>Fritillaria liliaceae</i>	fragrant fritillary	1B.2	Occurs in serpentine soils within cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grasslands at elevations of 0 to 490 feet.	No potential. Suitable habitat and substrate are absent from the Project site.
<i>Helianthella castanea</i>	Diablo helianthella	1B.2	Occurs in azonal, rocky soils often in partial shade within broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland at elevations of 195 to 4,265 feet.	Low potential. Potentially suitable habitat occurs within the grassland and willow riparian areas on the Project site. The species was absent during focused surveys.
<i>Hoita strobilina</i>	Loma Prieta hoita	1B.1	Occurs in mesic areas with serpentine soils within chaparral, cismontane woodland, and riparian woodland at elevations of 100 to 2,820 feet.	No potential. Suitable habitat and substrate are absent from the Project site.
<i>Holocarpha macradenia</i>	Santa Cruz tarplant	FT, CE, 1B.1	Occurs in clay or sandy soils within coastal prairie, coastal scrub, and valley and foothill grassland at elevations of 35 to 720 feet.	No potential. Suitable habitat and substrate are absent from the Project site.
<i>Isocoma arguta</i>	Carquinez goldenbush	1B.1	Occurs within alkaline flats and foothill grassland at elevations of 5 to 65 feet. Resident of Suisun Marsh	No potential. Suitable habitat and substrate are absent from the Project site.
<i>Lasthenia conjugens</i>	Contra Costa goldfields	FE, 1B.1	Occurs in mesic areas within cismontane woodland, alkaline playas, valley and foothill grassland, and vernal pools at elevations of 0 to 1,540 feet.	No potential. Suitable habitat and substrate are absent from the Project site

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Scientific Name	Common Name	Listed Status	Habitat Requirements	Potential for Occurrence
<i>Spergularia macrotheca</i> var. <i>longistyla</i>	long-styled sand spurrey	1B.2	Occurs in alkaline environments within meadows and seeps, and marshes and swamps at elevations of 0 to 835 feet.	No potential. Suitable habitat and substrate are absent from the Project site.
<i>Suaeda californica</i>	California seablite	FE, 1B.1	Occurs in coastal salt marshes and swamps at elevations of 0 to 50 feet.	No potential. Suitable habitat is absent from the Project site.
<i>Trifolium hydrophilum</i>	saline clover	1B.2	Occurs in marshes and swamps, mesic areas within alkaline valley and foothill grassland, and vernal pools at elevations of 0 to 985 feet.	No potential. Suitable habitat and substrate are absent from the Project site.

Key to status:

FE=Federally listed as endangered species

FT=Federally listed as threatened species

CE=California listed as endangered species

CNPS Rare Plant Rank

1A=Plants presumed extirpated in California, and either rare or extinct elsewhere

1B=Plants rare, threatened, or endangered in California, or elsewhere

2A=Plants presumed extirpated in California but common elsewhere

2B=Plants rare, threatened, or endangered in California but more common elsewhere

3=Plants about which more information is needed

Note: CNPS ranks below 3 were excluded from this analysis.

APPENDIX F – BIOLOGICAL RESOURCES SUPPLEMENTAL INFORMATION

Table 2 Special-Status Wildlife Species with Potential to Occur within the Project Vicinity

Scientific Name	Common Name	Listed Status	Habitat Requirements	Potential for Occurrence
Invertebrates				
<i>Branchinecta conservatio</i>	Conservancy fairy shrimp	FE	Occurs exclusively in relatively large, turbid freshwater vernal pools, from 16 to 5,577 feet elevation.	None. No suitable habitat occurs on the Project site.
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	FE	Occurs exclusively in vernal pools in California and southern Oregon.	None. No suitable habitat occurs on the Project site.
<i>Danaus plexippus</i>	monarch butterfly	FC	Prefers predominantly open country, breeding habitat is greatly dependent upon the presence of asclepiad flora (milkweeds). Requires dense tree cover for overwintering; most of the present sites in California are associated with eucalyptus trees, specifically the blue gum (<i>Eucalyptus globulus</i>).	None. No suitable habitat or host plants occur on the Project site.
<i>Helminthoglypta nickliniana bridgesi</i>	Bridges' coast range shoulderband	S1S2	Occurs in many habitats, including tall grassland, thistles, weeds, and rock piles. Has also been found beneath woody debris under streamside oak woodland.	None. No suitable habitat occurs on the Project site. There have been no occurrences reported within 3 miles of the study area. Because this species is a former candidate for listing by USFWS, distributional information on this snail is maintained by CNDDDB.
<i>Syncaris pacifica</i>	California freshwater shrimp	FE	Occurs in low elevation, low gradient, freshwater streams in Marin, Napa and Sonoma counties.	None. No suitable habitat occurs on the Project site.
Fish				
<i>Acipenser medirostris</i>	green sturgeon – Southern DPS	FT, SSC	Occurs in cool sections of the upper Sacramento River with deep, turbulent flows. Spawns when	None. No suitable habitat occurs on the Project site.

APPENDIX F – BIOLOGICAL RESOURCES SUPPLEMENTAL INFORMATION

Scientific Name	Common Name	Listed Status	Habitat Requirements	Potential for Occurrence
			water temperature is between 12 and 15 degrees Celsius.	
<i>Eucyclogobius newberryi</i>	tidewater goby	FE	Occurs in brackish lagoons formed by sandbars where streams feed into the ocean.	None. No suitable habitat occurs on the Project site.
<i>Hypomesus transpacificus</i>	delta smelt	FT	Occurs in the Sacramento River upstream to Isleton and in the San Joaquin River to Mossdale. Spawns in freshwater from January to July and rears in shallow water habitat where salinities range from 2 to 7 ppt.	None. No suitable habitat occurs on the Project site.
<i>Oncorhynchus mykiss irideus</i>	steelhead – Central California Coast DPS	FT, SSC	Occurs in fresh water, fast flowing, highly oxygenated, clear, cool streams where riffles tend to predominate pools; small streams with high elevation headwaters close to the ocean that have no impassible barriers; spawning and high elevation headwaters.	None. No suitable habitat occurs on the Project site.
<i>Oncorhynchus mykiss irideus</i>	steelhead – California Central Valley DPS	FT, SSC	Occurs in fresh water, fast flowing, highly oxygenated, clear, cool streams where riffles tend to predominate pools; small streams with high elevation headwaters close to the ocean that have no impassible barriers; spawning and high elevation headwaters.	None. No suitable habitat occurs on the Project site.
<i>Oncorhynchus tshawytscha</i>	Chinook salmon - Central Valley spring-run ESU	FT	Occurs in perennial freshwater streams and large, freshwater river systems. Juveniles rear in the Sacramento and San	None. No suitable habitat occurs on the Project site

APPENDIX F – BIOLOGICAL RESOURCES SUPPLEMENTAL INFORMATION

Scientific Name	Common Name	Listed Status	Habitat Requirements	Potential for Occurrence
			Joaquin Rivers and tributaries throughout the year.	
<i>Oncorhynchus tshawytscha</i>	Chinook salmon - Sacramento River winter-run ESU	FE	Occurs in perennial freshwater streams and large, freshwater river systems. The winter-run migrates up the Sacramento River to spawn primarily upstream of Red Bluff, and juveniles rear in the Sacramento River throughout the year.	None. No suitable habitat occurs on the Project site.
Amphibians/Reptiles				
<i>Ambystoma californiense</i>	California tiger salamander	FT	Require both aquatic and upland habitat. Aquatic habitat can be ponds, vernal pools or other water bodies that hold water for a minimum of 12 consecutive weeks. Upland habitat must contain small animal burrows or underground hideaways for shelter and foraging.	None. No suitable habitat occurs on the Project site.
<i>Emys marmorata</i>	Western pond turtle	SSC	Occurs in slow-moving rivers and streams (e.g., in oxbows), lakes, reservoirs, permanent and ephemeral wetlands, stock ponds, and sewage treatment plants. Prefers aquatic habitat with refugia such as undercut banks and submerged vegetation and require emergent basking sites such as mud banks, rocks, logs, and root wads to thermoregulate their body temperature.	Low Potential. No suitable habitat occurs on the Project site and potential nearby habitat is low quality with limited basking sites. Preconstruction surveys will be conducted; see text.
<i>Masticophis lateralis euryxanthus</i>	Alameda whipsnake	FT, CT	Occurs in mixed chaparral, coastal scrub, and annual grassland and	None. No suitable breeding habitat occurs on the Project site and limited

APPENDIX F – BIOLOGICAL RESOURCES SUPPLEMENTAL INFORMATION

Scientific Name	Common Name	Listed Status	Habitat Requirements	Potential for Occurrence
			oak woodlands adjacent to scrub habitats. Grassland areas linked to scrub by rock outcrops or river corridors are also considered primary habitat constituent elements.	suitable upland habitat. In addition, geographic barriers are present and few to no burrows are present.
<i>Rana boylii</i>	foothill yellow-legged frog	FT, SSC	Occurs in or near rocky streams in valley-foothill hardwood, valley-foothill riparian, coastal scrub, mixed conifer, mixed chaparral, and wet meadows. Requires perennial or intermittent streams with shallow, flowing water and containing some cobble-sized substrate. Portions of open canopy important for basking.	None. No suitable habitat occurs on the Project site.
<i>Rana draytonii</i>	California red-legged frog	FT, SSC	Occurs in semi-permanent or permanent water at least 2 feet deep, bordered by emergent or riparian vegetation, and upland grassland, forest, or scrub habitats for aestivation and dispersal.	Low Potential. Limited upland habitat occurs on the Project site with little to no burrows observed. Breeding habitat is limited and low quality. Preconstruction surveys will be conducted; see text.
Birds				
<i>Charadrius nivosus nivosus</i>	Western snowy plover	FT, CT	Breeds above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries. Less common nesting habitat includes bluff-backed beaches, dredged material disposal sites, salt pond levees, dry salt ponds, and river bars.	None. No suitable habitat occurs on the Project site. No known occurrences within 3 miles.

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Scientific Name	Common Name	Listed Status	Habitat Requirements	Potential for Occurrence
<i>Coccyzus americanus</i>	yellow-billed cuckoo	FT, CT	Prefers open woodlands with clearings and a dense shrub layer. Often found in woodlands near streams, rivers, or lakes. Preferred habitats include abandoned farmland, old fruit orchards, successional shrubland, and dense thickets.	None. Very limited suitable habitat occurs on the Project site. Historic populations in the Project area are no longer extant.
<i>Falco peregrinus anatum</i>	American peregrine falcon	FP	Inhabits a variety of habitats ranging from wetland, coastal shorelines, and islands, to deserts, forests, and urban areas. Nests on cliffs, rocky outcrops, bare ground, and man-made structures such as bridges, buildings, and other tall, prominent structures	Low Potential. Limited occurrences found within 3 miles; however, suitable nesting habitat occurs on Project site. Preconstruction surveys will be conducted; see text.
<i>Melospiza melodia samuelis</i>	San Pablo song sparrow	SSC	Found in tidal salt marshes in San Pablo Bay. Dense vegetation is required for nesting sites, for song perches, and as cover from predators. Primarily associated with high marsh, particularly pickleweed, and their territories are densest in areas where tidal channels are lined with gumplant.	None. No suitable habitat occurs on the Project site.
<i>Rallus longirostris obsoletus</i>	California clapper rail	FE, CE	Occurs in pickleweed (<i>Salicornia</i>) and cordgrass (<i>Spartina foliosa</i>) marshes. High marsh is needed during winter flood tides. Nests in marshlands (cordgrass, pickleweed, gum-plant, salt grass) near tidal ponds, arranging plants or drift material over the nest	None. No suitable habitat occurs on the Project site. No known occurrences within 3 miles.

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Scientific Name	Common Name	Listed Status	Habitat Requirements	Potential for Occurrence
			as a canopy. Often constructs brood nest on higher ground to shelter young from storm tides.	
<i>Sterna antillarum browni</i>	California least tern	FE, CE	Nests in colonies of around 25 pairs on bare or sparsely vegetated sandy beaches, alkali flats, and landfills. Presently, most nesting occurs on beaches or in coastal wetlands near estuaries, bays, harbors, or the ocean. Feeds on small fish.	None. No suitable habitat occurs on the Project site. No known occurrences within 3 miles.
<i>Strix occidentalis caurina</i>	Northern spotted owl	FT	Occurs in late seral ponderosa pine, mixed conifer, white fir, and mixed evergreen forests in foothills; riparian/hardwood forests and woodlands; live oak/big cone fir forests; and redwood/California laurel forests.	None. No suitable habitat occurs on the Project site.
<i>Xanthocephalus xanthocephalus</i>	yellow-headed blackbird	SSC	Breeds almost exclusively in marshes with tall emergent vegetation, such as tules or cattails, generally in open areas and edges over relatively deep water. Nests locally in low vegetation.	None. No suitable habitat occurs on the Project site.
Mammals				
<i>Antrozous pallidus</i>	pallid bat	SSC	Occurs in deserts, grasslands, shrublands, woodlands, and forest. Most common in open, dry, habitats with rocky area for roosting. Roost must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Low Potential. Marginal roosting habitat occurs on the Project site.

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Scientific Name	Common Name	Listed Status	Habitat Requirements	Potential for Occurrence
<i>Neotoma fuscipes annectens</i>	San Francisco dusky-footed woodrat	SSC	Inhabits oak and riparian woodlands with a well-developed understory as well as chaparral scrub habitats, where their conical stick nests are often visible. Nests can be found on the ground beneath sheltering vegetation or aboveground in tree canopies.	Low Potential. No dens detected during 2021 survey and marginally suitable habitat occurs on the Project site. Understory beneath oak canopy was underdeveloped and unlikely to provide sufficient shade.
<i>Reithrodontomys raviventris</i>	salt marsh harvest mouse	FE, CE, FP	Endemic to the salt and brackish marshes of the Estuary and adjacent tidally influenced areas. Depends on dense pickleweed as its primary cover and food source. May utilize a broader source of food and cover that includes saltgrass and other vegetation typically found in the salt and brackish marshes of this region.	None. No suitable habitat occurs on the Project site.
<i>Key to status:</i> FE=Federally listed as endangered species FT=Federally listed as threatened species FC=Federally listed as a candidate species for listing CE=California listed as endangered species CT=California listed as threatened species FP=California listed as fully protected SSC=California species of special concern				

APPENDIX F

Appendix F.2 – Aquatic Resource Delineation Report

Aquatic Resource Delineation Report

East Bay Municipal Utility District

Sobrante Water Treatment Plant

5500 Amend Road

El Sobrante, Contra Costa County, California

February 2022

Prepared for:

East Bay Municipal Utility District
375 11th Street
Oakland, CA 94607-4240

Prepared by:



Sequoia Ecological Consulting, Inc.

Contact: Amber Anderson
1342 Creekside Drive
Walnut Creek, CA 94526
(925) 855-5500
aanderson@sequoiaeco.com

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1 Background and Introduction

1.1 Project Description

East Bay Municipal Utilities District (EBMUD) is planning the Sobrante Water Treatment Plant (SOWTP) Reliability Improvements Project (Project) located at 5500 Amend Road, El Sobrante, Contra Costa County, California (Figure 1). The purpose of the Project is to increase the treatment capacity of the SOWTP to meet future demand, treat additional Folsom South Canal Connection (FSCC) water during droughts, reduce disinfection by-products, and improve treatment processes to reliably operate SOWTP at 60 million gallons per day (MGD) in the near-term and 80 MGD in the long-term.

The Project would include new facilities that have been divided into a Phase 1 and Phase 2 sequencing to meet near-term and long-term demand, respectively. The Phase 1 improvements would increase capacity to 60 MGD, and Phase 2 improvements would further increase capacity up to 80 MGD (EBMUD, 2021).

The Phase 1 facilities include:

- Raw water control valve and flow meter
- Two spent filter backwash water (SFBW) equalization basins
- Filter-to-waste (FTW) equalization basin
- Two gravity thickeners
- Two SFBW flocculation and sedimentation basins
- Pipelines for the SFBW reclaim and solids handling facilities
- Chlorine contact basin (CCB)
- Inlet/outlet pipelines for clearwell and hydraulic weir
- Polymer and power building
- Fifth stage flocculation for the existing two flocculation basins
- Storm drain pipelines and bioretention pond
- Maintenance building that incorporates existing maintenance buildings/shops
- Entrance gate, security fencing, and lighting
- Access and maintenance road for new facilities

Phase 2 facilities include:

- One flocculation basin
- One sedimentation basin with tube settlers
- Two new dual-media filters and associated pipe and operation gallery
- Two ozone contact basins
- An ozone destruct room
- Chemical building
- Central North Aqueduct (outside of SOWTP property) which includes:

- 12,800 feet of 54-inch pipeline in La Honda Road, D Avila Way, and San Pablo Dam Road (El Sobrante and Richmond)
- 2,400 feet of 72-inch pipeline in San Pablo Dam Road and El Portal Drive (Richmond, Rollingwood, San Pablo, and El Sobrante)
- 6,500 feet of 54-inch pipeline in Rollingwood Drive, Road 20, and San Pablo Avenue (San Pablo & Rollingwood)

The Project also includes demolition of the existing wash water settling basins, reclaim pumping plant, solids pumping plant, solids detention basins, and related vaults, mechanical, and electrical equipment after completion of Phase 1.

1.2 Purpose of Aquatic Resource Delineation

Sequoia Ecological Consulting, Inc. (Sequoia) conducted a delineation of aquatic resources potentially regulated by the United States Army Corps of Engineers (USACE) under Section 404 of the federal Clean Water Act (CWA) within the Study Area as shown in Figure 4. Though USACE delineation methodology and potential CWA jurisdiction are the focus of this report, potential waters of the state under the California State Water Resources Control Board (SWRCB) *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* are also delineated. Aquatic resources were defined for the purpose of evaluating potential Project effects on federal and state jurisdictional wetlands and other waters of the United States (US) or waters of the state, hereinafter all referred to as “Waters.”



2 Regulatory Background

2.1 USACE Jurisdictional Waters

In accordance with Section 404 of the CWA, USACE regulates the discharge of dredged or fill material into “Waters of the United States” (WOTUS). On November 18, 2021, the U.S. Environmental Protection Agency (EPA) and USACE announced the signing of a proposed rule to revise the definition of WOTUS to pre-2015 language after the Navigable Waters Protection Rule (NWPR) was deemed insufficient in protecting WOTUS (USEPA, 2021) (Proposed Rule). In anticipation of the impending publication of the proposed rule in the Federal Register, WOTUS are defined based on the previous definition of WOTUS in 40 CFR 230.3(s) as:

1. *All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
2. *All interstate waters including interstate wetlands;*
3. *All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:*
 - a. *Which are or could be used by interstate or foreign travelers for recreational or other purposes; or*
 - b. *(From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or*
 - c. *Which are used or could be used for industrial purposes by industries in interstate commerce;*
4. *All impoundments of waters otherwise defined as waters of the United States under this definition;*
5. *Tributaries of waters identified in paragraphs (s)(1) through (4) of this section;*
6. *The territorial sea;*
7. *Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (s)(1) through (6) of this section; waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.*

The CWA grants dual regulatory authority of Section 404 to the US Environmental Protection Agency (EPA) and USACE. The USACE is responsible for issuing and enforcing permits for activities in CWA jurisdictional waters in conjunction with prior permitting authorities in navigable waters under the Rivers and Harbors Act of 1899. The EPA is responsible for providing oversight of the permit program. The EPA has developed guidelines for permit review (Section 404 [b][1] Guidelines) and has the authority to veto permits by designating certain sites as non-fill areas (Section 404[c] of the CWA). The EPA also has enforcement authority under Section 404.

The USACE generally extends its jurisdiction to all areas meeting the criteria for WOTUS. WOTUS exclude isolated waters that are not hydrologically connected to navigable rivers and streams. Additionally, USACE jurisdiction over wetlands created by artificial means is decided on a case-by-case basis. The USACE generally does not assume jurisdiction over areas that are (1) artificially irrigated and would revert to upland habitat if the irrigation ceased; or (2) artificial lakes and ponds created by excavating and/or diking of dry land to collect and retain water, used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing. Other areas that are not considered CWA jurisdictional WOTUS include waste treatment ponds, ponds formed by construction activities including borrow pits until abandoned, and ponds created for aesthetic reasons such as reflecting or ornamental ponds (33 CFR Part 328.3).

2.1.1 Wetlands

According to the USACE Wetland Delineation Manual, wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions” (USACE, 2008).

The Proposed Rule that describes WOTUS under CWA defines “adjacent wetlands” as wetlands that are adjacent to traditional navigable waters, interstate waters, or the territorial seas; wetlands adjacent to relatively permanent, standing, or continuously flowing impoundments or tributaries and that have a continuous surface connection to such waters; and wetlands adjacent to impoundments or tributaries that meet the significant nexus standard when the wetlands either alone or in combination with similarly situational waters in the region, significantly affect the chemical, physical, or biological integrity of foundational waters. The term ‘adjacent’ is defined as:

... bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are adjacent wetlands.

2.1.2 Wetland Parameters

Wetlands are delineated using three parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. According to USACE, indicators for all three parameters must normally be present to qualify as a wetland.

2.1.2.1 Hydrophytic Vegetation

Hydrophytic vegetation is defined as “the sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content” (USACE, 1987). The vegetation criterion is considered fulfilled at a location if vegetation in the area is dominated by species that are tolerant of prolonged inundation or soil saturation.

2.1.2.2 Hydric Soils

A hydric soil is a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation (USACE, 1987). Hydric soil indicators are formed predominantly by the accumulation or loss of iron, manganese,

sulfur or carbon compounds (USACE, 2008). The hydric soil criterion is considered fulfilled at a location if soils in the area can be inferred to have a high groundwater table, evidence of prolonged soil saturation exists, or any indicators suggesting a long-term reducing environment in the upper 18 inches of the soil profile are present.

2.1.2.3 Wetland Hydrology

The presence of wetland hydrology indicators confirm that inundation or saturation has occurred on a site, but may not provide information about the timing, duration, or frequency of the event. Hydrology features are generally the most ephemeral of the three wetland parameters (USACE, 2008). The wetland hydrology criterion is considered fulfilled at a location if, based upon the conclusions inferred from the field observations, an area has a high probability of being periodically inundated or has soils saturated to the surface at some time during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone (USACE, 1987). If at least one primary indicator or at least two secondary indicators are found at a sample point, the wetland hydrology criterion is considered fulfilled.

2.1.2.4 Atypical Situations

Because there are situations in which one or more of the wetland parameters has been removed or altered due to recent natural events or human activities, the definition of a wetland includes the phrase “under normal circumstances” (USACE, 1987). To describe these conditions, USACE uses definitions for atypical situations and problem areas. They are as follows:

Atypical situation . . . refers to areas in which one or more parameters (vegetation, soil, and/or hydrology) have been sufficiently altered by recent human activities or natural events to preclude the presence of wetland indicators of the parameter (USACE, 1987).

Problem areas . . . wetland types in which wetland indicators of one or more parameters may be periodically lacking due to normal seasonal or annual variations in environmental conditions that result from causes other than human activities or catastrophic natural events. Representative examples of problem areas include seasonal wetlands, wetlands on drumlins, prairie potholes, and vegetated flats (USACE, 1987).

Atypical situations and problem areas may lack one or more of the three criteria, yet still may be considered wetlands. Background information on the previous condition of the area, field observations and/or the identification of undisturbed reference sites adjacent to atypical sites may indicate that the site met the wetland criteria prior to disturbance. Additional delineation procedures would be employed if normal circumstances did not occur on a site.

2.1.3 Non-Wetland Waters

The USACE also requires the delineation of non-wetland jurisdictional WOTUS. These waters must have strong hydrology indicators, such as the presence of seasonal flows and an ordinary high watermark (OHWM). An OHWM is defined as:

...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and

debris, or other appropriate means that consider the characteristics of the surrounding areas (33 CFR Part 328.3).

Areas delineated as non-wetland jurisdictional waters include rivers, streams, lakes, and other areas that lack wetland vegetation and characteristics, but hold water.

2.2 California Department of Fish and Wildlife Jurisdictional Waters

Under Sections 1600–1607 of the Fish and Game Code, California Department of Fish and Wildlife (CDFW) regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. CDFW has jurisdiction over riparian habitats (e.g., riparian woodland) associated with watercourses. CDFW jurisdictional waters are delineated by the distances between the outer edges of riparian vegetation or at the tops of the banks of streams or lakes, whichever is wider. CDFW may also assert jurisdiction over modified or man-made waterways; such jurisdiction is generally based on the value of such features to support riparian or aquatic plant or animal species. For clarification of features that may be subject to CDFW jurisdiction, the CDFW Legal Advisor has prepared the following opinion (CDFG ESD, 1994):

- Natural waterways that have been subsequently modified and which have the potential to contain fish, aquatic insects, and riparian vegetation will be treated like natural waterways.
- Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses should be treated by [CDFW] as natural waterways.
- Artificial waterways without the attributes of natural waterways should generally not be subject to Fish and Game Code provisions.

CDFW jurisdictional limits may also include artificial stock ponds and irrigation ditches constructed within uplands, and outer drip line limits of adjacent riparian habitat supported by a river, stream, or lake regardless of the riparian area's federal status or its location beyond the defined bed, bank, or channel.

2.3 Regional Water Quality Control Board Jurisdictional Waters

The Regional Water Quality Control Board (RWQCB) is the regional agency responsible for protecting water quality in California. The jurisdiction of this agency includes Waters of the State (WOS) as mandated by the federal CWA Section 401. On April 6, 2021, the State Water Resources Control Board adopted a resolution to confirm that the "State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State" is in effect as state policy for water quality control. WOS are defined in State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (State Water Resources Control Board, 2021) to include any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCB defines wetlands as:

An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic

conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The following wetlands are identified in the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State as WOS:

1. *Natural wetlands;*
2. *Wetlands created by modification of a surface water of the state, and*
3. *Artificial wetlands that meet any of the following criteria:*
 - a. *...Approved by an agency as compensatory mitigation for impacts to other WOS, except where the approving agency explicitly identifies the mitigation as being of limited duration;*
 - b. *Specifically identified in a water quality control plan as a wetland or other water of the state;*
 - c. *Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or*
 - d. *Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not WOS unless they also satisfy the criteria set forth in 2, 3a, or 3b):*
 - i. *Industrial or municipal wastewater treatment or disposal,*
 - ii. *Settling of sediment,*
 - iii. *Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program,*
 - iv. *Treatment of surface waters,*
 - v. *Agricultural crop irrigation or stock watering,*
 - vi. *Fire suppression,*
 - vii. *Industrial processing or cooling,*
 - viii. *Active surface mining – even if the site is managed for interim wetlands functions and values,*
 - ix. *Log storage,*
 - x. *Treatment, storage, or distribution of recycled water, or*
 - xi. *Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or*
 - xii. *Fields flooded for rice growing.*

All artificial wetlands that are less than an acre in size and do not satisfy the criteria set forth in 2, 3.a, 3.b, or 3.c are not WOS. If an aquatic feature meets the wetland definition, the burden is on the applicant to demonstrate that the wetland is not a WOS.

3 Methods

Prior to the field delineation, available reference materials were reviewed, including the Web Soil Survey (NRCS, 2021a), hydric soils lists (NRCS, 2021b), National Wetlands Inventory (USFWS, 2021), National

Hydrography Dataset (USGS, 2021), geologic data (California Geological Survey, 2010), topographic maps (USGS, 2016), and aerial imagery. A routine-level aquatic resource delineation was conducted on the Study Area on July 20, 2021.

The Study Area (Figure 2) was field checked for indicators of hydrophytic vegetation, wetland hydrology, and hydric soils. During the aquatic resource delineation, 13 sample points were taken on the Study Area and recorded on USACE data forms provided in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Arid West Manual; USACE, 2008a). USACE data forms are included in Appendix A.

This aquatic resource delineation was conducted in accordance with the Arid West Manual and the *Corps of Engineers Wetlands Delineation Manual* (USACE Manual; Environmental Laboratory, 1987). Based on the presence or absence of field indicators—including vegetation, hydrology and soils—the limits of potential jurisdictional wetlands and other WOTUS were determined. Potential jurisdictional wetlands and other waters were mapped with a Trimble GPS unit (sub-meter accuracy) and overlain on a digital orthophoto using ArcGIS mapping software.

3.1 Hydrophytic Vegetation

Hydrophytic vegetation is defined as “the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present” (Environmental Laboratory, 1987). To determine if hydrophytic vegetation is present, each plant species occurring in a sample plot is identified and assigned a wetland indicator status (Table 1) based on the *National Wetland Plant List* (USACE, 2020).



Figure 2. Study Area Locality Map.

Table 1. Wetland Plant Indicator Status.

Indicator Status Rating	Designation	Qualitative Description (USACE, 2018)
Obligate (OBL)	Hydrophyte	Almost always occur in wetlands
Facultative Wetland (FACW)	Hydrophyte	Usually occur in wetlands, but may occur in non-wetlands
Facultative (FAC)	Hydrophyte	Occur in wetlands and non-wetlands
Facultative Upland (FACU)	Nonhydrophyte	Usually occur in non-wetlands, but may occur in wetlands
Upland (UPL)	Nonhydrophyte	Almost never occur in wetlands

Plants that have an indicator status of OBL, FACW, and FAC are considered to be typically adapted for life in anaerobic soils conditions, and qualify as hydrophytic species for Section 404 delineations. If more than 50 percent of the dominant plant species present in a sample plot are classified as hydrophytic species (e.g., FAC or wetter), the area has met the hydrophytic vegetation criterion. Dominant species are selected using the “50/20 rule” (USACE, 2008a), as defined below:

- More than 50 percent of the dominant plant species across all strata are rated OBL, FACW, or FAC.
- Dominant species are the most abundant plant species that individually or together account for more than 50 percent of the total coverage of vegetation in the stratum, plus any additional species that, by itself, comprises at least 20 percent of the total.

3.2 Wetland Hydrology

Wetland hydrology “encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season sufficient to create anaerobic and reducing conditions” (Environmental Laboratory, 1987). The USACE, CDFW, and RWQCB jurisdictional wetland hydrology criterion is satisfied if the area supports “14 or more consecutive days of flooding or ponding, or a water table 12 in. (30 cm) or less below the soil surface, during the growing season at a minimum frequency of 5 years in 10 (50 percent or higher probability)” (USACE, 2008a). If recorded data—such as stream, tidal gauge, or hydrologic monitoring—are lacking, field indicators are used to determine the presence of wetland hydrology. Field indicators include primary indicators, such as observed inundation or saturation, biotic crust, and oxidized rhizospheres on living roots; or secondary indicators, such as drainage patterns and FAC-neutral test. The presence of one primary indicator, or two secondary indicators, is sufficient to conclude that an area has wetland hydrology (USACE, 2008a).

3.3 Hydric Soils

Hydric soils are defined by the Natural Resources Conservation Service as “soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil” (Federal Register, 1994). Nearly all hydric soils exhibit characteristic morphologies that result from repeated periods of saturation or inundation, or both, for

more than a few days. Characteristic hydric soil indicators observable in the field include: histic epipedons; sulfidic material; aquic or preaquic moisture regime; reducing conditions; iron and manganese concretions; and soil colors (gleyed soils, soils with mottles and/or low chroma matrix). Color designations are determined by comparing a soil sample with a standard Munsell soil color chart (Gretag Macbeth, 2000). The presence of any one of the above listed field indicators is considered sufficient to meet the hydric soil criterion.

3.4 Other Waters

In addition to potential federal or state jurisdictional wetlands, this study evaluated the presence of any WOTUS and WOS potentially subject to jurisdiction under Section 404 of the CWA or subject to state jurisdiction under the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*. “Other Waters” are seasonal or perennial water bodies, such as lakes, stream channels, drainages, ponds, and other surface water features that exhibit an OHWM but lack positive indicators of one or more of the three wetland parameters (hydrophytic vegetation, wetland hydrology, hydric soils; Federal Register, 1986). In non-tidal “other waters,” USACE jurisdiction extends to the OHWM, as defined in Section 2.1.3. CDFW and RWQCB jurisdiction extends to the outer limits of the drip line of riparian dependent vegetation.

4 Environmental Setting

The Study Area for the aquatic resources delineation is located at 5500 Amend Road in El Sobrante, Contra Costa County, California (Figure 2). The Study Area covers 21.58-acres and includes two areas: the area of the existing SOWTP and proposed Phase 1 and Phase 2 Project improvements, covering approximately 20.80-acres, and the area of the existing reclaim pumping plant and reclaim basins proposed for demolition, covering 0.78-acres, located approximately 300-feet southwest of the SOWTP (Figure 1). The majority of the Study Area consists of facilities and other infrastructure associated with ongoing SOWTP operations, including buildings, roads, parking lots, storage areas, and water treatment facilities. The northern portion of the Study Area is undeveloped, but is mowed annually for fire control.

Land uses surrounding the Study Area consist of residential development, with patches of undeveloped land to the east and southeast. The area where demolition will occur near the solids detention basin and solids pumping plant was excluded from the aquatic resource delineation as the character is primarily developed.

4.1 Vegetation

Five vegetation types/habitats are present within the Study Area: non-native/annual grassland, coast live oak woodland, seasonal wetland, willow riparian, and developed/ruderal (Figure 3). Herbaceous semi-natural alliance¹, covers the northern portion of the Study Area and consists primarily of non-

¹ Alliance nomenclature follows Sawyer et al. (2009) and online updates.

native grasses and forbs adapted to disturbance. The northern non-native/annual grassland and the seasonal wetland habitats were mowed in mid-May 2021, with only thatch or stubble remaining at the time of the July 20, 2021 delineation, making plant identification difficult, and species that were present were unidentifiable during the field work. Though not all plant species were identifiable in mowed areas, dominant species were determined by identifying re-sprouting plant species, remnant dead identifiable individuals, and adjacent undisturbed vegetation.

Species observed included wild oat (*Avena* sp.²), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), Italian ryegrass (*Festuca perennis*), field bindweed (*Convolvulus arvensis*), vetch (*Vicia sativa*), English plantain (*Plantago lanceolata*), summer mustard (*Hirschfeldia incana*), bird's-foot trefoil (*Lotus corniculatus*), and wild radish (*Raphanus sativus*).

The coast live oak woodland habitat, composed of the *Quercus agrifolia* forest and woodland alliance, are dominated by a canopy of coast live oak (*Quercus agrifolia*) in the northwestern and southeastern corners of the Study Area. The understory consists of shrubs and herbaceous species, including poison oak (*Toxicodendron diversilobum*), Himalayan blackberry (*Rubus armeniacus*), and non-native grasses and forbs described above for non-native grassland.

The seasonal wetland habitat, composed of a mix of herbaceous alliances, is dominated by wetland-classified plant species, including Italian ryegrass, broad-leaved cattail (*Typha latifolia*), bulrush (*Schoenoplectus* sp.), iris-leaved rush (*Juncus xiphioides*), spreading rush (*Juncus patens*), Mediterranean barley (*Hordeum marinum* subsp. *Gussoneanum*), creeping wildrye (*Elymus triticoides*), velvet grass (*Holcus lanatus*), bristly ox-tongue (*Helminthotheca echioides*), and willow herb (*Epilobium ciliatum*). Seasonal wetlands support all three wetland parameters and are potential USACE and RWQCB jurisdictional wetlands (described below).

The willow riparian habitats, composed of the *Salix gooddingii* - *Salix laevigata* forest and woodland alliance, occurs within and adjacent to seasonal wetlands, and consists of a canopy of red willow (*Salix laevigata*) and box elder (*Acer negundo*). Areas within the broader willow riparian canopy that support seasonal wetland species in the understory and meet all three wetland parameters were included within the seasonal wetland area and are potential USACE, CDFW, and RWQCB jurisdictional wetlands (described below).

The developed/ruderal habitat, not conforming to any recognized vegetation classification system, includes all developed areas within the SOWTP, including buildings, roads, parking lots, storage areas, and water treatment facilities. The developed/ruderal habitat also includes areas landscaped with ornamental species, as well as areas of bare ground or ruderal non-native grasses and forbs described above for non-native grassland.

² Botanical nomenclature follows The Jepson Flora Project (2021).

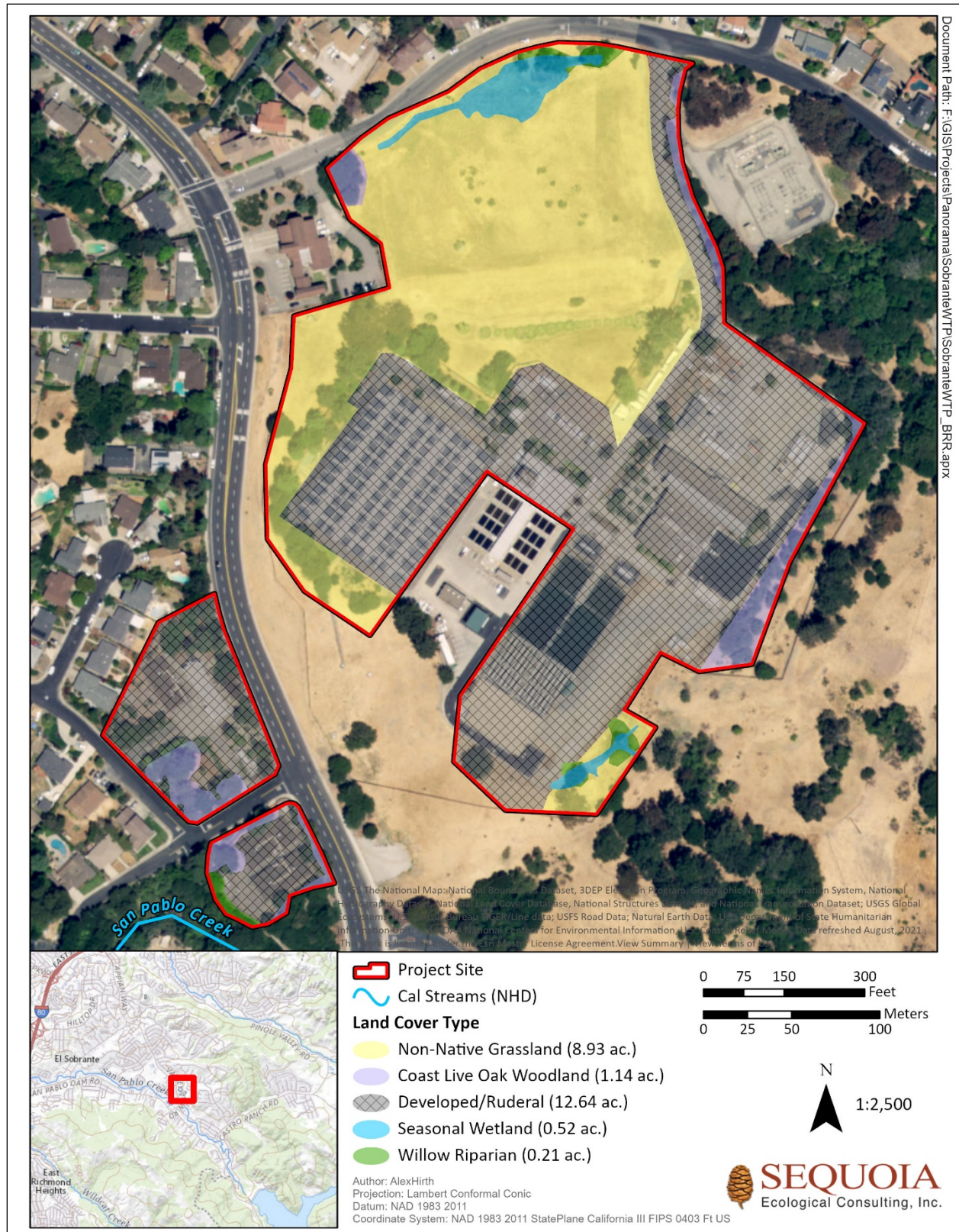


Figure 3. Vegetation Map of the Study Area.

4.2 Topography, Geology, and Soils

Elevations within the Study Area range from approximately 100 to 400-feet above mean sea level. The Study Area is located within the United States Geological Survey (USGS) Richmond, CA 7.5-minute topographic quadrangle (USGS, 2016) (Figure 6). Most of the Study Area occurs on a terrace that slopes moderately to steeply to the south and west. The Study Area is underlain by continental sedimentary rocks (sandstone, shale, and gravel deposits) of Pliocene-Pleistocene age (California Geological Survey, 2010).

Four soil types have been mapped on the Study Area in the Natural Resource Conservation Service (NRCS) Web Soil Survey as shown in Figure 4 (NRCS, 2021a):

- CeA—Conejo clay loam, 0 to 2 percent slopes, MLRA 14
- CkB—Cropley clay, 2 to 5 percent slopes
- CnE—Cut and fill land-Los Osos complex, 9 to 30 percent slopes
- DdE—Diablo clay, 15 to 30 percent slopes, MLRA 15

Conejo clay loam, 0 to 2 percent slopes, MLRA 14, is well drained, found on stream terraces, and is derived from alluvium from sedimentary rock. A typical profile consists of clay loam from 0 to 60 inches.

The depth to water table and a restrictive feature is greater than 80 inches. Conejo clay loam is listed as a hydric soil when containing depressions and/or Clear Lake components (NRCS, 2021b).

Cropley clay, 2 to 5 percent slopes, is moderately well drained, found in valleys, and is derived from alluvium. A typical profile consists of clay from 0 to 60 inches. The depth to water table and a restrictive feature is greater than 80 inches. Cropley clay is listed as a hydric soil when containing depressions and/or Clear Lake or Pescadero components (NRCS, 2021b).

Cut and fill land-Los Osos complex, 9 to 30 percent slopes, is well drained, found on hills, and is derived from residuum weathered from sandstone and shale. A typical profile consists of clay loam from 0 to 8 inches, clay from 8 to 27 inches, and bedrock from 27 to 31 inches. The depth to water table is greater than 80 inches and the depth to a restrictive feature (paralithic bedrock) is 24 to 40 inches. Cut and fill land-Los Osos complex is not listed as a hydric soil (NRCS, 2021b).

Diablo clay, 15 to 30 percent slopes, MLRA 15, is well drained, found on mountain slopes and hillslopes, and is derived from residuum weathered from calcareous shale. A typical profile consists of clay from 0 to 53 inches and bedrock from 53 to 79 inches. The depth to water table is greater than 80 inches and the depth to a restrictive feature (paralithic bedrock) is 40 to 59 inches. Diablo clay is not listed as a hydric soil (NRCS, 2021b).

Soils observed within soil pits in the Study Area are described on USACE datasheets in Appendix A. A soil map is included in Appendix B.

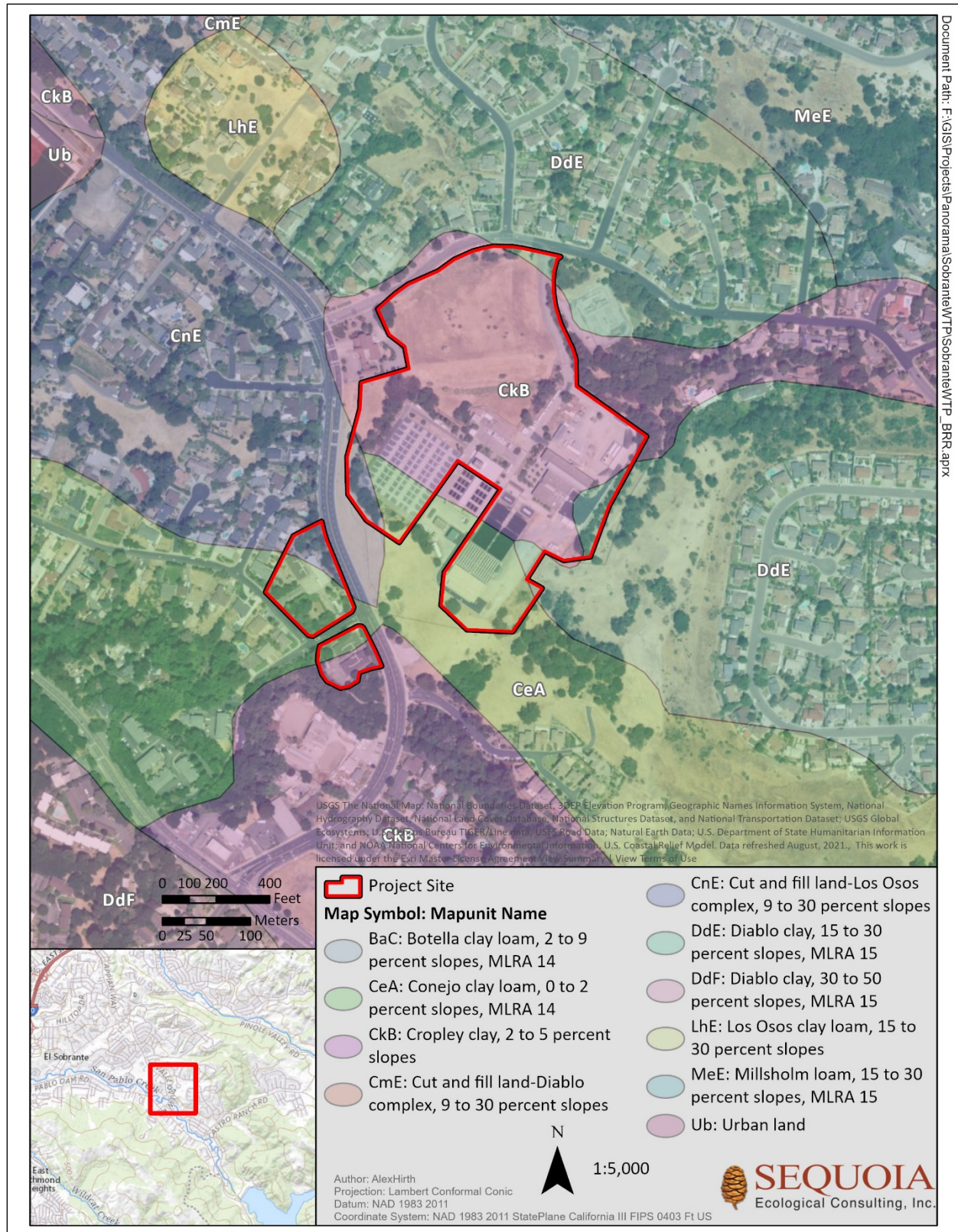


Figure 4. Soils Map of the Study Area.

4.3 Hydrology

The principal hydrologic sources for the Study Area are direct precipitation, surface runoff and near-surface flow from adjacent uplands, and weakly channelized flow emerging from a culvert under Amend Road and draining through a roadside drainage swale/channel in the northern portion of the Study Area. The swale/channel is mapped as a riverine wetland in the National Wetlands Inventory (NWI; USFWS 2021; Figure 7) but is not shown as a “blue line” stream in the USGS Richmond 7.5-minute topographic quadrangle (USGS, 2016) or included in the National Hydrography Dataset (NHD; USGS, 2021). The swale/channel emerges from a culvert under Amend Road in the northeastern portion of the Study Area and drains southwest as a broad swale complex and into a culvert under a dirt access road. The culvert discharges into an ephemeral drainage channel below the access road that flows southwest for approximately 100-feet and into a concrete culvert under residential development adjacent to the northwestern corner of the Study Area. The culvert presumably discharges via a storm drain network into San Pablo Creek, located south of the southwestern portion of the Study Area. San Pablo Creek, a perennial stream, drains generally westbound before discharging eventually into San Pablo Bay, approximately 6-miles west of the Study Area.

No other wetlands, ponds, or drainages were mapped on the Study Area in the NHD, NWI, or USGS Richmond 7.5-minute topographic quadrangle, though two riverine wetlands are mapped in the NWI adjacent to the east and south Study Area boundary (Figure 5).

Due to low precipitation during the 2020 to 2021 water year, hydrology on the Study Area should be interpreted cautiously. Historical aerial imagery was analyzed to help determine areas of ponding and saturation during a more typical rainfall year. Some wetland hydrology indicators that were used (such as drainage patterns, sediment deposits, surface soil cracks, FAC-neutral test, oxidized rhizospheres) may persist across years and are not necessarily responding to 2021 rainfall. In addition to wetland hydrology, hydric soil, and hydrophytic vegetation indicators, other factors independent of rainfall, such as topography, were also used to help determine the location of the wetland boundary.

5 Results

Aquatic resources identified in the Study Area during the July 20, 2021 delineation fall into three categories: potential jurisdictional wetlands, potential jurisdictional other waters, and CDFW riparian areas. Areas of wetlands and other waters are potentially subject to USACE, RWQCB, and CDFW jurisdiction. Riparian vegetation (e.g., oak trees) that extends from top of bank outward and to the outer edge of the riparian drip line is potentially subject to CDFW jurisdiction (Figure 5).

Aquatic resources identified during the July 20, 2021 delineation are discussed below and are listed in Table 2. Delineation datasheets are included in Appendix A and a map of aquatic resources is included in Figure 5. Photographs of representative aquatic resources and delineation sample points are included in Appendix C. A list of all plant species observed within the Study Area, and their wetland indicator status, is included in Appendix D.

Table 2. Aquatic Resources Delineated on the Study Area.

Feature Name	Area (Ft ²)	Length (ft)	Ave. Width (ft)	Sample Point	Bed/Bank /OHWM	Presumed Hydrology	Cowardin Class ³	Lat/Long
Potential USACE, RWQCB, and CDFW Jurisdictional Wetlands								
W1	17,541	N/A	N/A	1a, 2a, 3a	No	Seasonal	PEM ⁴	37.966498, -122.280332
W2	3,728	N/A	N/A	7a	No	Seasonal	PEM	37.963067, -122.279708
Potential USACE, RWQCB, and CDFW Jurisdictional Other Waters								
D1	294	98	3	4	Yes	Ephemeral	R6 ⁵	37.966073, -122.281372

5.1.1 Potential Jurisdictional Wetlands

Two areas were delineated in the Study Area that have positive indicators of all three wetland parameters: Wetland 1 (W1) and Wetland 2 (W2) (Table 2; Figure 6). W1 and W2 consist of seasonal wetlands (with inclusions of areas within the willow riparian canopy that support seasonal wetland species in the understory and meet all three wetland parameters) that are located along swales.

W1 covers 17,541 ft² (0.403-acre) and is located along a swale that emerges below a culvert outfall under Amend Road. The swale drains southwest, broadens into a seep/swale complex, and then narrows into a more defined swale that drains into a culvert under a dirt access road. The culvert discharges into an ephemeral drainage (D1, described below). W1 is dominated by wetland-classified plant species, including bulrush, Italian ryegrass, spreading rush, bristly ox-tongue, velvet grass, creeping wildrye, and Mediterranean barley (Sample Point 1a, 2a, 3a; Appendix C-1, C-3, C-5). Hydric soil indicators are present, such as redox dark surface (F6), as well as wetland hydrology indicators, including oxidized rhizospheres along living roots (C3) and drainage patterns (B10). Adjacent terraces and slopes above the swale are dominated by upland-classified plant species and lack wetland hydrology and hydric soil indicators (Sample Point 1b, 2b, 3b; Appendix C-2, C-4, C-6).

W2 covers 3,728 ft² (0.086-acre) and emerges from a culvert outfall at the toe of a slope, drains southwest across a fill terrace via a ditch/swale, and discharges into a culvert under the existing SOWTP facilities. Though a small area of ponded water was observed at the culvert outfall, most of W2 was dry at the time of the delineation and presumably supports seasonal hydrology. W2 is dominated by wetland-classified plant species, including cattail, iris-leaved rush, willow herb, and bird's-foot trefoil (Sample Point 7a; Appendix C-11). Hydric soil indicators are present, such as redox dark surface (F6), as well as wetland hydrology indicators, including surface water (A1), high water table (A2), saturation

³ Cowardin classification system for wetlands developed by Cowardin and described in *Classification of Wetlands and Deepwater Habitats of the United States*. Cowardin system is used by the USFWS for the NWI. In this system, wetlands are classified by landscape position, vegetation cover and hydrologic regime and includes five major wetland types: marine, tidal, lacustrine, palustrine, and riverine.

⁴ PEM – Palustrine, EMergent

⁵ R6 – Riverine, Ephemeral. A wetland, spring, stream, river, pond or lake that only exists for a short period.

(A3), sediment deposits (B2), surface soil cracks (B6), drainage patterns (B10), and FAC-neutral test (D5). Adjacent terraces and slopes above the drainage are dominated by upland-classified plant species and lack wetland hydrology and hydric soil indicators (Sample Point 7b; Appendix C-12).

5.1.2 Potential Jurisdictional Other Waters

Potential jurisdictional “Other Waters” according to USACE and RWQCB regulations were delineated in the Study Area (Table 2; Figures 8 and 9). Potential jurisdictional “Other Waters” include an ephemeral drainage channel (D1) located below a culvert outfall connected to seasonal wetland W1. D1 is approximately 100-feet long within the Study Area, with an average width of approximately 3 feet. D1 supports a bed, bank, and OHWM (scour, sediment deposits, shelving, bed/bank), but lacks one or more wetland parameters (Sample Point 4; Appendix C-7, C-8). D1 was dry during the July 20, 2021 delineation and presumably supports ephemeral hydrology (flowing only in response to significant rain events) based on field indicators, though no recorded hydrologic data was available to document hydrology during a typical year. D1 drains into a concrete culvert in the northwestern corner of the Study Area which then goes under a residential development, and presumably discharges via a storm drain network into San Pablo Creek, located south of the southwestern portion of the Study Area. D1 was mapped as a riverine wetland in the NWI (Figure 6).

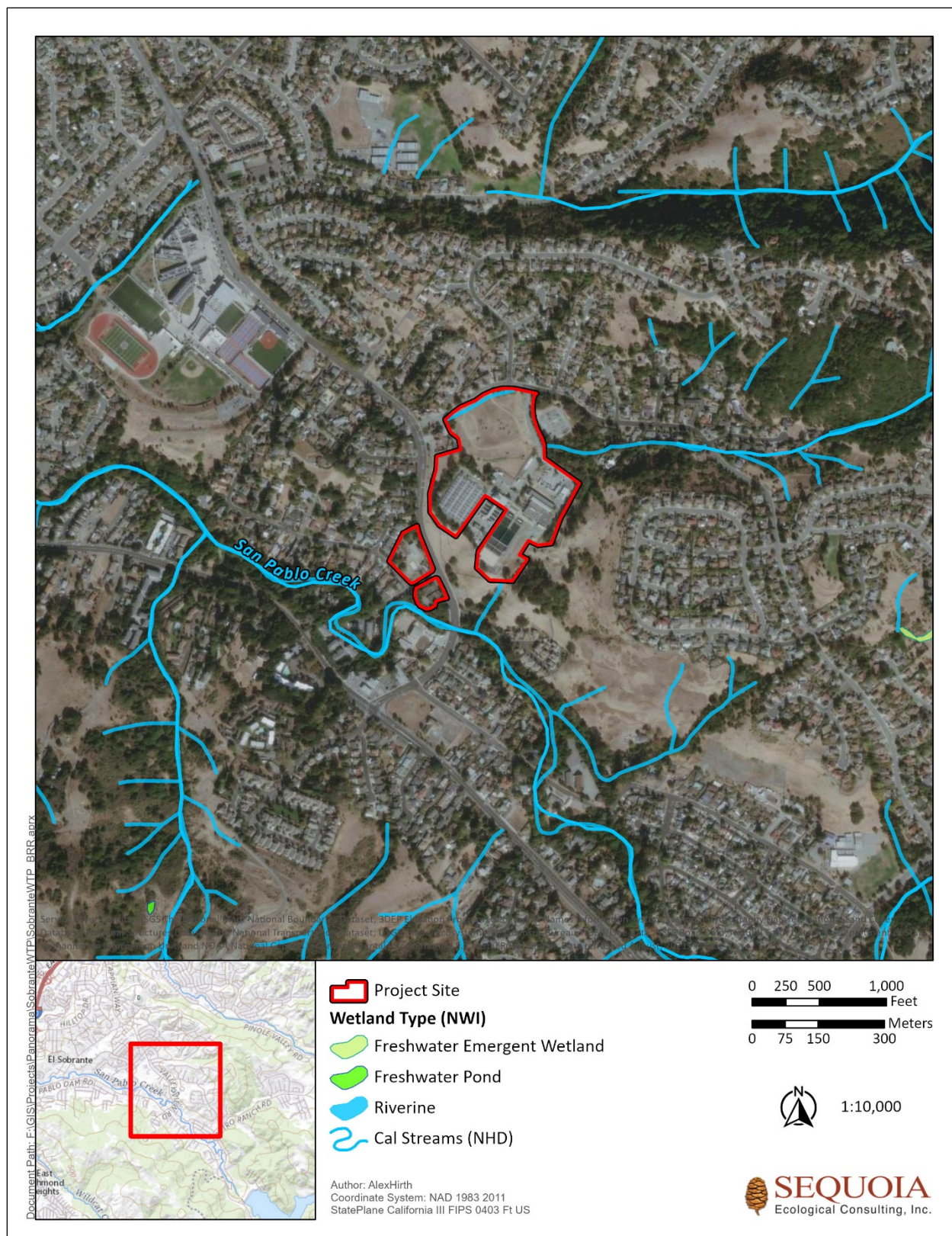


Figure 5. National Wetlands Inventory Map of the Study Area.



Figure 6. Delineation Map of the Study Area.

6 Agency Jurisdiction

6.1 Waters of the U.S. (Clean Water Act)

Potential CWA jurisdictional wetlands and “Other Waters” were delineated on the Study Area during the July 20, 2021 delineation (Table 2; Figure 8 and 9). Potentially jurisdictional wetlands had positive indicators of the three wetland parameters. Potentially jurisdictional other waters lacked at least one wetland parameter, but supported a bed, bank, and OHWM (Appendix A).

Seasonal Wetlands W1 and W2 are presumably connected via a storm drain network to San Pablo Creek, a perennial tributary of San Pablo Bay, a Traditional Navigable Water (TNW). A determination of whether W1 and/or W2 qualify as “wetlands adjacent to other jurisdictional waters”, and therefore subject to CWA jurisdiction under the November 2021 proposed rule defining WOTUS, would depend on whether the USACE considers these wetlands as “adjacent” to San Pablo Creek. In addition, though the drainage channel D1 appears to have ephemeral hydrology based on field indicators, no recorded hydrologic data was available to document hydrology during a typical year. If D1 supports intermittent hydrology during a typical year and therefore qualifies for CWA jurisdiction, W1 would presumably qualify for CWA jurisdiction as “wetlands adjacent to other jurisdictional waters”. The final status of all aquatic resources delineated in the Study Area would need to be determined by the USACE based on a verification of this report as a part of the Section 404 permitting process.

6.2 Waters of the State (RWQCB)

All aquatic resources delineated on the Study Area (W1, W2, D1), even if exempt from USACE jurisdiction, would likely qualify as WOS subject to jurisdiction by the SWRCB and RWQCBs under the State Wetland definition and procedures, as discussed in Section 2.3 and 3.4. However, as with the USACE, the RWQCB would need to determine the extent of its jurisdiction on the Study Area based on a verification of this report as a part of the 401 Water Quality Certification and State Dredge and Fill permit process.

6.3 California Department of Fish and Wildlife Section 1600 et seq.

All aquatic resources and associated riparian habitat (W1, W2, D1, and oak woodland adjacent to San Pablo Creek) delineated within the Study Area are likely subject to CDFW jurisdiction under the Fish and Game Code Sections 1600 *et seq.* (Table 3 and Figures 7, 8 and 9). A Lake or Streambed Alteration Agreement from CDFW would be required for impacts to oak woodlands and riparian habitat.

Table 3. Potential CDFW Jurisdictional Resources on the Study Area.

Wetland/Non-Wetland	Jurisdictional Agency	Area (sq. ft.)	Area (ac.)	Linear Feet
Non-wetland (D1 and Oak woodland)	Potential CDFW Jurisdiction	2,678	0.06	128
W1 (in area of W1)	Potential CDFW Jurisdiction	20,207	0.46	477
W2 (in area of W2)	Potential CDFW Jurisdiction	4,629	0.11	197

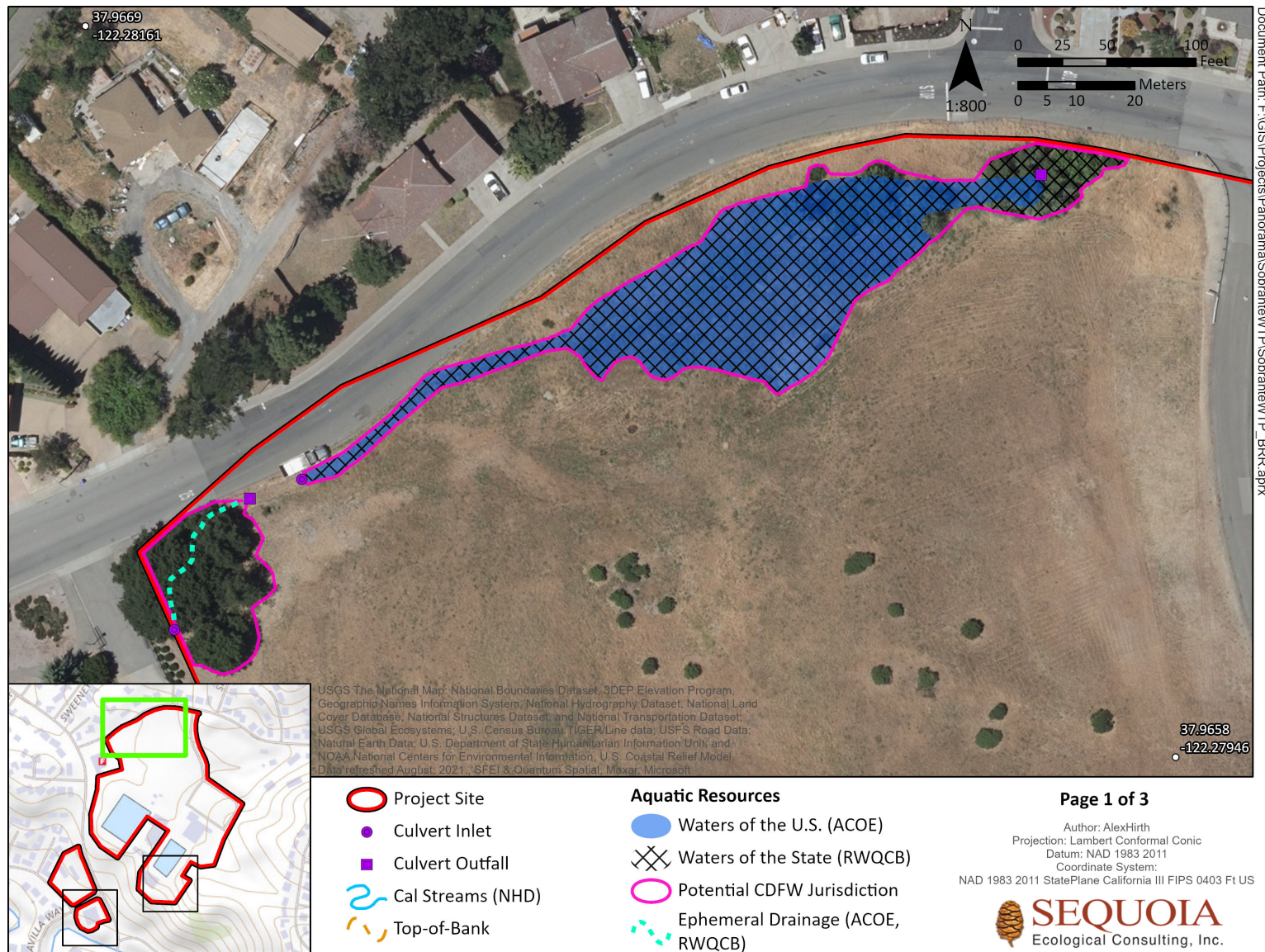


Figure 7. Delineation Map of the Northern Study Area According to Agency Jurisdiction.

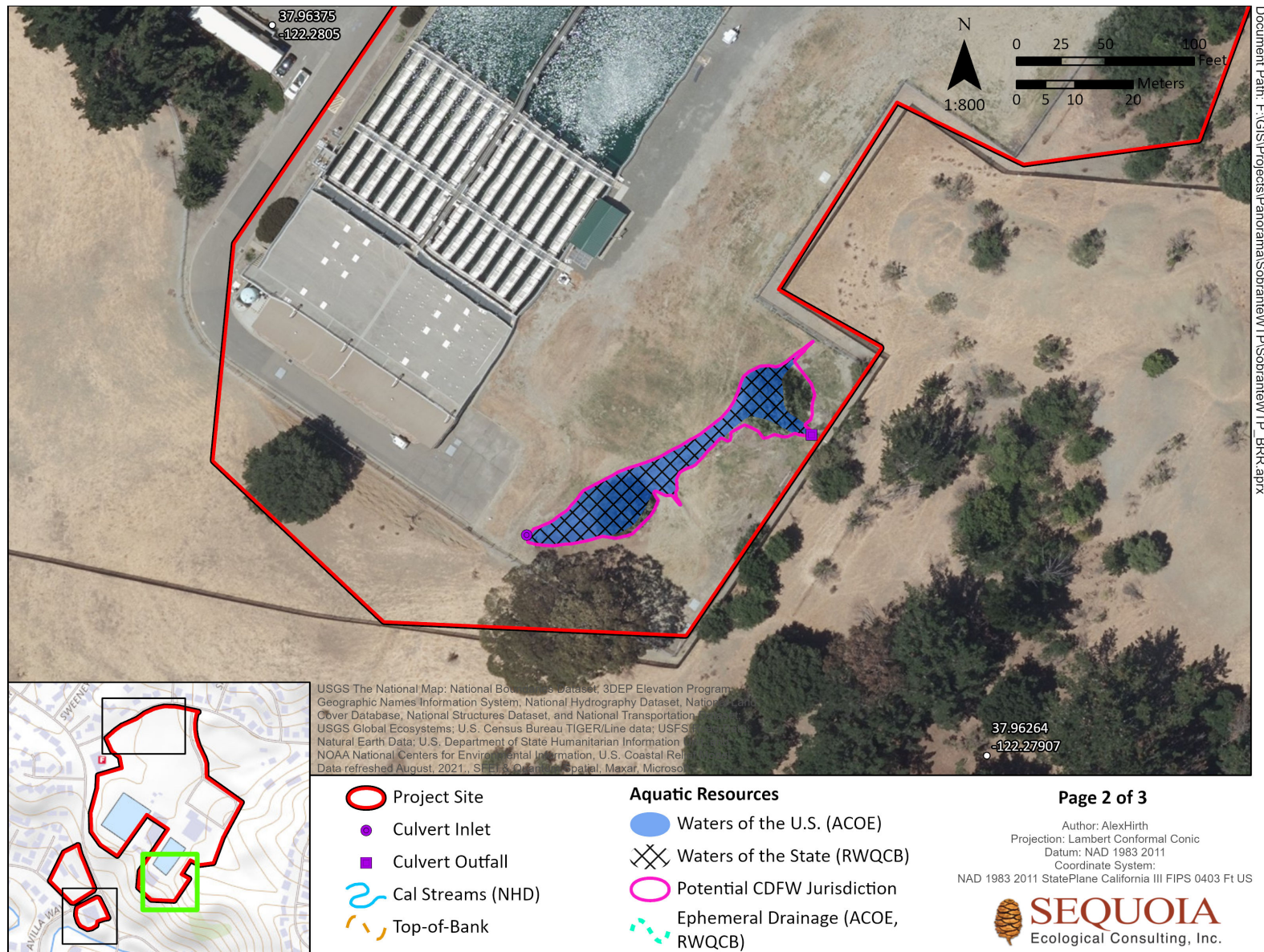


Figure 8. Delineation Map of the Southern Study Area According to Agency Jurisdiction.



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7 Permit Requirements

Work, such as placement of fill material, occurring within USACE jurisdiction normally requires a permit under Section 404 of the federal CWA. In addition, the USACE, under Section 401 of the federal CWA, is required to meet state water quality regulations prior to granting a Section 404 permit. Compliance with state water quality regulations is demonstrated by acquiring Section 401 Water Quality Certification through application with the local RWQCB. Streams, rivers, and lakes up to the top of bank or dripline of riparian vegetation (whichever is greater) also fall within the jurisdiction of the CDFW. Work within CDFW jurisdiction normally requires a Streambed Alteration Agreement.

8 Limitations

The results of this delineation are preliminary. Regulatory agencies, including the USACE, RWQCB, and CDFW, make the final determination about the location and extent of wetlands and other waters in the Study Area, and this delineation report should be sent to the USACE, CDFW, and RWQCB for verification. This report does not constitute authorization to conduct the Project, and all necessary permits and approvals should be obtained from regulatory agencies prior to project implementation. Mowing conducted prior to the July 20, 2021 delineation impacted plant identification on the Study Area. Best efforts were made to identify plant species in mowed areas, but a definitive plant identification could not be made in some cases.

9 References

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Appendix A: Delineation Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EBMUD Sobrante WTP, 5500 Amend Rd City/County: El Sobrante, Contra Costa Co. Sampling Date: 7/20/21
 Applicant/Owner: East Bay Municipal Utility District State: CA Sampling Point: 1a
 Investigator(s): T. Mahony Section, Township, Range: Land Grant
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 5
 Subregion (LRR): Mediterranean CA (LRR C) Lat: 37.966664 Long: -122.279922 Datum: NAD 83
 Soil Map Unit Name: Cropley clay, 2 to 5 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☒ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: Seasonal hydrology naturally problematic. Vegetation mowed. Sample point located in wetland swale below culvert outfall. All three wetland parameters met.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66</u> (A/B)
1. <u>Salix laevigata</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>30</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>5'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Cynodon dactylon (?)</u> <u>70</u> <u>Y</u> <u>FACU</u> 2. <u>Holcus lanatus</u> <u>20</u> <u>Y</u> <u>FAC</u> 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: <u>5'</u>) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain)				
Hydrophytic Vegetation Present? Yes ☒ No ☐				

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks:
 Vegetation has been mowed; plant ID difficult. Sample point dominated by hydrophytic vegetation.

SOIL

Sampling Point: 1a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 2/1	95	10YR 5/6	5	C	M	clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

None

Remarks:

Located in swale at base of culvert outfall. Wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EBMUD Sobrante WTP, 5500 Amend Rd City/County: El Sobrante, Contra Costa Co. Sampling Date: 7/20/21
 Applicant/Owner: East Bay Municipal Utility District State: CA Sampling Point: 1b
 Investigator(s): T. Mahony Section, Township, Range: Land Grant
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 10
 Subregion (LRR): Mediterranean CA (LRR C) Lat: 37.966701 Long: -122.279910 Datum: NAD 83
 Soil Map Unit Name: Cropley clay, 2 to 5 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☒ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Seasonal hydrology naturally problematic. Vegetation mowed. No wetland parameters met.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>5'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Avena sp.</u>	<u>70</u>	<u>Y</u>	<u>UPL</u>	
2. <u>Bromus catharticus</u>	<u>10</u>	<u>N</u>	<u>UPL</u>	
3. <u>Convolvulus arvensis</u>	<u>10</u>	<u>N</u>	<u>UPL</u>	
4. <u>Raphanus sativus</u>	<u>10</u>	<u>N</u>	<u>UPL</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>5'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5</u>	% Cover of Biotic Crust _____	Hydrophytic Vegetation Present? Yes ☐ No ☒		

Remarks:

Vegetation has been mowed; plant ID difficult. Sample point not dominated by hydrophytic vegetation.

SOIL

Sampling Point: 1b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 2/2	100					clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): none

Water Table Present? Yes _____ No ☒ Depth (inches): none

Saturation Present? Yes _____ No ☒ Depth (inches): none
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

None

Remarks:

Located on slope above swale. No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EBMUD Sobrante WTP, 5500 Amend Rd City/County: El Sobrante, Contra Costa Co. Sampling Date: 7/20/21
 Applicant/Owner: East Bay Municipal Utility District State: CA Sampling Point: 2a
 Investigator(s): T. Mahony Section, Township, Range: Land Grant
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 5
 Subregion (LRR): Mediterranean CA (LRR C) Lat: 37.966544 Long: -122.280092 Datum: NAD 83
 Soil Map Unit Name: Cropley clay, 2 to 5 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☒ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: Seasonal hydrology naturally problematic. Vegetation mowed. Sample point located in wetland swale. All three wetland parameters met.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>5'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes ☒ No ☐
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Schoenoplectus sp.</u>	<u>60</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Holcus lanatus</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
3. <u>Helminthotheca echioides</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
4. <u>Festuca perennis</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
5. <u>Cirsium vulgare</u>	<u>2</u>	<u>N</u>	<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>5'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5</u>	% Cover of Biotic Crust _____			

Remarks:

Vegetation has been mowed; plant ID difficult. Sample point dominated by hydrophytic vegetation.

SOIL

Sampling Point: 2a

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☒ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☒ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☒ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): <u>none</u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u>none</u> Saturation Present? Yes ☐ No ☒ Depth (inches): <u>none</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No ☐
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
None		
Remarks:		
Located in broad swale. Wetland hydrology indicators observed.		

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EBMUD Sobrante WTP, 5500 Amend Rd City/County: El Sobrante, Contra Costa Co. Sampling Date: 7/20/21
 Applicant/Owner: East Bay Municipal Utility District State: CA Sampling Point: 2b
 Investigator(s): T. Mahony Section, Township, Range: Land Grant
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 5
 Subregion (LRR): Mediterranean CA (LRR C) Lat: 37.966482 Long: -122.280040 Datum: NAD 83
 Soil Map Unit Name: Cropley clay, 2 to 5 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☒ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Seasonal hydrology naturally problematic. Vegetation mowed. No wetland parameters met.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>5'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Avena sp.</u> <u>80</u> <u>Y</u> <u>UPL</u> 2. <u>Helminthotheca echioides</u> <u>5</u> <u>N</u> <u>FAC</u> 3. <u>Convolvulus arvensis</u> <u>5</u> <u>N</u> <u>UPL</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: <u>5'</u>) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____				
Remarks: Vegetation has been mowed; plant ID difficult. Sample point not dominated by hydrophytic vegetation.				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Hydrophytic Vegetation Present? Yes ☐ No ☒				

SOIL

Sampling Point: 2b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 2/2	100					clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): none

Water Table Present? Yes _____ No ☒ Depth (inches): none

Saturation Present? Yes _____ No ☒ Depth (inches): none
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

None

Remarks:

Located on convex upland above swale. No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EBMUD Sobrante WTP, 5500 Amend Rd City/County: El Sobrante, Contra Costa Co. Sampling Date: 7/20/21
 Applicant/Owner: East Bay Municipal Utility District State: CA Sampling Point: 3a
 Investigator(s): T. Mahony Section, Township, Range: Land Grant
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 5
 Subregion (LRR): Mediterranean CA (LRR C) Lat: 37.966436 Long: -122.280633 Datum: NAD 83
 Soil Map Unit Name: Cropley clay, 2 to 5 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☒ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	Is the Sampled Area within a Wetland?	Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐		
Wetland Hydrology Present?	Yes ☒ No ☐		
Remarks: Seasonal hydrology naturally problematic. Vegetation mowed. Sample point located in wetland swale. All three wetland parameters met.			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>5'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Elymus triticoides (?)</u> <u>60</u> <u>Y</u> <u>FAC</u> 2. <u>Festuca perennis</u> <u>10</u> <u>N</u> <u>FAC</u> 3. <u>Helminthotheca echioides</u> <u>10</u> <u>N</u> <u>FAC</u> 4. <u>Hordeum marinum</u> <u>10</u> <u>N</u> <u>FAC</u> 5. <u>Avena sp.</u> <u>2</u> <u>N</u> <u>UPL</u> 6. _____ 7. _____ 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: <u>5'</u>) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____				

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%
☐ Prevalence Index is $\leq 3.0^1$
☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?

Yes ☒ No ☐

Remarks:

Vegetation has been mowed; plant ID difficult. Sample point dominated by hydrophytic vegetation.

SOIL

Sampling Point: 3a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 2/2	95	10YR 4/6	5	C	M	clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? Yes ☐ No ☒ Depth (inches): none
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

None

Remarks:

Located in broad swale. Wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EBMUD Sobrante WTP, 5500 Amend Rd City/County: El Sobrante, Contra Costa Co. Sampling Date: 7/20/21
 Applicant/Owner: East Bay Municipal Utility District State: CA Sampling Point: 3b
 Investigator(s): T. Mahony Section, Township, Range: Land Grant
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR): Mediterranean CA (LRR C) Lat: 37.966472 Long: -122.280648 Datum: NAD 83
 Soil Map Unit Name: Cropley clay, 2 to 5 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☒ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Seasonal hydrology naturally problematic. Vegetation mowed. No wetland parameters met.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>5'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Avena sp.</u>	<u>80</u>	<u>Y</u>	<u>UPL</u>	
2. <u>Helminthotheca echioides</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
3. <u>Convolvulus arvensis</u>	<u>5</u>	<u>N</u>	<u>UPL</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Present? Yes ☐ No ☒
Woody Vine Stratum (Plot size: <u>5'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u>	% Cover of Biotic Crust _____			

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

Vegetation has been mowed; plant ID difficult. Sample point not dominated by hydrophytic vegetation.

SOIL

Sampling Point: 3b

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): <u>none</u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u>none</u> Saturation Present? Yes ☐ No ☒ Depth (inches): <u>none</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
None		
Remarks:		
Located on terrace along road above swale. No wetland hydrology indicators observed.		

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EBMUD Sobrante WTP, 5500 Amend Rd City/County: El Sobrante, Contra Costa Co. Sampling Date: 7/20/21
 Applicant/Owner: East Bay Municipal Utility District State: CA Sampling Point: 4
 Investigator(s): T. Mahony Section, Township, Range: Land Grant
 Landform (hillslope, terrace, etc.): ephemeral drainage Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): Mediterranean CA (LRR C) Lat: 37.966133 Long: -122.281342 Datum: NAD 83
 Soil Map Unit Name: Cropley clay, 2 to 5 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☒ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: Seasonal hydrology naturally problematic. Located in ephemeral drainage channel, ~3-feet wide, with one wetland parameter met. Channel contains a bed, bank, and OHWM.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. <u>Quercus agrifolia</u>	<u>90</u>	<u>Y</u>	<u>UPL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>90</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>5'</u>) 1. <u>Rubus armeniacus</u> <u>2</u> <u>N</u> <u>FAC</u> 2. _____ 3. _____ 4. _____ 5. _____ <u>2</u> = Total Cover				
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Avena sp.</u> <u>1</u> <u>N</u> <u>UPL</u> 2. <u>Bromus diandrus</u> <u>1</u> <u>N</u> <u>UPL</u> 3. <u>Bromus madritensis</u> <u>1</u> <u>N</u> <u>UPL</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ <u>3</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>5'</u>) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>95</u> % Cover of Biotic Crust _____				

Hydrophytic Vegetation Indicators:
 ___ Dominance Test is >50%
 ___ Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
 Vegetation consists of overhanging Quercus agrifolia canopy, with drainage channel consisting of >95% bare ground. Sample point not dominated by hydrophytic vegetation.

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
None								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

Soil consists of riprap and fill material in drainage channel with no soil development. No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): none

Water Table Present? Yes _____ No ☒ Depth (inches): none

Saturation Present? Yes _____ No ☒ Depth (inches): none
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

None

Remarks:

Located in ephemeral drainage channel, ~3-feet wide, with bed, bank, and OHWM (scour, shelving, sediment deposits). Drains into culvert under residential development. Wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EBMUD Sobrante WTP, 5500 Amend Rd City/County: El Sobrante, Contra Costa Co. Sampling Date: 7/20/21
 Applicant/Owner: East Bay Municipal Utility District State: CA Sampling Point: 5
 Investigator(s): T. Mahony Section, Township, Range: Land Grant
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 1
 Subregion (LRR): Mediterranean CA (LRR C) Lat: 37.966213 Long: -122.280481 Datum: NAD 83
 Soil Map Unit Name: Cropley clay, 2 to 5 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☒ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Seasonal hydrology naturally problematic. Vegetation mowed. No wetland parameters met.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>5'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Bromus hordeaceus</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Hordeum marinum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Helminthotheca echioides</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. <u>Plantago lanceolata</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>5'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u>	% Cover of Biotic Crust _____			Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
Vegetation has been mowed; plant ID difficult. Sample point not dominated by hydrophytic vegetation.

SOIL

Sampling Point: 5**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/2	>99	10YR 4/6	<1	C	M	clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (**LRR C**)
☐ 1 cm Muck (A9) (**LRR D**)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (**LRR C**)
☐ 2 cm Muck (A10) (**LRR B**)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: hardpan
 Depth (inches): 8"

Hydric Soil Present? Yes ☐ No ☒

Remarks:

Scattered redox. No hydric soil indicators observed. Could not sample below hardpan.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1) (**Nonriverine**)
☐ Sediment Deposits (B2) (**Nonriverine**)
☐ Drift Deposits (B3) (**Nonriverine**)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Water-Stained Leaves (B9)

☐ Salt Crust (B11)
☐ Biotic Crust (B12)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

☐ Water Marks (B1) (**Riverine**)
☐ Sediment Deposits (B2) (**Riverine**)
☐ Drift Deposits (B3) (**Riverine**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none
 Water Table Present? Yes ☐ No ☒ Depth (inches): none
 Saturation Present? Yes ☐ No ☒ Depth (inches): none
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

None

Remarks:

Located on terrace/shallow swale that receives surface runoff from adjacent slopes. No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EBMUD Sobrante WTP, 5500 Amend Rd City/County: El Sobrante, Contra Costa Co. Sampling Date: 7/20/21
 Applicant/Owner: East Bay Municipal Utility District State: CA Sampling Point: 6
 Investigator(s): T. Mahony Section, Township, Range: Land Grant
 Landform (hillslope, terrace, etc.): swale/draw Local relief (concave, convex, none): concave Slope (%): 5
 Subregion (LRR): Mediterranean CA (LRR C) Lat: 37.965665 Long: -122.280269 Datum: NAD 83
 Soil Map Unit Name: Cropley clay, 2 to 5 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☒ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Seasonal hydrology naturally problematic. Vegetation mowed. No wetland parameters met.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>5'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Avena sp.</u> <u>70</u> <u>Y</u> <u>UPL</u> 2. <u>Plantago lanceolata</u> <u>5</u> <u>N</u> <u>FAC</u> 3. <u>Lotus corniculatus</u> <u>5</u> <u>N</u> <u>FAC</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: <u>5'</u>) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust _____				

Hydrophytic Vegetation Indicators:
 ___ Dominance Test is >50%
 ___ Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
Vegetation has been mowed; plant ID difficult. Sample point not dominated by hydrophytic vegetation.

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 2/2	100					clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: heavy clay
Depth (inches): 12"

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil indicators observed. Could not sample below hardpan.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none
Water Table Present? Yes ☐ No ☒ Depth (inches): none
Saturation Present? Yes ☐ No ☒ Depth (inches): none
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

None

Remarks:

Located in draw/swale that receives surface runoff from adjacent slopes. No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EBMUD Sobrante WTP, 5500 Amend Rd City/County: El Sobrante, Contra Costa Co. Sampling Date: 7/20/21
 Applicant/Owner: East Bay Municipal Utility District State: CA Sampling Point: 7a
 Investigator(s): T. Mahony Section, Township, Range: Land Grant
 Landform (hillslope, terrace, etc.): swale/ditch Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): Mediterranean CA (LRR C) Lat: 37.963135 Long: --122.279438 Datum: NAD 83
 Soil Map Unit Name: Conejo clay loam, 0 to 2 percent slopes, MLRA 14 NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☒ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: Seasonal hydrology naturally problematic. Sample point located in wetland swale/ditch. All three wetland parameters met.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>5'</u>) 1. <u>Cotoneaster sp.</u> <u>5</u> <u>N</u> <u>UPL</u> 2. <u>Salix laevigata</u> <u>5</u> <u>N</u> <u>FACW</u> 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Typha latifolia</u> <u>50</u> <u>Y</u> <u>OBL</u> 2. <u>Juncus xiphioides</u> <u>20</u> <u>Y</u> <u>OBL</u> 3. <u>Epilobium ciliatum</u> <u>10</u> <u>N</u> <u>FACW</u> 4. <u>Lotus corniculatus</u> <u>5</u> <u>N</u> <u>FAC</u> 5. _____ 6. _____ 7. _____ 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: <u>5'</u>) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____				

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
☐ Prevalence Index is $\leq 3.0^1$
☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?

Yes ☒ No ☐

Remarks:

Sample point dominated by hydrophytic vegetation.

SOIL

Sampling Point: 7a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	95	10YR 4/6	5	C	M	clay loam	
4-16	10YR 4/2	90	10YR 4/6	10	C	M	clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) **(Nonriverine)**
- ☒ Sediment Deposits (B2) **(Nonriverine)**
- ☐ Drift Deposits (B3) **(Nonriverine)**
- ☒ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) **(Riverine)**
- ☐ Sediment Deposits (B2) **(Riverine)**
- ☐ Drift Deposits (B3) **(Riverine)**
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): 2"

Water Table Present? Yes ☒ No ☐ Depth (inches): 0"

Saturation Present? Yes ☒ No ☐ Depth (inches): 0"
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

None

Remarks:

Located in swale/ditch at base of culvert outfall that receives hydrologic input from culvert and surface runoff from adjacent slope. Drains through swale/ditch and into outfall culvert under developed area of WTP. Wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EBMUD Sobrante WTP, 5500 Amend Rd City/County: El Sobrante, Contra Costa Co. Sampling Date: 7/20/21
 Applicant/Owner: East Bay Municipal Utility District State: CA Sampling Point: 7b
 Investigator(s): T. Mahony Section, Township, Range: Land Grant
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR): Mediterranean CA (LRR C) Lat: 37.963115 Long: -122.279455 Datum: NAD 83
 Soil Map Unit Name: Conejo clay loam, 0 to 2 percent slopes, MLRA 14 NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☒ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Seasonal hydrology naturally problematic. Vegetation mowed. No wetland parameters met.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>5'</u>) 1. <u>Cotoneaster sp.</u> <u>5</u> <u>N</u> <u>UPL</u>				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Avena sp.</u> <u>30</u> <u>Y</u> <u>UPL</u>				
2. <u>Lotus corniculatus</u> <u>30</u> <u>Y</u> <u>FAC</u>				
3. <u>Helminthotheca echioides</u> <u>10</u> <u>N</u> <u>FAC</u>				
4. <u>Vicia sativa (?)</u> <u>10</u> <u>N</u> <u>FACU</u>				
5. <u>Bromus diandrus</u> <u>10</u> <u>N</u> <u>UPL</u>				
6. _____				
7. _____				
8. _____				
_____ = Total Cover				Hydrophytic Vegetation Present? Yes ☐ No ☒
Woody Vine Stratum (Plot size: <u>5'</u>) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____				

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?

Yes ☐ No ☒

Remarks:

Vegetation has been mowed; plant ID difficult. Sample point not dominated by hydrophytic vegetation.

SOIL

Sampling Point: 7b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/2	100					clay loam	
8-16	10YR 4/2	95	10YR 4/2	5	C	M	clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: clay
Depth (inches): 8"

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none
Water Table Present? Yes ☐ No ☒ Depth (inches): none
Saturation Present? Yes ☐ No ☒ Depth (inches): none
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

None

Remarks:

Located on terrace above swale/ditch. No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EBMUD Sobrante WTP, 5500 Amend Rd City/County: El Sobrante, Contra Costa Co. Sampling Date: 7/20/21
 Applicant/Owner: East Bay Municipal Utility District State: CA Sampling Point: 8
 Investigator(s): T. Mahony Section, Township, Range: Land Grant
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): Mediterranean CA (LRR C) Lat: 37.962950 Long: -122.279601 Datum: NAD 83
 Soil Map Unit Name: Conejo clay loam, 0 to 2 percent slopes, MLRA 14 NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☒ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Seasonal hydrology naturally problematic. Vegetation mowed. No wetland parameters met.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u>) 1. _____ 2. _____ 3. _____ 4. _____ _____ = Total Cover Sapling/Shrub Stratum (Plot size: <u>5'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover Herb Stratum (Plot size: <u>5'</u>) 1. <u>Avena sp.</u> 30 Y UPL 2. <u>Lotus corniculatus</u> 30 Y FAC 3. <u>Bromus madritensis</u> 10 N UPL 4. <u>Vicia sativa</u> 10 N FACU 5. <u>Festuca perennis</u> 10 N FAC 6. <u>Bromus diandrus</u> 5 N UPL 7. _____ 8. _____ _____ 95 = Total Cover Woody Vine Stratum (Plot size: <u>5'</u>) 1. _____ 2. _____ _____ = Total Cover % Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B) Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____ Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes ☐ No ☒
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Remarks:
Vegetation has been mowed; plant ID difficult. Sample point not dominated by hydrophytic vegetation.

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 3/2	100					clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): none

Water Table Present? Yes _____ No ☒ Depth (inches): none

Saturation Present? Yes _____ No ☒ Depth (inches): none
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

None

Remarks:

Located in shallow swale. No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EBMUD Sobrante WTP, 5500 Amend Rd City/County: El Sobrante, Contra Costa Co. Sampling Date: 7/20/21
 Applicant/Owner: East Bay Municipal Utility District State: CA Sampling Point: 9
 Investigator(s): T. Mahony Section, Township, Range: Land Grant
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): Mediterranean CA (LRR C) Lat: 37.964025 Long: -122.278599 Datum: NAD 83
 Soil Map Unit Name: Diablo clay, 15 to 30 percent slopes, MLRA 15 NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☒ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☐	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Seasonal hydrology naturally problematic. Located behind fence with locked gate, sampled from a distance. No hydrophytic vegetation or surface hydrology indicators observed. Soils not sampled.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40</u> (A/B)
1. <u>Salix laevigata</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Quercus agrifolia</u>	<u>50</u>	<u>Y</u>	<u>UPL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>100</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Bromus diandrus</u>	<u>25</u>	<u>Y</u>	<u>UPL</u>	
2. <u>Lotus corniculatus</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Bromus hordeaceus</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>75</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes ☐ No ☒
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust _____				

Remarks:

Sample point not dominated by hydrophytic vegetation.

SOIL

Sampling Point: 9

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): <u>none</u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u>none</u> Saturation Present? Yes ☐ No ☒ Depth (inches): <u>none</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
None		
Remarks:		
Located in swale. No surface wetland hydrology indicators observed.		

Appendix B: Soil Map of the Study Area

Soil Map—Contra Costa County, California
(EBMUD_studyarea)



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

6/15/2021
Page 1 of 3

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Contra Costa County, California

Survey Area Data: Version 17, May 29, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 7, 2021—Mar 27, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CeA	Conejo clay loam, 0 to 2 percent slopes, MLRA 14	3.5	16.2%
CkB	Cropley clay, 2 to 5 percent slopes	16.4	76.1%
CnE	Cut and fill land-Los Osos complex, 9 to 30 percent slopes	0.5	2.5%
DdE	Diablo clay, 15 to 30 percent slopes, MLRA 15	1.1	5.1%
Totals for Area of Interest		21.6	100.0%

Appendix C: Study Area Photos



Appendix C-1. Sample point 1a at Seasonal Wetland W1.



Appendix C-2. Sample point 1b in Non-Native Grassland north of W1.



Appendix C-3. Sample point 2a in Seasonal Wetland W1.



Appendix C-4. Sample point 2b in Non-Native Grassland south of W1.



Appendix C-5. Sample point 3a in Seasonal Wetland W1.



Appendix C-6. Sample point 3b in Non-Native Grassland north of W1.



Appendix C-7. Sample point 4 in ephemeral drainage D1, looking downstream.



Appendix C-8. Ephemeral drainage D1, looking upstream.



Appendix C-9. Sample point 5 in Non-Native Grassland.



Appendix C-10. Sample point 6 in Non-Native Grassland.



Appendix C-11. Sample point 7a in Seasonal Wetland W2.



Appendix C-12. Sample point 7b on terrace above W2.



Appendix C-13. Sample point 8 in swale on fill terrace.



Appendix C-14. Sample point 9 along swale.

Appendix D. Plant Species Observed on the Study Area and Wetland Indicator Status

Scientific Name	Common Name	Wetland Indicator Status (USACE 2018) ⁶
<i>Acer negundo</i>	box elder	FACW
<i>Avena</i> sp.*	wild oat	UPL
<i>Baccharis pilularis</i>	coyote brush	UPL
<i>Bromus catharticus</i> *	rescue grass	UPL
<i>Bromus diandrus</i> *	ripgut brome	UPL
<i>Bromus hordeaceus</i> *	soft chess	FACU
<i>Bromus madritensis</i> subsp. <i>rubens</i> *	red brome	UPL
<i>Cirsium vulgare</i> *	bull thistle	FACU
<i>Convolvulus arvensis</i> *	field bindweed	UPL
<i>Cortaderia jubata</i> *	pampas grass	FACU
<i>Cotoneaster</i> sp.*	cotoneaster	UPL
<i>Cynodon dactylon</i> *	Bermuda grass	FACU
<i>Elymus triticoides</i>	creeping wildrye	FAC
<i>Epilobium ciliatum</i>	willow herb	FACW
<i>Festuca perennis</i> *	Italian ryegrass	FAC
<i>Helminthotheca echioides</i> *	bristly ox-tongue	FAC
<i>Hirschfeldia incana</i> *	summer mustard	UPL
<i>Holcus lanatus</i> *	velvet grass	FAC
<i>Hordeum marinum</i> subsp. <i>gussoneanum</i> *	Mediterranean barley	FAC
<i>Juncus effusus</i>	soft rush	FACW
<i>Juncus patens</i>	spreading rush	FACW
<i>Juncus xiphioides</i>	iris-leaved rush	OBL
<i>Lotus corniculatus</i> *	bird's-foot trefoil	FAC
<i>Plantago lanceolata</i> *	English plantain	FAC
<i>Pinus</i> sp.*	pine	UPL
<i>Quercus agrifolia</i>	coast live oak	UPL
<i>Raphanus sativus</i> *	wild radish	UPL
<i>Rosmarinus officinalis</i> *	rosemary	UPL
<i>Rubus armeniacus</i> *	Himalayan blackberry	FAC
<i>Rumex crispus</i> *	curly dock	FAC
<i>Salix laevigata</i>	red willow	FACW
<i>Schoenoplectus</i> sp.	bulrush	OBL
<i>Toxicodendron diversilobum</i>	poison oak	FACU
<i>Typha latifolia</i>	broad-leaved cattail	OBL
<i>Vicia sativa</i> *	vetch	FACU
* = Non-native species		

⁶ No status given for plants not identified to species level. Wetland Indicator Statuses: Obligate (OBL), Facultative Wetland (FACW), Facultative (FAC), Facultative Upland (FACU), Upland (UPL)

Appendix G – Roadway Construction Noise Model Results and Noise Measurement Graphs

APPENDIX G

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Noise Appendix

Roadway Construction Noise Model Results for Scenarios 1-16
Long Term Noise Measurement Graphs for Sites 1-4 & 11-13



Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 03/16/2022
Case Description: Scenario 1 Site Preparation

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Phase 1 Site Preparation	Residential	58.0	53.0	48.0

Equipment

	Impact	Usage	Spec	Actual	Receptor	Estimated
Description	Device	(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Backhoe	No	40		77.6	60.0	0.0
Dozer	No	40		81.7	60.0	0.0
Dump Truck	No	40		76.5	60.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

	Noise Level Data								
Night	Calculated (dBA)				Day	Evening			
	Day		Evening		Night				
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Backhoe N/A	N/A	N/A	76.0 N/A	72.0 N/A	N/A	N/A	N/A	N/A	N/A
Dozer N/A	N/A	N/A	80.1 N/A	76.1 N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck N/A	N/A	N/A	74.9 N/A	70.9 N/A	N/A	N/A	N/A	N/A	N/A
Total N/A	N/A	N/A	80.1 N/A	78.4 N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 05/10/2023

Case Description: EBMUD Scenario 2 I-Beam for Lagging

**** Receptor #1 ****

Description	Baselines (dBA)		
	Land Use	Daytime	Evening
Night			
-----	-----	-----	-----

Phase 1 I-Beam for Lagging SFBW FTW GT	Residential	58.0	53.0
48.0			

Description	Impact Device	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
		Usage (%)	Spec Lmax (dBA)		
			Actual Lmax (dBA)		
Dump Truck	No	40	76.5	160.0	0.0
Crane	No	16	80.6	160.0	0.0
Vibratory Pile Driver*	Yes	20	95.0	160.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Night		Day	Calculated (dBA)		Day		Evening		
				Evening		Night			
Equipment Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Dump Truck	N/A	N/A	66.3	62.4	N/A	N/A	N/A	N/A	N/A
Crane	N/A	N/A	70.4	62.5	N/A	N/A	N/A	N/A	N/A
Vibratory Pile Driver*	N/A	N/A	84.9	77.9	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	84.9	78.1	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/10/2023

Case Description: EBMUD Scenario 3 Mass Excavation and Lagging SFBW FTW GT

**** Receptor #1 ****

Description		Baselines (dBA)	
Evening	Night	Land Use	Daytime
-----	-----	-----	-----
-----	-----		
Phase 1 Mass Excavation and Lagging SFBW FTW GT		Residential	58.0
53.0	48.0		

Equipment						

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
-----	-----	-----	-----	-----	-----	-----
Excavator	No	40		80.7	160.0	0.0
Front End Loader	No	40		79.1	160.0	0.0
Crane	No	16		80.6	160.0	0.0
Dump Truck	No	40		76.5	160.0	0.0
Dozer	No	40		81.7	160.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Night		Calculated (dBA)			Day		Evening		
		Day	Evening		Night				
Equipment			Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq			
Excavator			70.6	66.6	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A			
Front End Loader			69.0	65.0	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A			
Crane			70.4	62.5	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A			
Dump Truck			66.3	62.4	N/A	N/A	N/A	N/A	N/A

[illegible]

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 05/10/2023

Case Description: Scenario 4 SFBW Drill and Pour Piers

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Phase 1 SFBW Drill and Pour Piers	Residential	58.0	53.0	48.0

Description	Impact Device	Usage (%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Auger Drill Rig	No	20		84.4	160.0	0.0
Concrete Mixer Truck	No	40		78.8	160.0	0.0
Concrete Mixer Truck	No	40		78.8	160.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

[illegible]

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/10/2023
Case Description: Scenario 5 SFBW Pour Mat Foundation

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Phase 1 Pour Mat Foundation SFBW	Residential	58.0	53.0	48.0

Description	Equipment					
	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Pump Truck	No	20		81.4	160.0	0.0
Forklift*	No	40		77.0	160.0	0.0
Concrete Mixer Truck	No	40		78.8	160.0	0.0
Concrete Mixer Truck	No	40		78.8	160.0	0.0
Compressor (air)	No	40		77.7	160.0	0.0
Bobcat*	No	40		80.0	160.0	0.0

Results

Noise Limit Exceedance (dBA)					Noise Limits (dBA)					

Night	Day		Calculated (dBA)		Day		Evening			
			Evening		Night					

Equipment		Lmax		Leq		Lmax		Leq		Lmax
Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	

Concrete Pump Truck			71.3	64.3	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Forklift*			66.9	62.9	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Concrete Mixer Truck			68.7	64.7	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Concrete Mixer Truck			68.7	64.7	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Compressor (air)			67.6	63.6	N/A	N/A	N/A	N/A	N/A	

[illegible]

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 05/10/2023

Case Description: Scenario 6 Drill and Pour Piers PPB

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Phase 1 Drill and Pour Piers at PPB	Residential	58.0	53.0	48.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Auger Drill Rig	No	20		84.4	370.0	0.0
Concrete Mixer Truck	No	40		78.8	370.0	0.0
Concrete Mixer Truck	No	40		78.8	370.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

		Calculated (dBA)			Day		Evening		
Night		Day	Evening		Night				
			Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Equipment	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Auger Drill Rig	N/A	N/A	67.0	60.0	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	N/A	N/A	61.4	57.4	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	N/A	N/A	61.4	57.4	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	67.0	63.2	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/16/2023
Case Description: Scenario 7 Jack and Bore at CCB

**** Receptor #1 ****

Description -----	Land Use -----	Baselines (dBA)		
		Daytime -----	Evening -----	Night -----
Phase 1 Jack and Bore at CCB	Residential	58.0	53.0	48.0

Estimated Shielding Description (dBA) -----	Equipment -----		Spec	Actual	Receptor
	Impact Device	Usage (%)	Lmax (dBA) -----	Lmax (dBA) -----	Distance (feet) -----
Excavator 0.0	No	40		80.7	430.0
Dump Truck 0.0	No	40		76.5	430.0
Forklift* 0.0	No	40		77.0	430.0
Welder / Torch 0.0	No	40		74.0	430.0
Horizontal Boring Hydr. Jack 0.0	No	25		82.0	430.0

Results -----

Noise Limit Exceedance (dBA)						Noise Limits (dBA)					

Night		Day		Calculated (dBA) Evening		Day Night		Evening			
-----		-----		-----		-----		-----			
Equipment				Lmax		Leq		Lmax		Leq	
Lmax		Leq		Lmax		Leq		Lmax		Leq	
-----		-----		-----		-----		-----		-----	
-----		-----		-----		-----		-----		-----	
Excavator				62.0		58.0		N/A		N/A	

N/A	N/A		N/A	N/A	N/A	N/A	N/A		
Dump Truck				57.8	53.8	N/A	N/A	N/A	N/A
N/A	N/A		N/A	N/A	N/A	N/A	N/A		
Forklift*				58.3	54.3	N/A	N/A	N/A	N/A
N/A	N/A		N/A	N/A	N/A	N/A	N/A		
Welder / Torch				55.3	51.3	N/A	N/A	N/A	N/A
N/A	N/A		N/A	N/A	N/A	N/A	N/A		
Horizontal Boring			Hydr. Jack	63.3	57.3	N/A	N/A	N/A	N/A
N/A	N/A		N/A	N/A	N/A	N/A	N/A		
			Total	63.3	62.6	N/A	N/A	N/A	N/A
N/A	N/A		N/A	N/A	N/A	N/A	N/A		

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 03/16/2022

Case Description: Scenario 8 Demolition of Solids Handling Facilities

**** Receptor #1 ****

Description		Baselines (dBA)	
		Land Use	Daytime
Evening	Night		
-----	-----	-----	-----
-----	-----		
Phase 1 Demolition of Solids Handling Facilities		Residential	55.0
50.0	45.0		

Description	Impact Device	Usage (%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Bobcat*	No	40		80.0	60.0	0.0
Excavator	No	40		80.7	60.0	0.0
Crane	No	16		80.6	60.0	0.0
Dump Truck	No	40		76.5	60.0	0.0
Haul Truck*	No	40		77.0	60.0	0.0
Welder / Torch	No	40		74.0	60.0	0.0
Compactor (ground)	No	20		83.2	60.0	0.0
Front End Loader	No	40		79.1	60.0	0.0

Results

Noise Limit Exceedance (dBA)							Noise Limits (dBA)		
		Calculated (dBA)			Day		Evening		
Night		Day	Evening		Night				
			Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Equipment	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Bobcat*	N/A	N/A	N/A	78.4	74.4	N/A	N/A	N/A	N/A
Excavator	N/A	N/A	N/A	79.1	75.1	N/A	N/A	N/A	N/A

[illegible]

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/16/2022
Case Description: Scenario 9 Installation of 8" solids to sewer pipe

**** Receptor #1 ****

Description Evening Night		Baselines (dBA)	
		Land Use	Daytime
-----		-----	-----

Phase 1 Installation of 8" Pipeline solids to sewer		Commercial	65.0
60.0	55.0		

Description		Equipment				
		Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)
-----		-----	-----	-----	-----	-----
Excavator		No	40		80.7	100.0
Roller		No	20		80.0	100.0
Front End Loader		No	40		79.1	100.0
Scraper		No	40		83.6	100.0
Concrete Saw		No	20		89.6	100.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment Leq Lmax		Calculated (dBA)		Day Night		Evening		Lmax
		Day	Evening					
-----		-----	-----	-----	-----	-----	-----	-----
Equipment		Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Leq Lmax		Leq	Lmax	Lmax	Leq	Lmax	Leq	Lmax
-----		-----	-----	-----	-----	-----	-----	-----
Excavator			74.7	70.7	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller			74.0	67.0	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader			73.1	69.1	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper			77.6	73.6	N/A	N/A	N/A	N/A

[illegible]

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 05/11/2023

Case Description: Scenario 10 Chemical Building Excavation

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Phase 2 Chemical Building Excavation	Residential	58.0	53.0	48.0

Description	Impact Device	Usage (%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Bobcat*	No	40		80.0	580.0	0.0
Excavator	No	40		80.7	580.0	0.0
Dump Truck	No	40		76.5	580.0	0.0

Results

Noise Limit Exceedance (dBA)							Noise Limits (dBA)		
		Calculated (dBA)			Day		Evening		
Night	Day		Evening		Night				
Equipment	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	
Bobcat*	N/A	N/A	58.7	54.7	N/A	N/A	N/A	N/A	N/A
Excavator	N/A	N/A	59.4	55.4	N/A	N/A	N/A	N/A	N/A
Dump Truck	N/A	N/A	55.2	51.2	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	59.4	58.9	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/12/2022

Case Description: Scenario 11 CNA Trenchless Installation D'Avila Apartments

**** Receptor #1 ****

Description		Baselines (dBA)	
Evening	Night	Land Use	Daytime
-----	-----	-----	-----
-----	-----		
Phase 2 CNA Trenchless Installation D'Avila Aprts		Residential	60.0
55.0	50.0		

Equipment		Spec		Receptor
-----		-----		-----
Estimated		Lmax	Lmax	Distance
Shielding	Impact Usage	(dBA)	(dBA)	(feet)
Description	Device (%)	(dBA)	(dBA)	(feet)
(dBA)	-----	-----	-----	-----
-----	-----	-----	-----	-----
Dump Truck	No 40		76.5	15.0
0.0				
Excavator	No 40		80.7	15.0
0.0				
Horizontal Boring Hydr. Jack	No 25		82.0	15.0
0.0				
Backhoe	No 40		77.6	15.0
0.0				

Results		Noise Limits	
-----		-----	
(dBA)	Noise Limit Exceedance (dBA)		
-----	-----		
-----	-----		
Night	Day	Calculated (dBA)	Day
		Evening	Night
-----	-----	-----	-----
-----	-----	-----	-----
Equipment		Lmax Leq	Lmax Leq
Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq
-----	-----	-----	-----
-----	-----	-----	-----

[illegible]

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 09/12/2022

Case Description: Scenario 12 CNA Installation of 54" Pipeline (Richmond)

**** Receptor #1 ****

Description		Baselines (dBA)	
Evening	Night	Land Use	Daytime
-----	-----	-----	-----
-----	-----		
Phase 2 Excavation	Phase for Pipeline Installation	Residential	69.0
64.0	59.0		

Equipment						

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
-----	-----	-----	-----	-----	-----	-----
Compressor (air)	No	40		77.7	5.0	0.0
Excavator	No	40		80.7	5.0	0.0
Dump Truck	No	40		76.5	5.0	0.0
Dump Truck	No	40		76.5	5.0	0.0
Dump Truck	No	40		76.5	5.0	0.0
Crane	No	16		80.6	5.0	0.0
Front End Loader	No	40		79.1	5.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

		Calculated (dBA)			Day		Evening		
Night		Day		Evening		Night			

[illegible]

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 09/12/2022
Case Description: Scenario 13 CNA Installation of 54" Pipeline SP Road
(Contra Costa County)

**** Receptor #1 ****

Description		Baselines (dBA)	
		Land Use	Daytime
Evening	Night		
-----		-----	-----
-----	-----		
Phase 2 Excavation	Phase for Pipeline Installation	Residential	69.0
64.0	59.0		

Description	Impact Device	Usage (%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Compressor (air)	No	40		77.7	25.0	0.0
Excavator	No	40		80.7	25.0	0.0
Dump Truck	No	40		76.5	25.0	0.0
Dump Truck	No	40		76.5	25.0	0.0
Dump Truck	No	40		76.5	25.0	0.0
Crane	No	16		80.6	25.0	0.0
Front End Loader	No	40		79.1	25.0	0.0

Results

[illegible]

[illegible]

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 09/12/2022
Case Description: Scenario 13 CNA Installation of 54" Pipeline SP Road
(Contra Costa County)

**** Receptor #1 ****

Description		Baselines (dBA)	
		Land Use	Daytime
Evening	Night		
-----		-----	-----
-----	-----		
Phase 2 Excavation	Phase for Pipeline Installation	Residential	69.0
64.0	59.0		

Description	Impact Device	Usage (%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Compressor (air)	No	40		77.7	25.0	0.0
Excavator	No	40		80.7	25.0	0.0
Dump Truck	No	40		76.5	25.0	0.0
Dump Truck	No	40		76.5	25.0	0.0
Dump Truck	No	40		76.5	25.0	0.0
Crane	No	16		80.6	25.0	0.0
Front End Loader	No	40		79.1	25.0	0.0

Results

Noise Limit Exceedance (dBA)							Noise Limits (dBA)		
		Calculated (dBA)			Day		Evening		
Night	Day		Evening		Night				
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Compressor (air)	N/A	N/A	83.7	79.7	N/A	N/A	N/A	N/A	N/A
Excavator	N/A	N/A	86.7	82.8	N/A	N/A	N/A	N/A	N/A

[illegible]

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 05/11/2023

Case Description: Scenario 15 Dewatering Building Piers

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Phase 2 Dewatering Building Piers	Residential	58.0	53.0	48.0

Description	Impact Device	Usage (%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Auger Drill Rig	No	20		84.4	490.0	0.0
Concrete Mixer Truck	No	40		78.8	490.0	0.0
Concrete Mixer Truck	No	40		78.8	490.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

		Calculated (dBA)			Day		Evening		
Night		Day	Evening		Night				
			Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Equipment	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Auger Drill Rig	N/A	N/A	64.5	57.5	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	N/A	N/A	59.0	55.0	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	N/A	N/A	59.0	55.0	N/A	N/A	N/A	N/A	N/A
Total	N/A	N/A	64.5	60.8	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 05/11/2023

Case Description: Scenario 16 I-Beam for Gravity Thickeners

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Phase 2 I-Beam for Gravity Thickeners	Residential	58.0	53.0	48.0

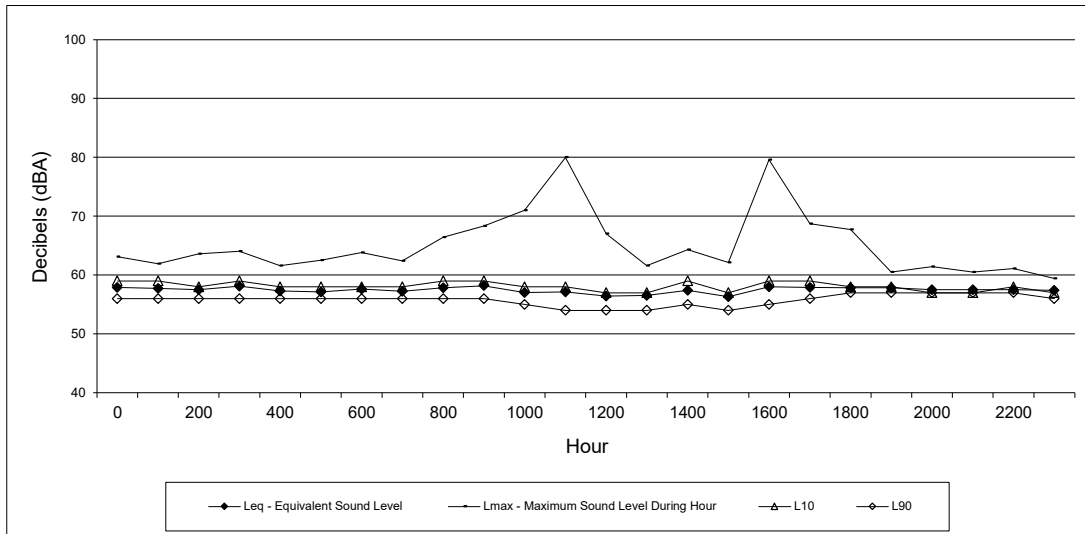
Description	Impact Device	Usage (%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec	Actual		
			Lmax (dBA)	Lmax (dBA)		
-----	-----	-----	-----	-----	-----	-----
Auger Drill Rig	No	20		84.4	260.0	0.0
Crane	No	16		80.6	260.0	0.0
Haul Truck*	No	40		77.0	260.0	0.0

Results

Noise Limits (dBA)

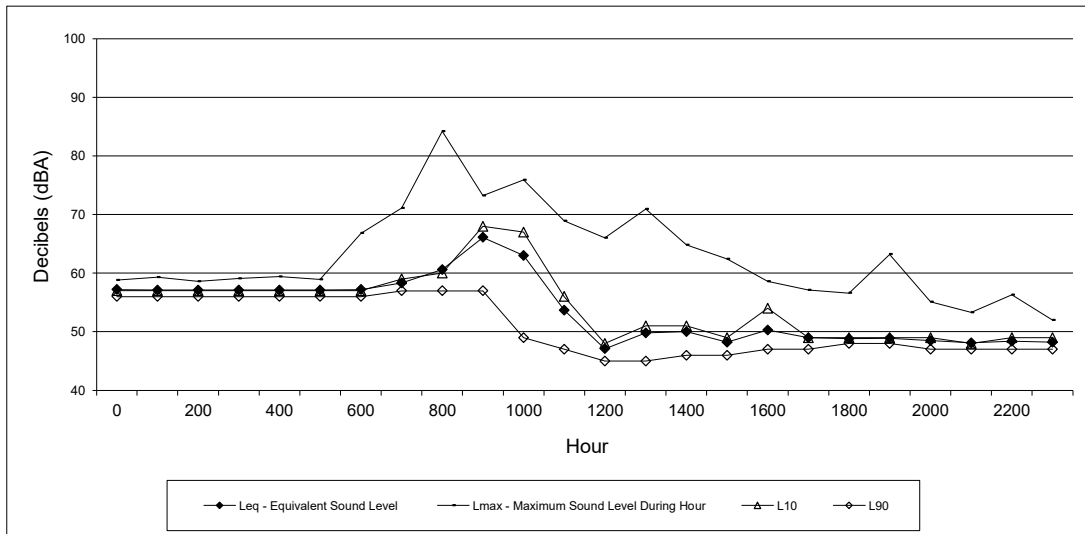
Noise Limit Exceedance (dBA)

Night		Day	Calculated (dBA)		Day		Evening		Lmax
			Evening	Night	Night	Evening			
Equipment	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Auger Drill Rig	N/A	N/A	70.0	63.1	N/A	N/A	N/A	N/A	N/A
Crane	N/A	N/A	66.2	58.3	N/A	N/A	N/A	N/A	N/A
Haul Truck*	N/A	N/A	62.7	58.7	N/A	N/A	N/A	N/A	N/A
Total			70.0	65.4	N/A	N/A	N/A	N/A	N/A



Site 1: South of the SOWTP, approximately 300 feet north of residences on Fascination Circle
Tuesday February 22, 2022

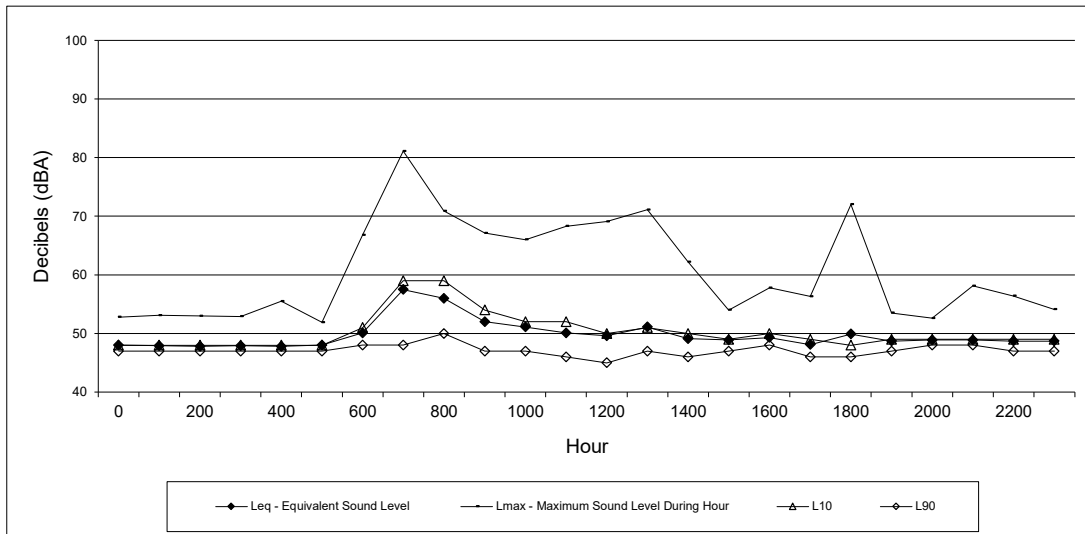
Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	58	63	59	56
100	58	62	59	56
200	58	64	58	56
300	58	64	59	56
400	57	62	58	56
500	57	63	58	56
600	58	64	58	56
700	57	62	58	56
800	58	66	59	56
900	58	68	59	56
1000	57	71	58	55
1100	57	80	58	54
1200	56	67	57	54
1300	57	62	57	54
1400	57	64	59	55
1500	56	62	57	54
1600	58	80	59	55
1700	58	69	59	56
1800	58	68	58	57
1900	58	61	58	57
2000	58	61	57	57
2100	58	61	57	57
2200	58	61	58	57
2300	57	59	57	56



Site 1: South of the SOWTP, approximately 300 feet north of residences on Fascination Circle
Wednesday February 23, 2022

Leq - Equivalent Sound Level		Lmax - Maximum Sound Level During		L10	L90
Hour		Hour			
0	57	59	57	57	56
100	57	59	57	57	56
200	57	59	57	57	56
300	57	59	57	57	56
400	57	59	57	57	56
500	57	59	57	57	56
600	57	67	57	57	56
700	58	71	59	57	57
800	61	84	60	57	57
900	66	73	68	57	57
1000	63	76	67	49	49
1100	54	69	56	47	47
1200	47	66	48	45	45
1300	50	71	51	45	45
1400	50	65	51	46	46
1500	48	62	49	46	46
1600	50	59	54	47	47
1700	49	57	49	47	47
1800	49	57	49	48	48
1900	49	63	49	48	48
2000	49	55	49	47	47
2100	48	53	48	47	47
2200	48	56	49	47	47
2300	48	52	49	47	47

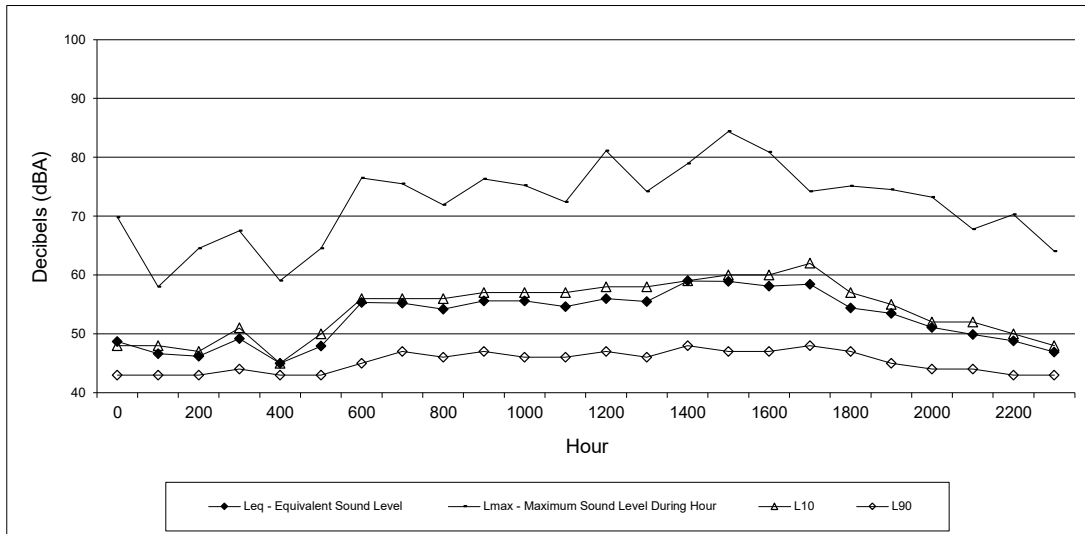
CNEL: 63



Site 1: South of the SOWTP, approximately 300 feet north of residences on Fascination Circle
Thursday February 24, 2022

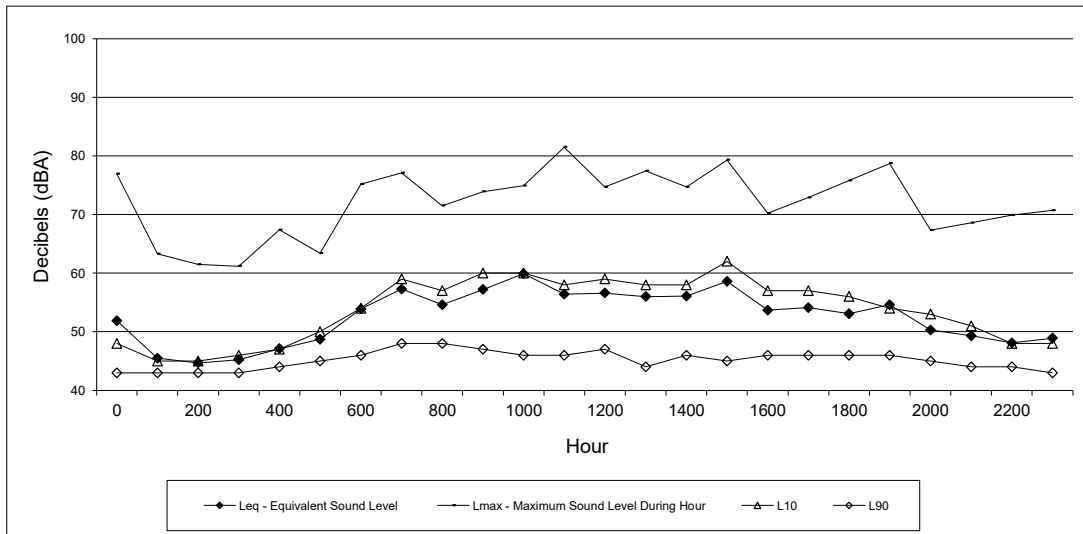
Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During		
		Hour	L10	L90
0	48	53	48	47
100	48	53	48	47
200	48	53	48	47
300	48	53	48	47
400	48	56	48	47
500	48	52	48	47
600	50	67	51	48
700	58	81	59	48
800	56	71	59	50
900	52	67	54	47
1000	51	66	52	47
1100	50	68	52	46
1200	50	69	50	45
1300	51	71	51	47
1400	49	62	50	46
1500	49	54	49	47
1600	49	58	50	48
1700	48	56	49	46
1800	50	72	48	46
1900	49	54	49	47
2000	49	53	49	48
2100	49	58	49	48
2200	49	56	49	47
2300	49	54	49	47

CNEL: 56



Site 2: North of the SOWTP, approximately 80 feet south of homes along Amend Road
Tuesday February 22, 2022

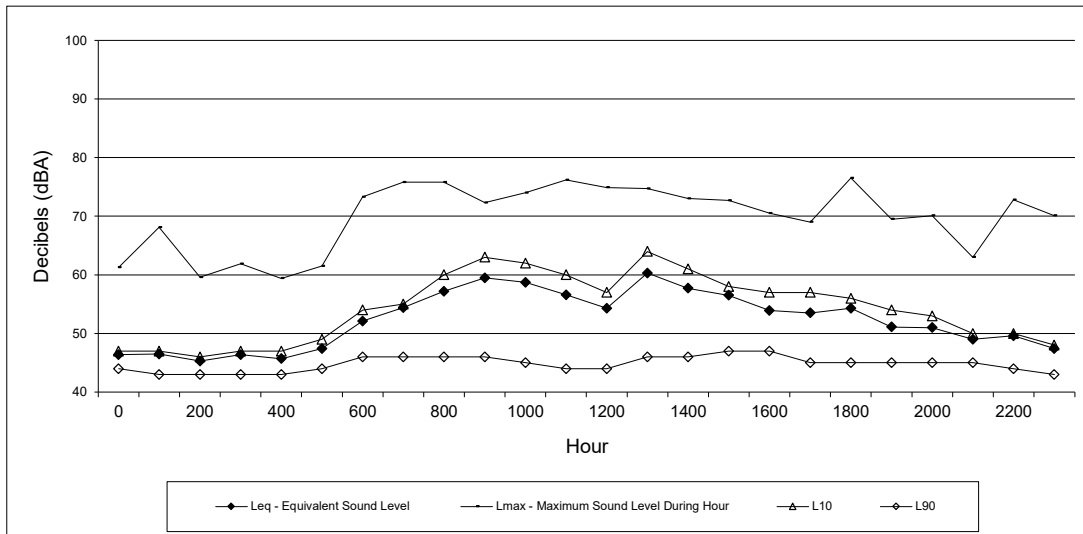
Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	49	70	48	43
100	47	58	48	43
200	46	65	47	43
300	49	68	51	44
400	45	59	45	43
500	48	65	50	43
600	55	77	56	45
700	55	76	56	47
800	54	72	56	46
900	56	76	57	47
1000	56	75	57	46
1100	55	72	57	46
1200	56	81	58	47
1300	56	74	58	46
1400	59	79	59	48
1500	59	84	60	47
1600	58	81	60	47
1700	58	74	62	48
1800	54	75	57	47
1900	54	75	55	45
2000	51	73	52	44
2100	50	68	52	44
2200	49	70	50	43
2300	47	64	48	43



Site 2: North of the SOWTP, approximately 80 feet south of homes along Amend Road
Wednesday February 23, 2022

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	52	77	48	43
100	46	63	45	43
200	45	62	45	43
300	45	61	46	43
400	47	67	47	44
500	49	63	50	45
600	54	75	54	46
700	57	77	59	48
800	55	72	57	48
900	57	74	60	47
1000	60	75	60	46
1100	56	82	58	46
1200	57	75	59	47
1300	56	77	58	44
1400	56	75	58	46
1500	59	79	62	45
1600	54	70	57	46
1700	54	73	57	46
1800	53	76	56	46
1900	55	79	54	46
2000	50	67	53	45
2100	49	69	51	44
2200	48	70	48	44
2300	49	71	48	43

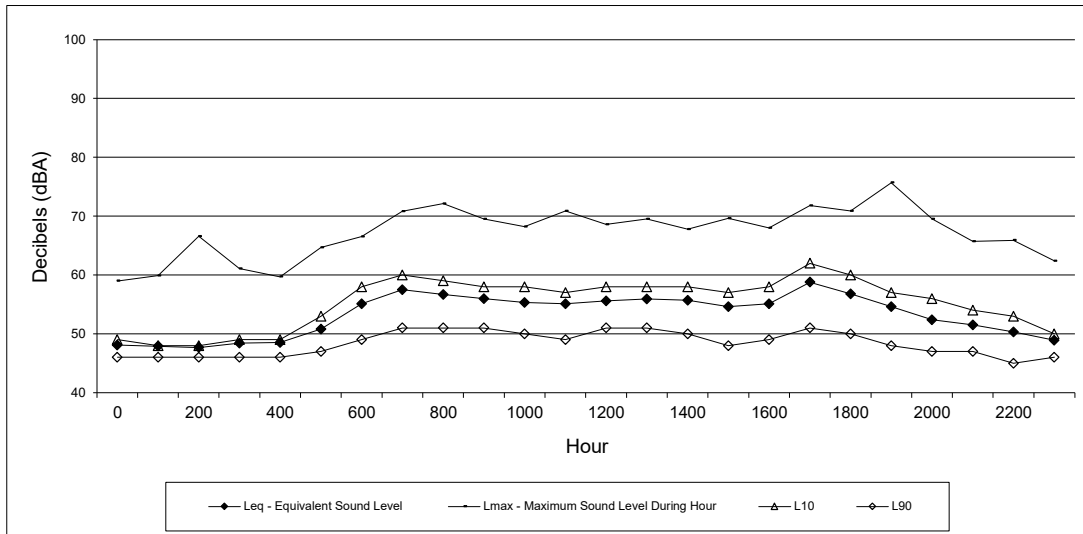
CNEL: 58



Site 2: North of the SOWTP, approximately 80 feet south of homes along Amend Road
Thursday February 24, 2022

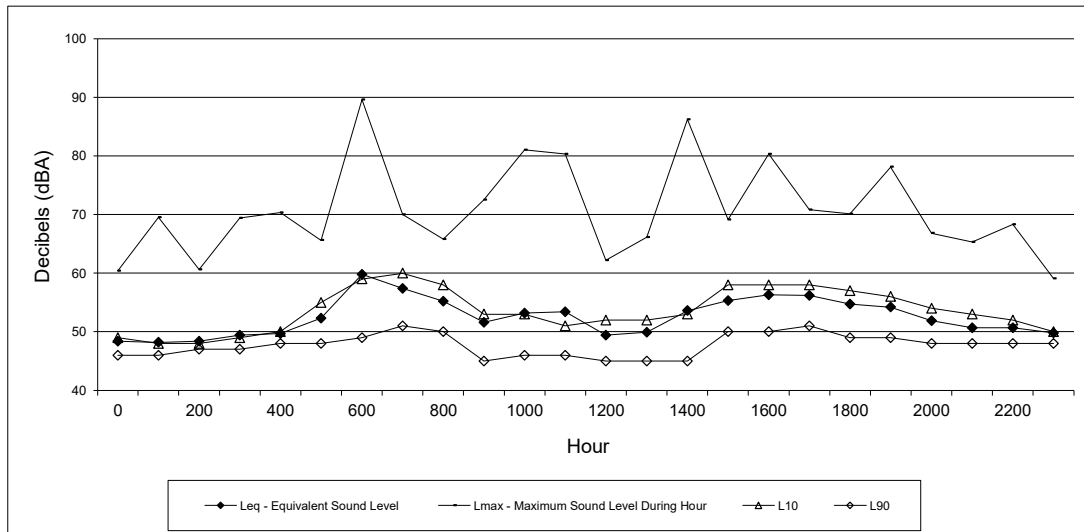
Leq - Equivalent Sound Level		Lmax - Maximum Sound Level During			
Hour		Hour	L10	L90	
0	46	61	47	44	
100	47	68	47	43	
200	45	60	46	43	
300	46	62	47	43	
400	46	59	47	43	
500	47	62	49	44	
600	52	73	54	46	
700	54	76	55	46	
800	57	76	60	46	
900	60	72	63	46	
1000	59	74	62	45	
1100	57	76	60	44	
1200	54	75	57	44	
1300	60	75	64	46	
1400	58	73	61	46	
1500	57	73	58	47	
1600	54	71	57	47	
1700	54	69	57	45	
1800	54	77	56	45	
1900	51	70	54	45	
2000	51	70	53	45	
2100	49	63	50	45	
2200	50	73	50	44	
2300	47	70	48	43	

CNEL: 57



Site 3: East boundary of SOWTP, on a tree directly west of the Clearwell
Tuesday February 22, 2022

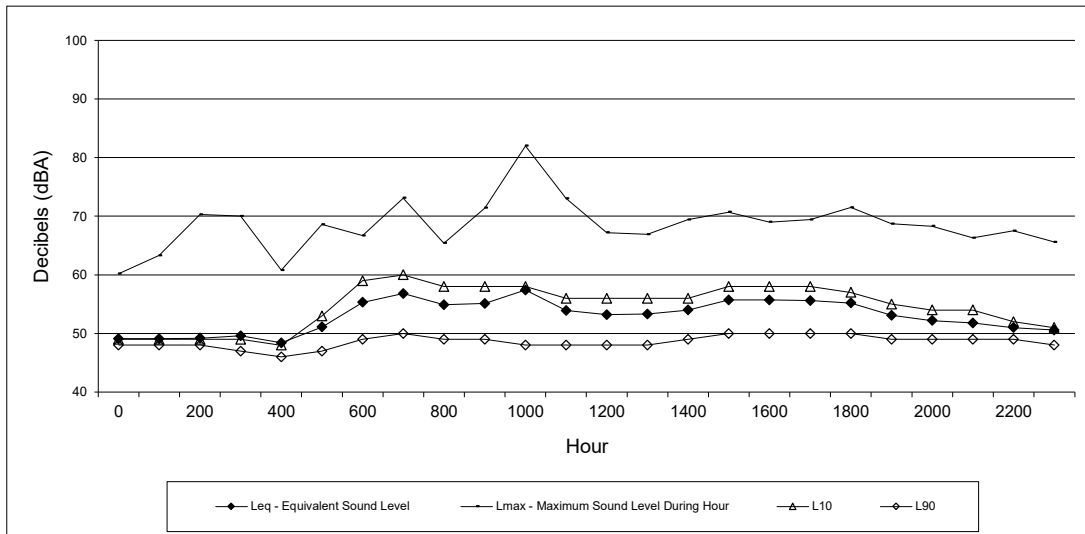
Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	48	59	49	46
100	48	60	48	46
200	48	67	48	46
300	48	61	49	46
400	49	60	49	46
500	51	65	53	47
600	55	67	58	49
700	58	71	60	51
800	57	72	59	51
900	56	70	58	51
1000	55	68	58	50
1100	55	71	57	49
1200	56	69	58	51
1300	56	70	58	51
1400	56	68	58	50
1500	55	70	57	48
1600	55	68	58	49
1700	59	72	62	51
1800	57	71	60	50
1900	55	76	57	48
2000	52	70	56	47
2100	52	66	54	47
2200	50	66	53	45
2300	49	62	50	46



Site 3: East boundary of SOWTP, on a tree directly west of the Clearwell
Wednesday February 23, 2022

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	48	60	49	46
100	48	70	48	46
200	48	61	48	47
300	49	69	49	47
400	50	70	50	48
500	52	66	55	48
600	60	90	59	49
700	57	70	60	51
800	55	66	58	50
900	52	73	53	45
1000	53	81	53	46
1100	53	80	51	46
1200	49	62	52	45
1300	50	66	52	45
1400	54	86	53	45
1500	55	69	58	50
1600	56	80	58	50
1700	56	71	58	51
1800	55	70	57	49
1900	54	78	56	49
2000	52	67	54	48
2100	51	65	53	48
2200	51	68	52	48
2300	50	59	50	48

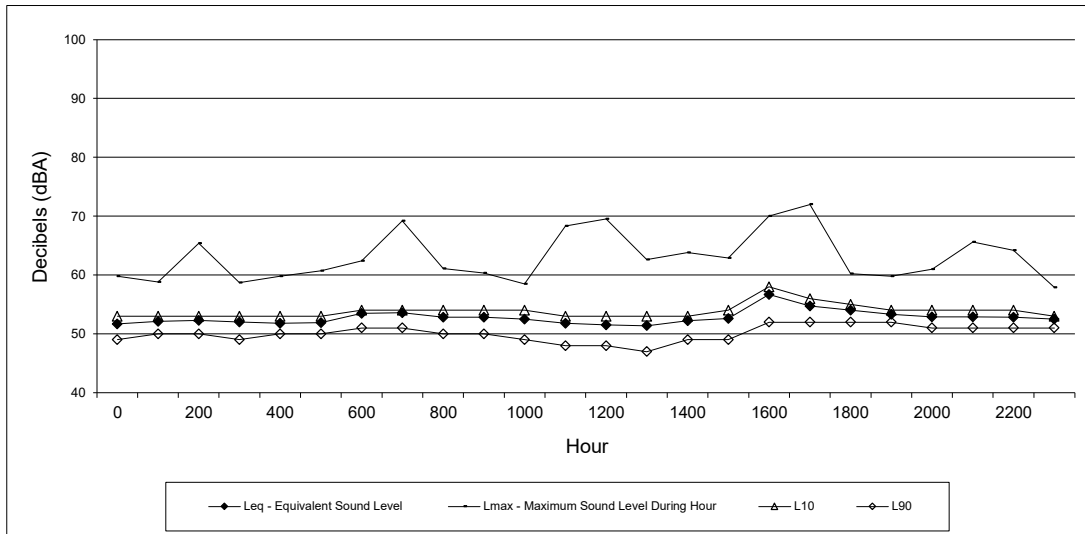
CNEL: 60



Site 3: East boundary of SOWTP, on a tree directly west of the Clearwell
Thursday February 24, 2022

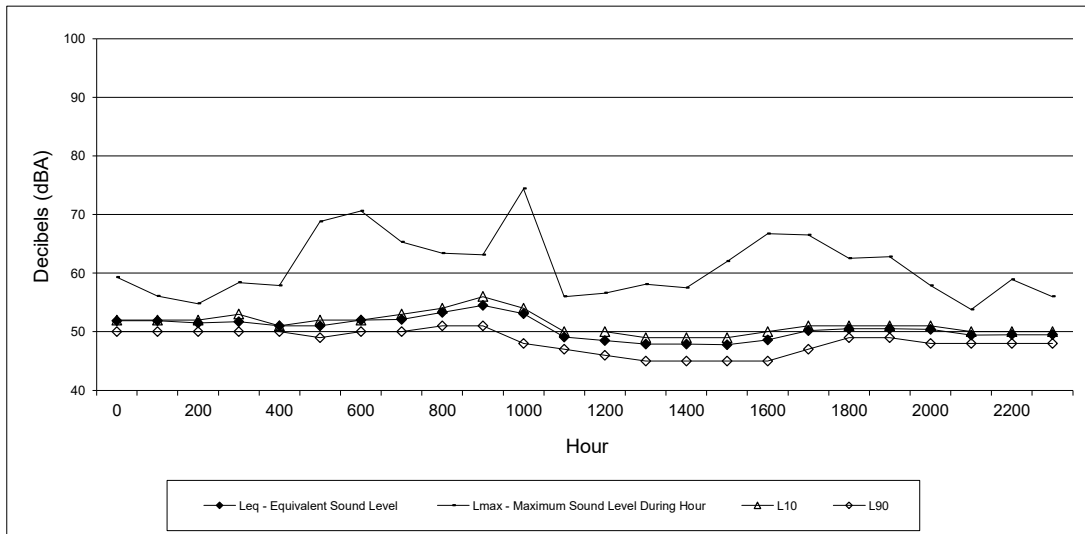
Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During	L10	L90
0	49	60	49	48
100	49	63	49	48
200	49	70	49	48
300	50	70	49	47
400	48	61	48	46
500	51	69	53	47
600	55	67	59	49
700	57	73	60	50
800	55	65	58	49
900	55	71	58	49
1000	57	82	58	48
1100	54	73	56	48
1200	53	67	56	48
1300	53	67	56	48
1400	54	69	56	49
1500	56	71	58	50
1600	56	69	58	50
1700	56	69	58	50
1800	55	72	57	50
1900	53	69	55	49
2000	52	68	54	49
2100	52	66	54	49
2200	51	68	52	49
2300	51	66	51	48

CNEL: 58



Site 4: Southwest boundary of SOWTP, approximately 250 feet southwest of the Sedimentation Basins
Tuesday February 22, 2022

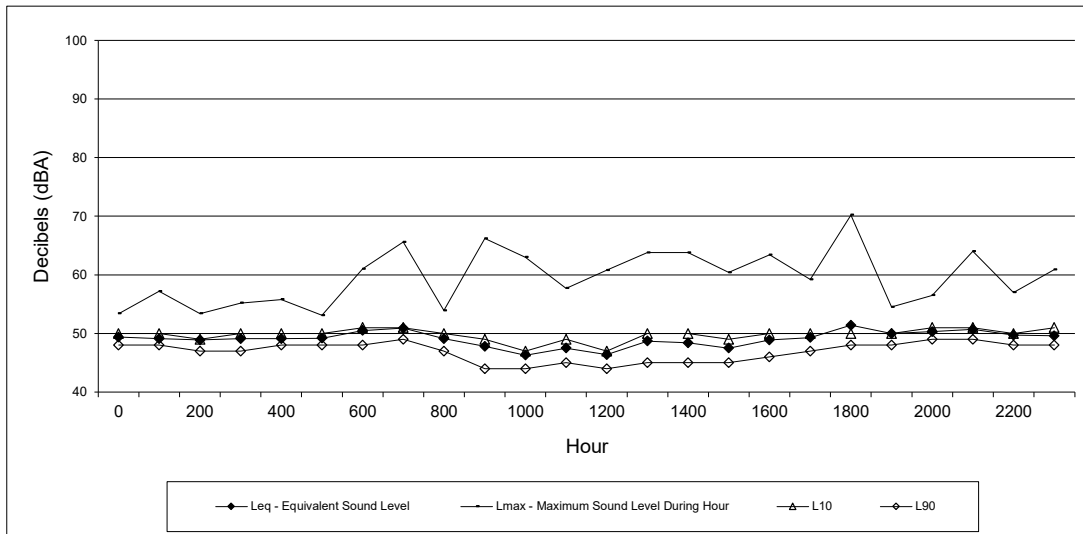
Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	52	60	53	49
100	52	59	53	50
200	52	65	53	50
300	52	59	53	49
400	52	60	53	50
500	52	61	53	50
600	54	62	54	51
700	54	69	54	51
800	53	61	54	50
900	53	60	54	50
1000	53	59	54	49
1100	52	68	53	48
1200	52	70	53	48
1300	51	63	53	47
1400	52	64	53	49
1500	53	63	54	49
1600	57	70	58	52
1700	55	72	56	52
1800	54	60	55	52
1900	53	60	54	52
2000	53	61	54	51
2100	53	66	54	51
2200	53	64	54	51
2300	53	58	53	51



Site 4: Southwest boundary of SOWTP, approximately 250 feet southwest of the Sedimentation Basins
Wednesday February 23, 2022

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	52	59	52	50
100	52	56	52	50
200	52	55	52	50
300	52	58	53	50
400	51	58	51	50
500	51	69	52	49
600	52	71	52	50
700	52	65	53	50
800	53	63	54	51
900	55	63	56	51
1000	53	74	54	48
1100	49	56	50	47
1200	49	57	50	46
1300	48	58	49	45
1400	48	58	49	45
1500	48	62	49	45
1600	49	67	50	45
1700	50	67	51	47
1800	51	63	51	49
1900	51	63	51	49
2000	50	58	51	48
2100	49	54	50	48
2200	50	59	50	48
2300	50	56	50	48

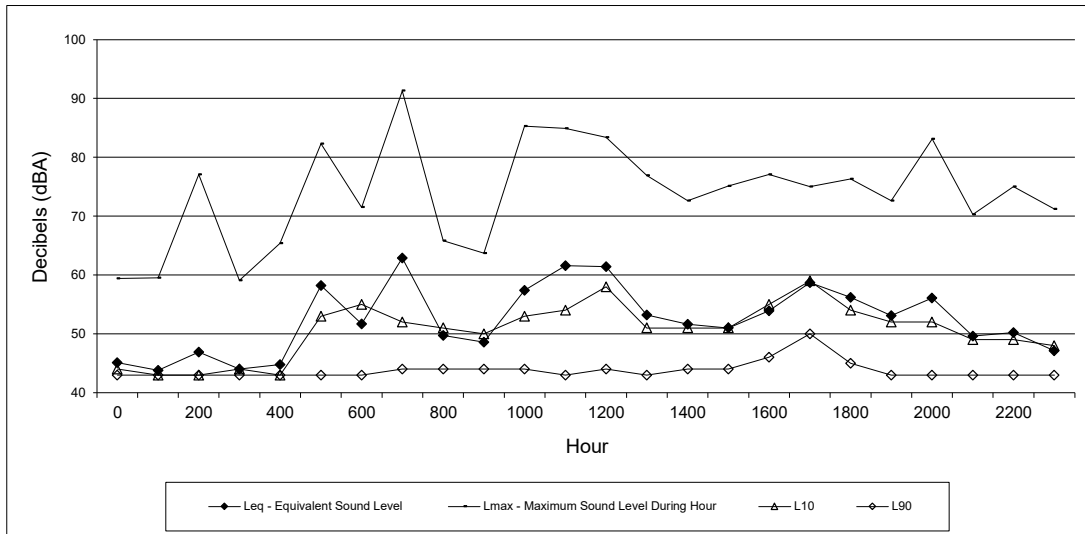
CNEL: 58



Site 4: Southwest boundary of SOWTP, approximately 250 feet southwest of the Sedimentation Basins
Thursday February 24, 2022

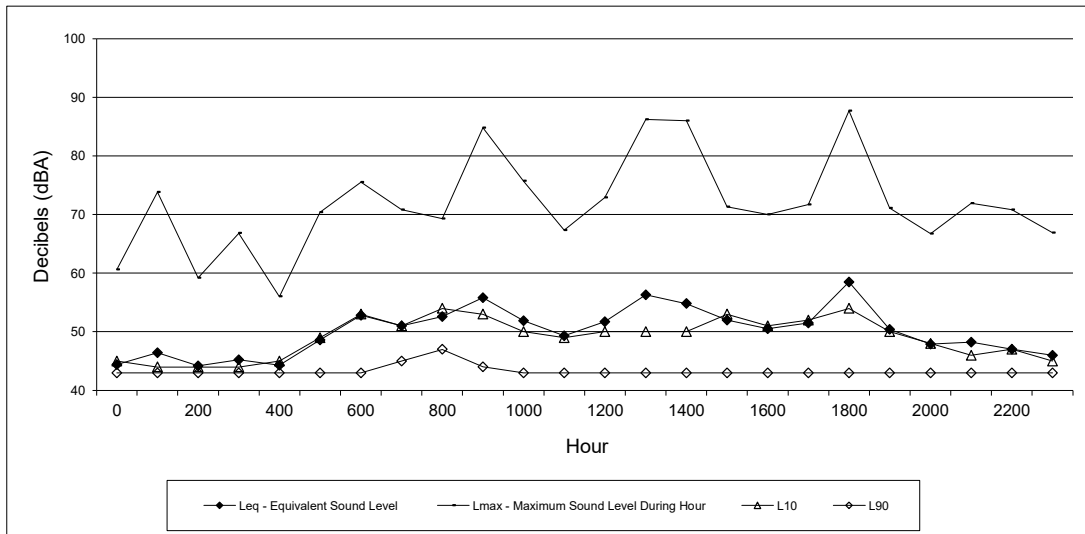
Leq - Equivalent Sound Level		Lmax - Maximum Sound Level During		L10	L90
Hour		Hour			
0	49	53	50	50	48
100	49	57	50	50	48
200	49	53	49	49	47
300	49	55	50	50	47
400	49	56	50	50	48
500	49	53	50	50	48
600	51	61	51	51	48
700	51	66	51	51	49
800	49	54	50	50	47
900	48	66	49	49	44
1000	46	63	47	47	44
1100	48	58	49	49	45
1200	46	61	47	47	44
1300	49	64	50	50	45
1400	48	64	50	50	45
1500	48	60	49	49	45
1600	49	63	50	50	46
1700	49	59	50	50	47
1800	51	70	50	50	48
1900	50	55	50	50	48
2000	50	57	51	51	49
2100	51	64	51	51	49
2200	50	57	50	50	48
2300	50	61	51	51	48

CNEL: 56



Site 11: Along D'Avila Way on a fence, approximately 45 feet east of apartment complex
Tuesday February 22, 2022

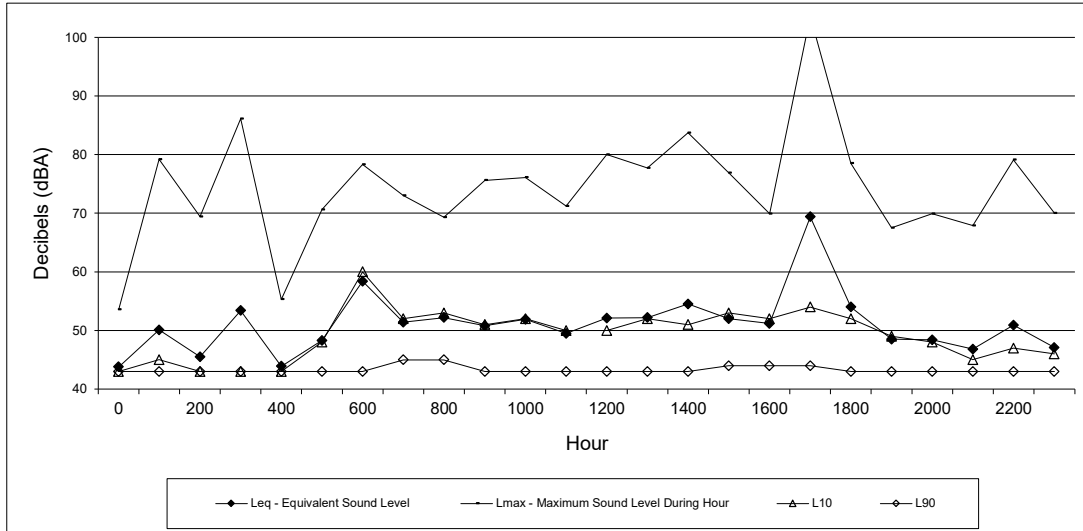
Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	45	59	44	43
100	44	60	43	43
200	47	77	43	43
300	44	59	44	43
400	45	65	43	43
500	58	82	53	43
600	52	72	55	43
700	63	91	52	44
800	50	66	51	44
900	49	64	50	44
1000	57	85	53	44
1100	62	85	54	43
1200	61	83	58	44
1300	53	77	51	43
1400	52	73	51	44
1500	51	75	51	44
1600	54	77	55	46
1700	59	75	59	50
1800	56	76	54	45
1900	53	73	52	43
2000	56	83	52	43
2100	50	70	49	43
2200	50	75	49	43
2300	47	71	48	43



Site 11: Along D'Avila Way on a fence, approximately 45 feet east of apartment complex
Wednesday February 23, 2022

Leq - Equivalent Sound Level		Lmax - Maximum Sound Level During			
Hour		Hour	L10	L90	
0	44	61	45	43	
100	46	74	44	43	
200	44	59	44	43	
300	45	67	44	43	
400	44	56	45	43	
500	49	70	49	43	
600	53	76	53	43	
700	51	71	51	45	
800	53	69	54	47	
900	56	85	53	44	
1000	52	76	50	43	
1100	49	67	49	43	
1200	52	73	50	43	
1300	56	86	50	43	
1400	55	86	50	43	
1500	52	71	53	43	
1600	51	70	51	43	
1700	52	72	52	43	
1800	59	88	54	43	
1900	50	71	50	43	
2000	48	67	48	43	
2100	48	72	46	43	
2200	47	71	47	43	
2300	46	67	45	43	

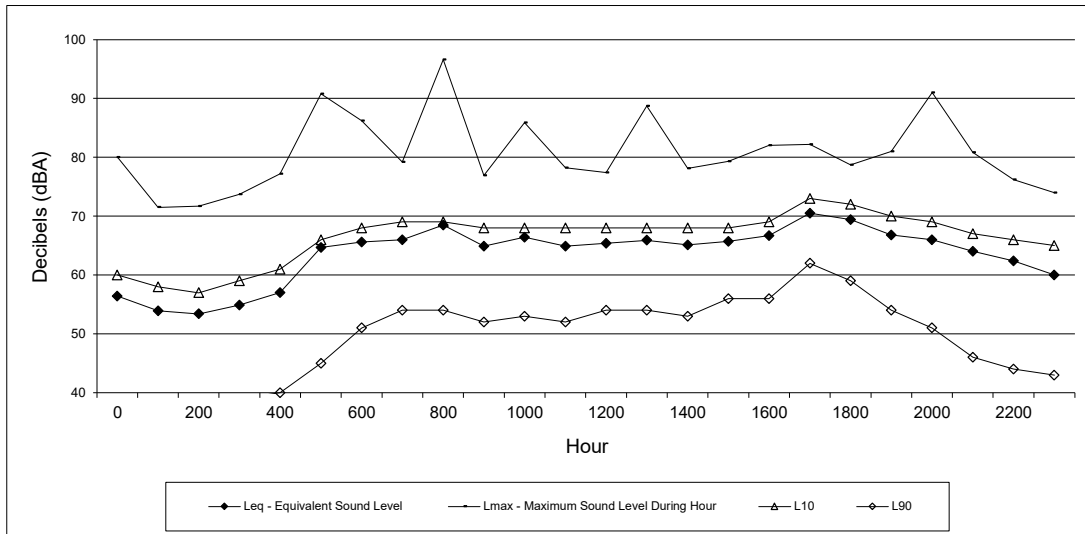
CNEL: 56



Site 11: Along D'Avila Way on a fence, approximately 45 feet east of apartment complex
Thursday February 24, 2022

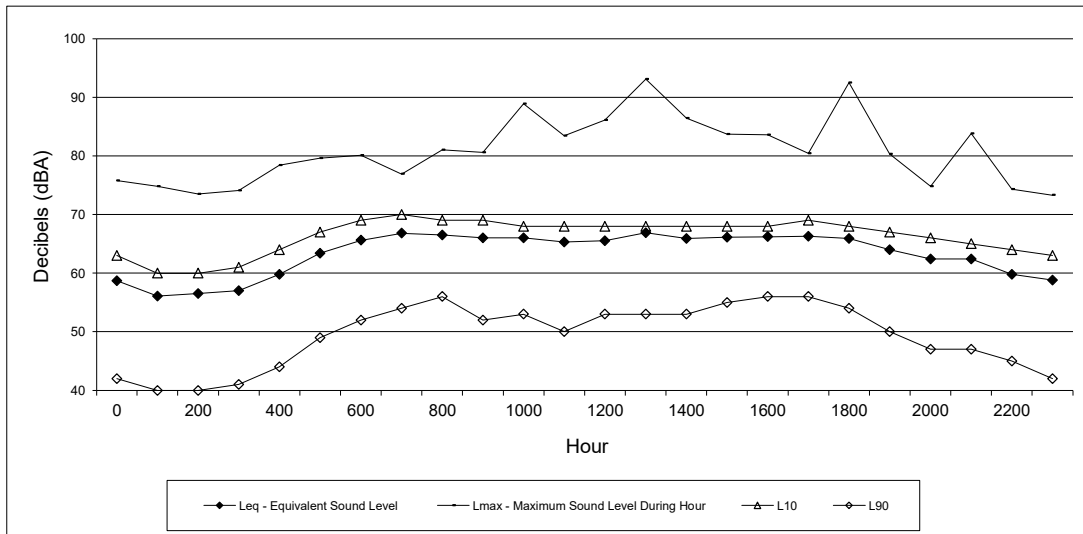
Leq - Equivalent Sound Level		Lmax - Maximum Sound Level During			
Hour		Hour	L10	L90	
0	44	54	43	43	
100	50	79	45	43	
200	46	69	43	43	
300	53	86	43	43	
400	44	55	43	43	
500	48	71	48	43	
600	58	78	60	43	
700	51	73	52	45	
800	52	69	53	45	
900	51	76	51	43	
1000	52	76	52	43	
1100	50	71	50	43	
1200	52	80	50	43	
1300	52	78	52	43	
1400	55	84	51	43	
1500	52	77	53	44	
1600	51	70	52	44	
1700	69	104	54	44	
1800	54	79	52	43	
1900	49	68	49	43	
2000	48	70	48	43	
2100	47	68	45	43	
2200	51	79	47	43	
2300	47	70	46	43	

CNEL: 60



Site 12: Intersection of Campbell Lane and San Pablo Dam Road, approximately 50 feet north of San Pablo Dam Road
Tuesday February 22, 2022

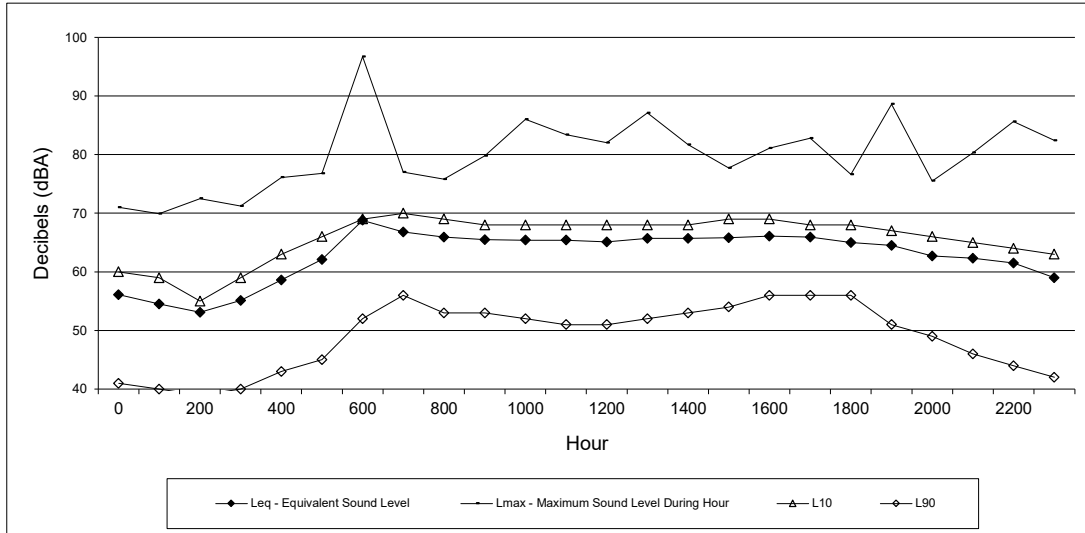
Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	56	80	60	39
100	54	72	58	39
200	53	72	57	39
300	55	74	59	39
400	57	77	61	40
500	65	91	66	45
600	66	86	68	51
700	66	79	69	54
800	69	97	69	54
900	65	77	68	52
1000	66	86	68	53
1100	65	78	68	52
1200	65	77	68	54
1300	66	89	68	54
1400	65	78	68	53
1500	66	79	68	56
1600	67	82	69	56
1700	71	82	73	62
1800	69	79	72	59
1900	67	81	70	54
2000	66	91	69	51
2100	64	81	67	46
2200	62	76	66	44
2300	60	74	65	43



Site 12: Intersection of Campbell Lane and San Pablo Dam Road, approximately 50 feet north of San Pablo Dam Road
Wednesday February 23, 2022

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	59	76	63	42
100	56	75	60	40
200	57	74	60	40
300	57	74	61	41
400	60	78	64	44
500	63	80	67	49
600	66	80	69	52
700	67	77	70	54
800	67	81	69	56
900	66	81	69	52
1000	66	89	68	53
1100	65	83	68	50
1200	66	86	68	53
1300	67	93	68	53
1400	66	86	68	53
1500	66	84	68	55
1600	66	84	68	56
1700	66	80	69	56
1800	66	93	68	54
1900	64	80	67	50
2000	62	75	66	47
2100	62	84	65	47
2200	60	74	64	45
2300	59	73	63	42

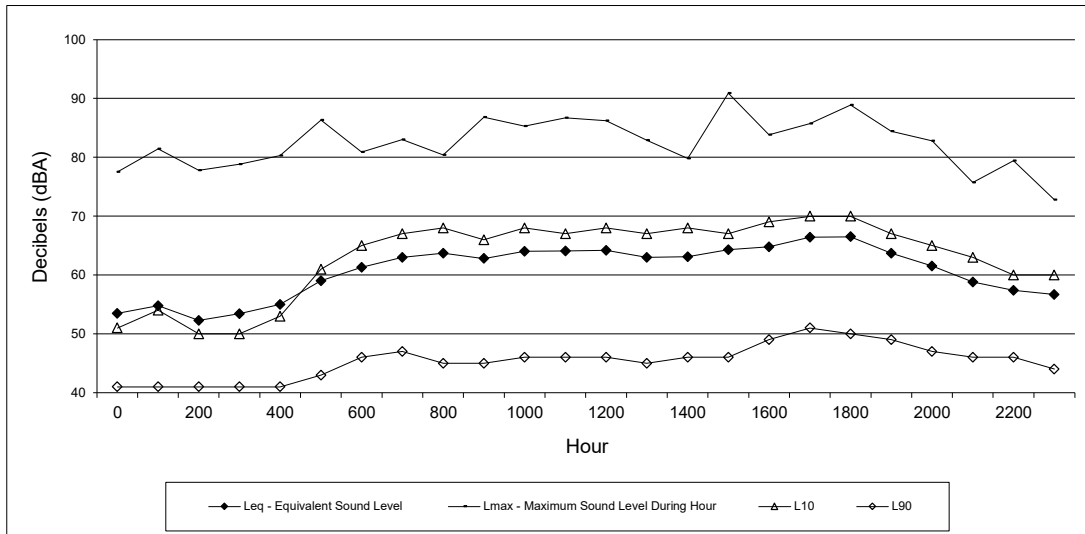
CNEL: 69



Site 12: Intersection of Campbell Lane and San Pablo Dam Road, approximately 50 feet north of San Pablo Dam Road
Thursday February 24, 2022

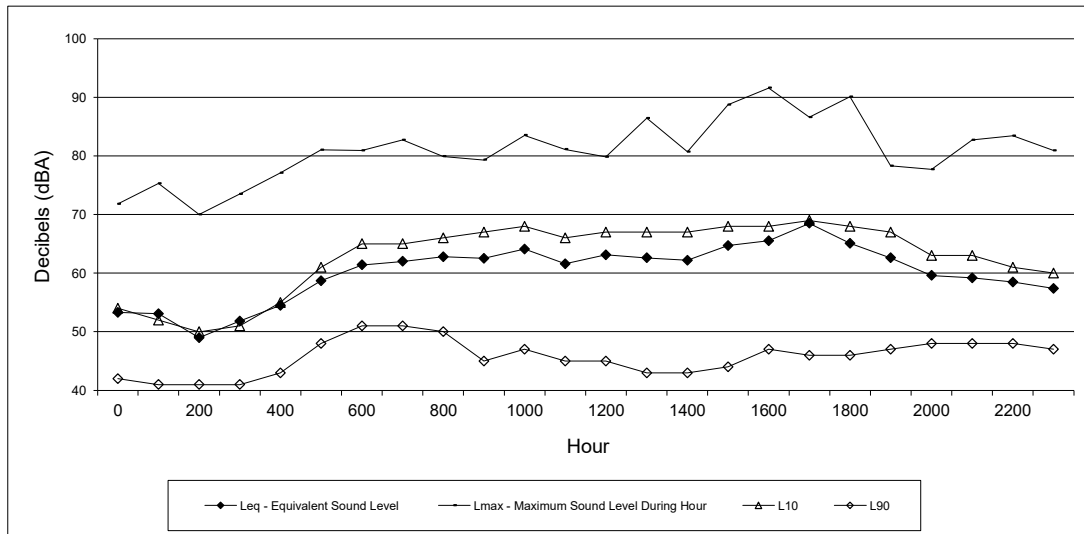
Leq - Equivalent Sound Level		Lmax - Maximum Sound Level During			
Hour		Hour	L10	L90	
0	56	71	60	41	
100	55	70	59	40	
200	53	73	55	39	
300	55	71	59	40	
400	59	76	63	43	
500	62	77	66	45	
600	69	97	69	52	
700	67	77	70	56	
800	66	76	69	53	
900	66	80	68	53	
1000	65	86	68	52	
1100	65	83	68	51	
1200	65	82	68	51	
1300	66	87	68	52	
1400	66	82	68	53	
1500	66	78	69	54	
1600	66	81	69	56	
1700	66	83	68	56	
1800	65	77	68	56	
1900	65	89	67	51	
2000	63	76	66	49	
2100	62	80	65	46	
2200	62	86	64	44	
2300	59	82	63	42	

CNEL: 69



Site 13: Along Road 20, directly south of residences, approximately 160 feet north of Helms Middle School
Tuesday February 22, 2022

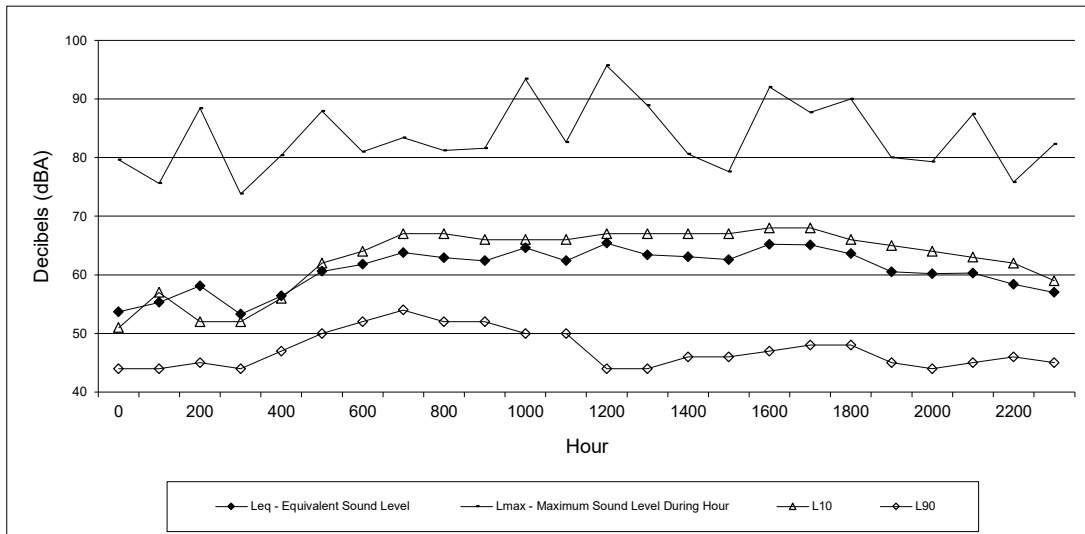
Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	54	78	51	41
100	55	81	54	41
200	52	78	50	41
300	53	79	50	41
400	55	80	53	41
500	59	86	61	43
600	61	81	65	46
700	63	83	67	47
800	64	80	68	45
900	63	87	66	45
1000	64	85	68	46
1100	64	87	67	46
1200	64	86	68	46
1300	63	83	67	45
1400	63	80	68	46
1500	64	91	67	46
1600	65	84	69	49
1700	66	86	70	51
1800	67	89	70	50
1900	64	84	67	49
2000	62	83	65	47
2100	59	76	63	46
2200	57	79	60	46
2300	57	73	60	44



Site 13: Along Road 20, directly south of residences, approximately 160 feet north of Helms Middle School
Wednesday February 23, 2022

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During	L10	L90
0	53	72	54	42
100	53	75	52	41
200	49	70	50	41
300	52	74	51	41
400	55	77	55	43
500	59	81	61	48
600	61	81	65	51
700	62	83	65	51
800	63	80	66	50
900	63	79	67	45
1000	64	84	68	47
1100	62	81	66	45
1200	63	80	67	45
1300	63	86	67	43
1400	62	81	67	43
1500	65	89	68	44
1600	66	92	68	47
1700	69	87	69	46
1800	65	90	68	46
1900	63	78	67	47
2000	60	78	63	48
2100	59	83	63	48
2200	59	83	61	48
2300	57	81	60	47

CNEL: 66



Site 13: Along Road 20, directly south of residences, approximately 160 feet north of Helms Middle School
Thursday February 24, 2022

Leq - Equivalent Sound Level		Lmax - Maximum Sound Level During			
Hour		Hour	L10	L90	
0	54	80	51	44	
100	55	76	57	44	
200	58	88	52	45	
300	53	74	52	44	
400	56	80	56	47	
500	61	88	62	50	
600	62	81	64	52	
700	64	83	67	54	
800	63	81	67	52	
900	62	82	66	52	
1000	65	93	66	50	
1100	62	83	66	50	
1200	65	96	67	44	
1300	63	89	67	44	
1400	63	81	67	46	
1500	63	78	67	46	
1600	65	92	68	47	
1700	65	88	68	48	
1800	64	90	66	48	
1900	61	80	65	45	
2000	60	79	64	44	
2100	60	87	63	45	
2200	58	76	62	46	
2300	57	82	59	45	

CNEL: 66

Appendix H – Traffic

Acronyms and Abbreviations

ApbT	adjustment factor for pedestrians and bicycles
EB	east bound
HT	haul truck
min	minute
NB	north bound
PHF	peak hour factor
s	second
SB	south bound
s/veh	second per vehicle
TEV	total entering vehicles
veh/h	vehicles per hour
veh/h/ln	vehicles per hour per lane
WB	west bound

Valley View Rd & San Pablo Dam Rd

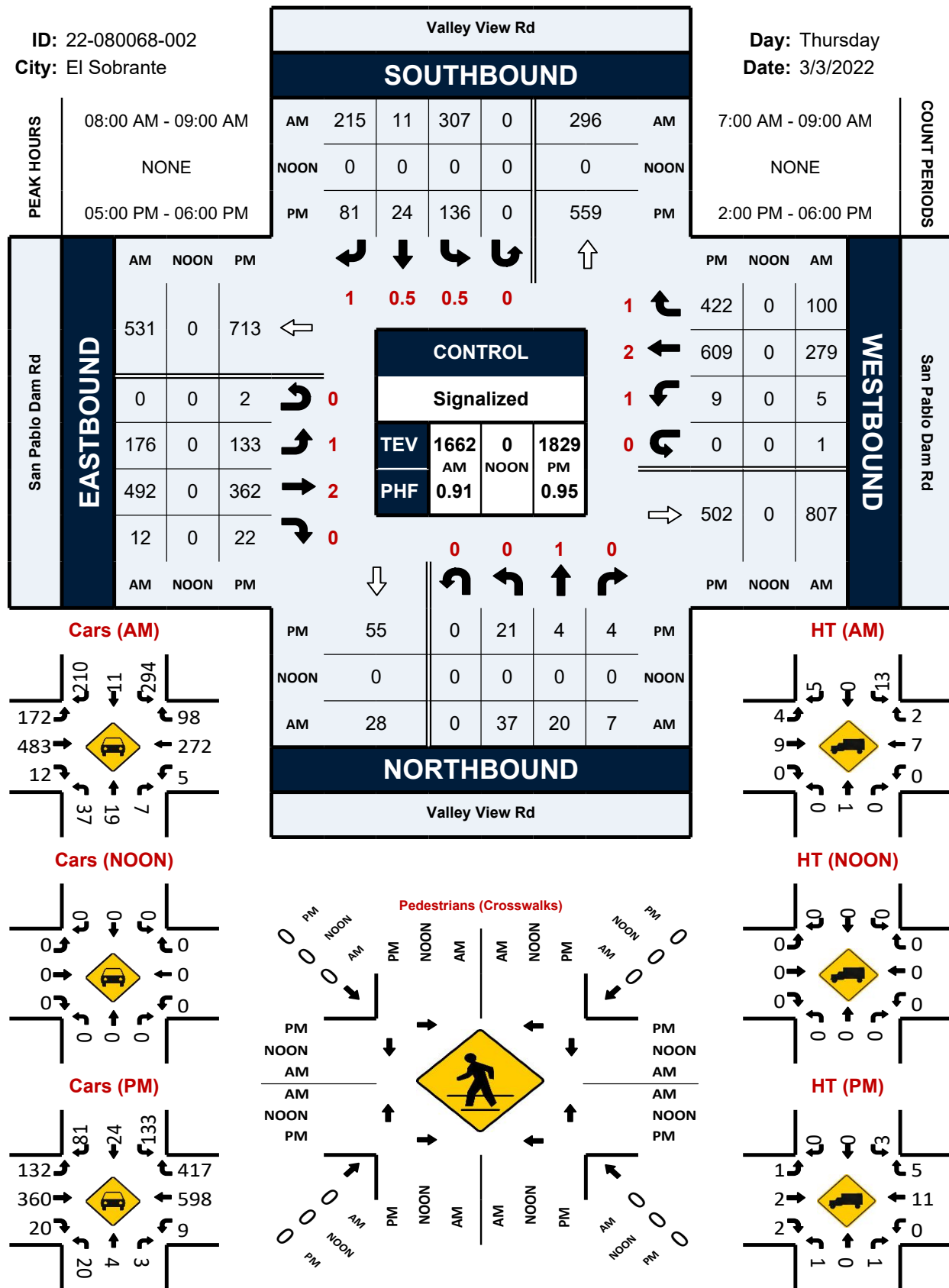
Peak Hour Turning Movement Count

ID: 22-080068-002

City: El Sobrante

Day: Thursday

Date: 3/3/2022

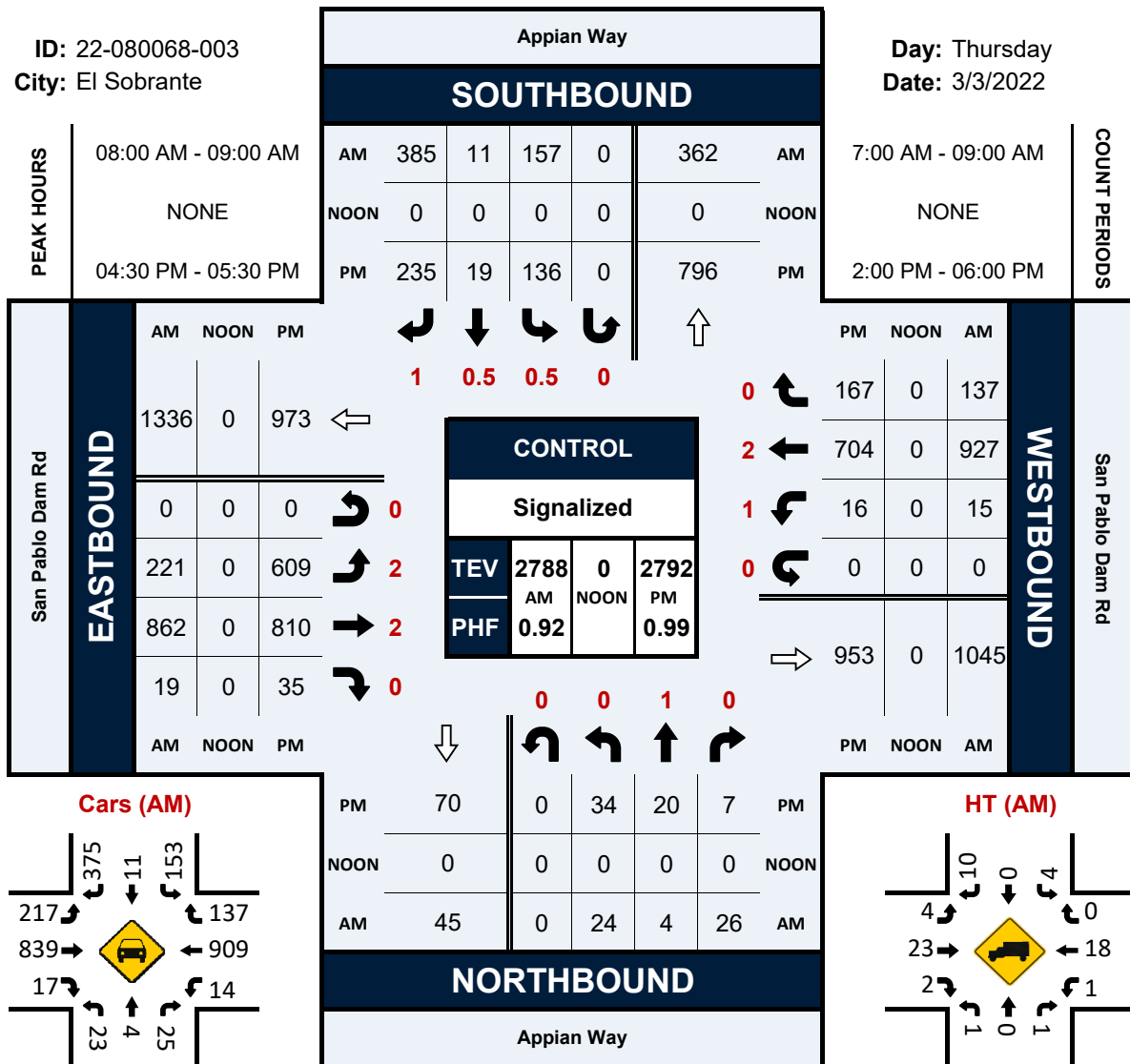


Appian Way & San Pablo Dam Rd

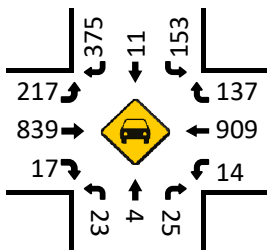
Peak Hour Turning Movement Count

ID: 22-080068-003
City: El Sobrante

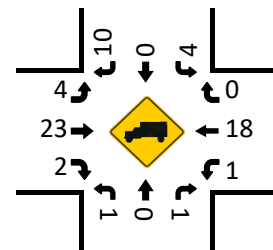
Day: Thursday
Date: 3/3/2022



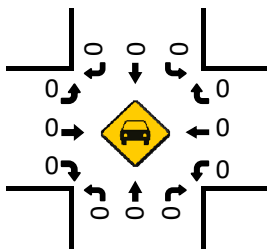
Cars (AM)



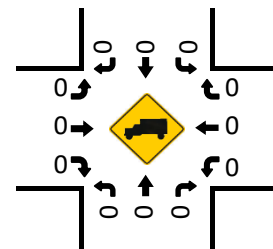
HT (AM)



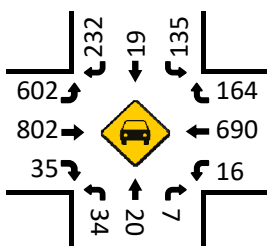
Cars (NOON)



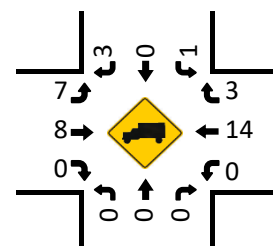
HT (NOON)



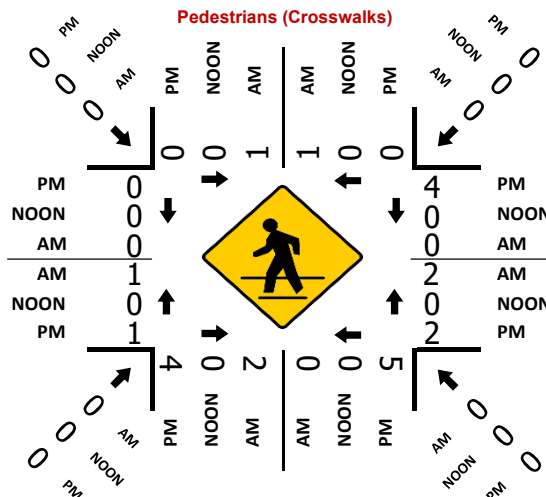
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)

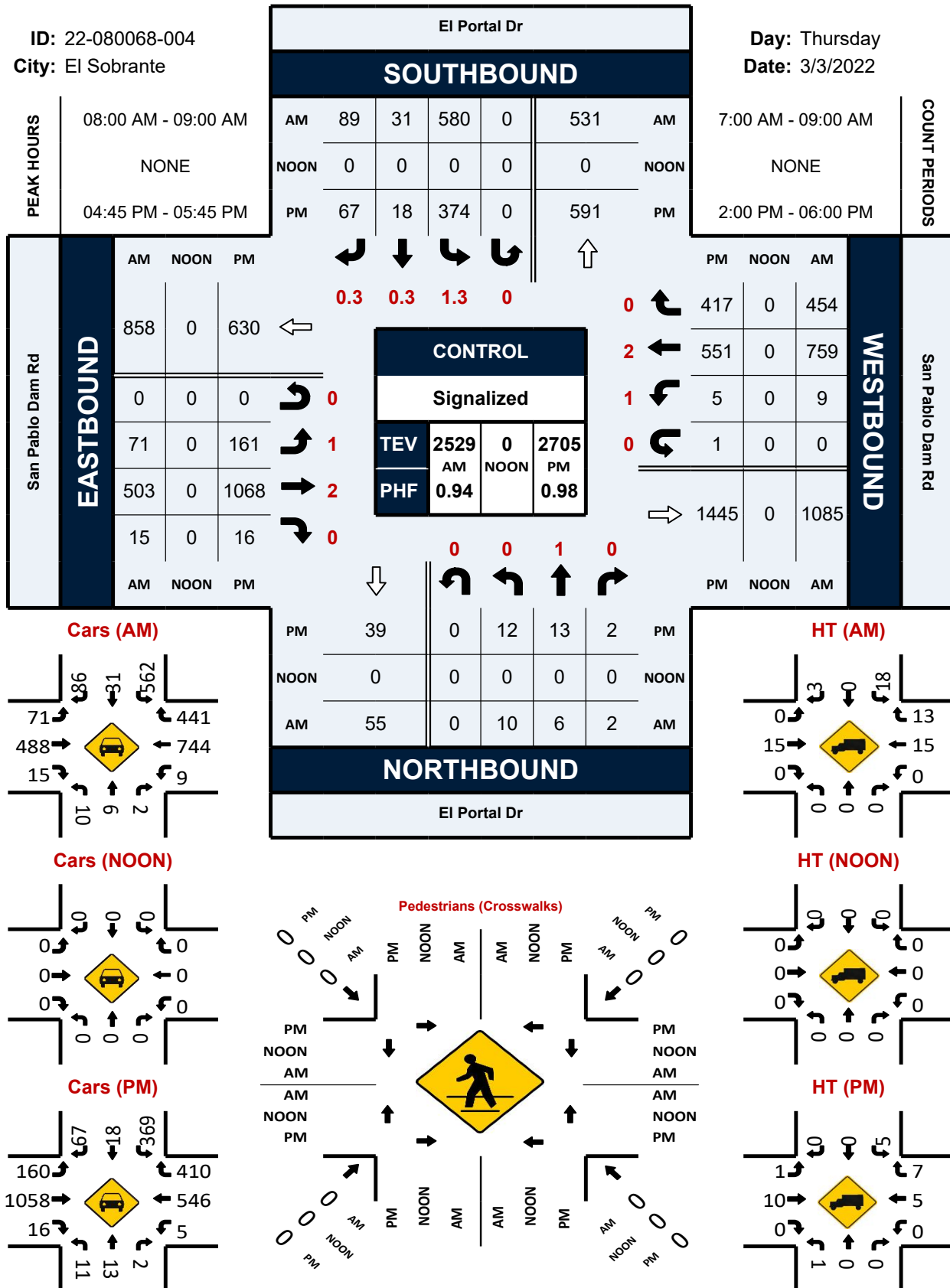


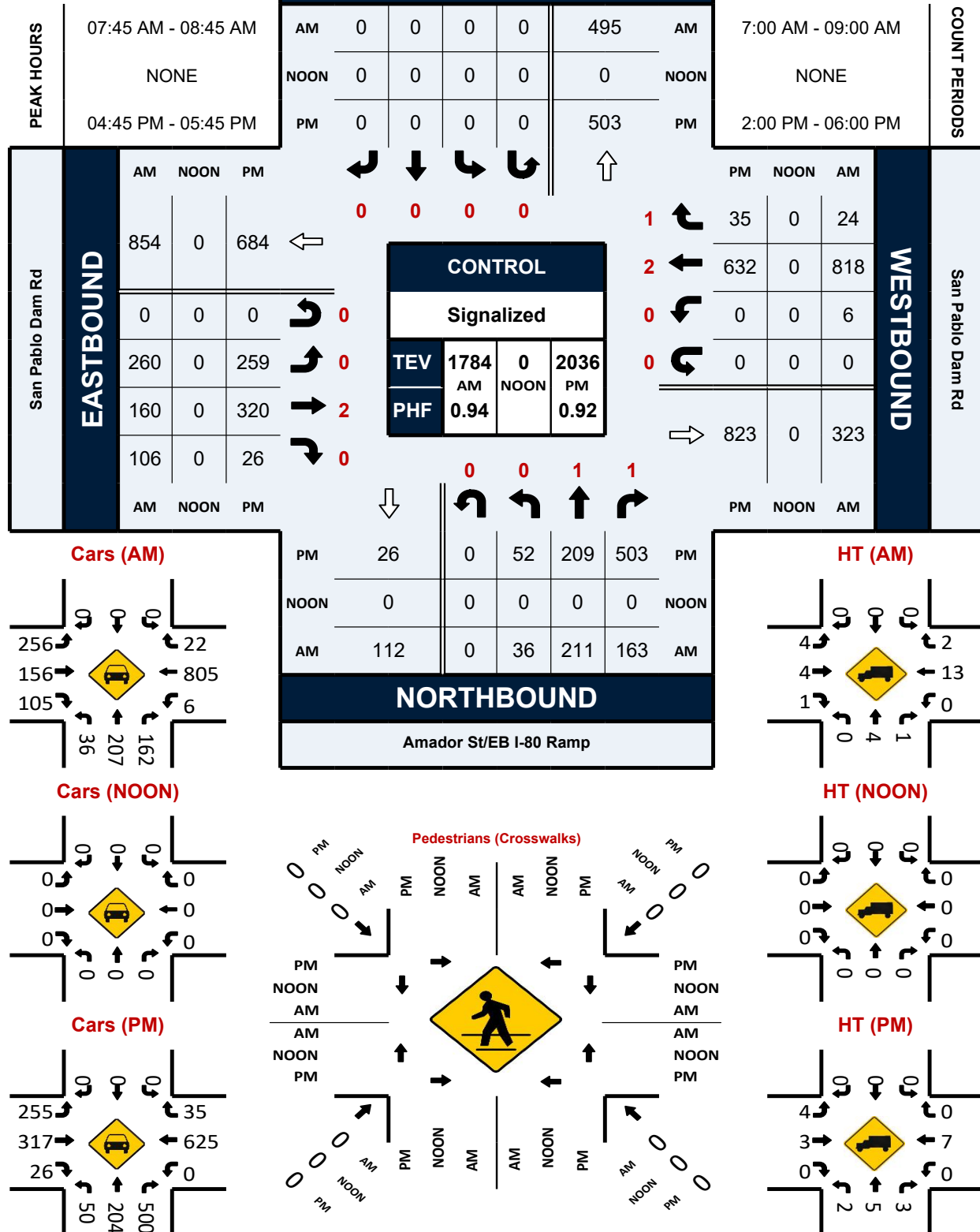
El Portal Dr & San Pablo Dam Rd

Peak Hour Turning Movement Count

ID: 22-080068-004
City: El Sobrante

Day: Thursday
Date: 3/3/2022





Date: 3/3/2022

PEAK HOURS

08:00 AM - 09:00 AM	AM	0	0	0	0	523	AM	7:00 AM - 09:00 AM
NONE	NOON	0	0	0	0	0	NOON	NONE
03:00 PM - 04:00 PM	PM	0	0	0	0	582	PM	2:00 PM - 06:00 PM

COUNT PERIODS

AM	NOON	PM
757	0	764
0	0	0
347	0	351
618	0	511
0	0	0
AM	NOON	PM

EASTBOUND

CONTROL

Signalized

TEV 2100 AM 0 NOON 1994 PM

PHF 0.99 0.97

WESTBOUND

NORTHBOUND

EB I-80 Ramps

Cars (AM)

Cars (NOON)

Cars (PM)

HT (AM)

HT (NOON)

HT (PM)

Pedestrians (Crosswalks)

WB I-80 Ramps & El Portal Dr

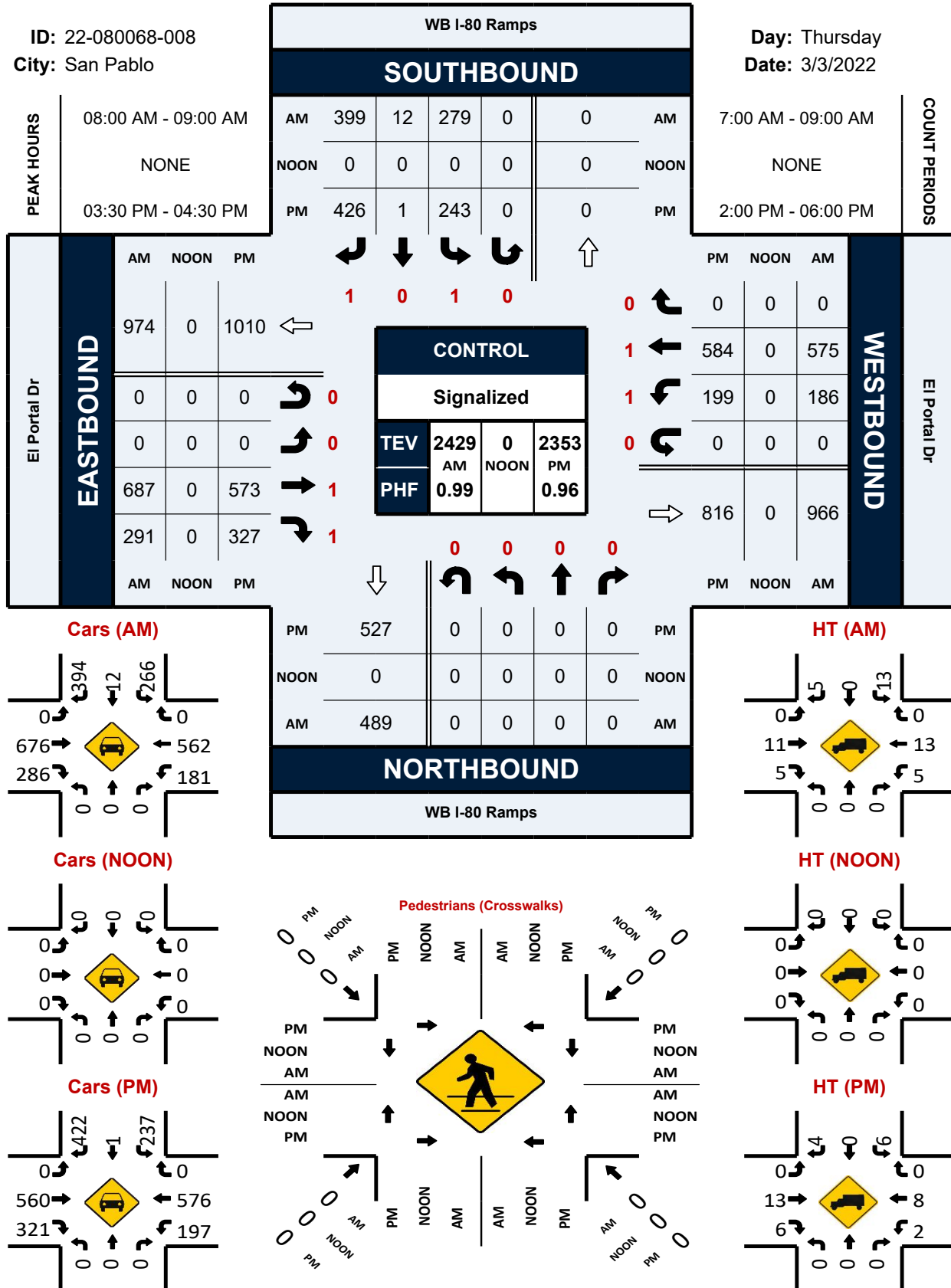
Peak Hour Turning Movement Count

ID: 22-080068-008

City: San Pablo

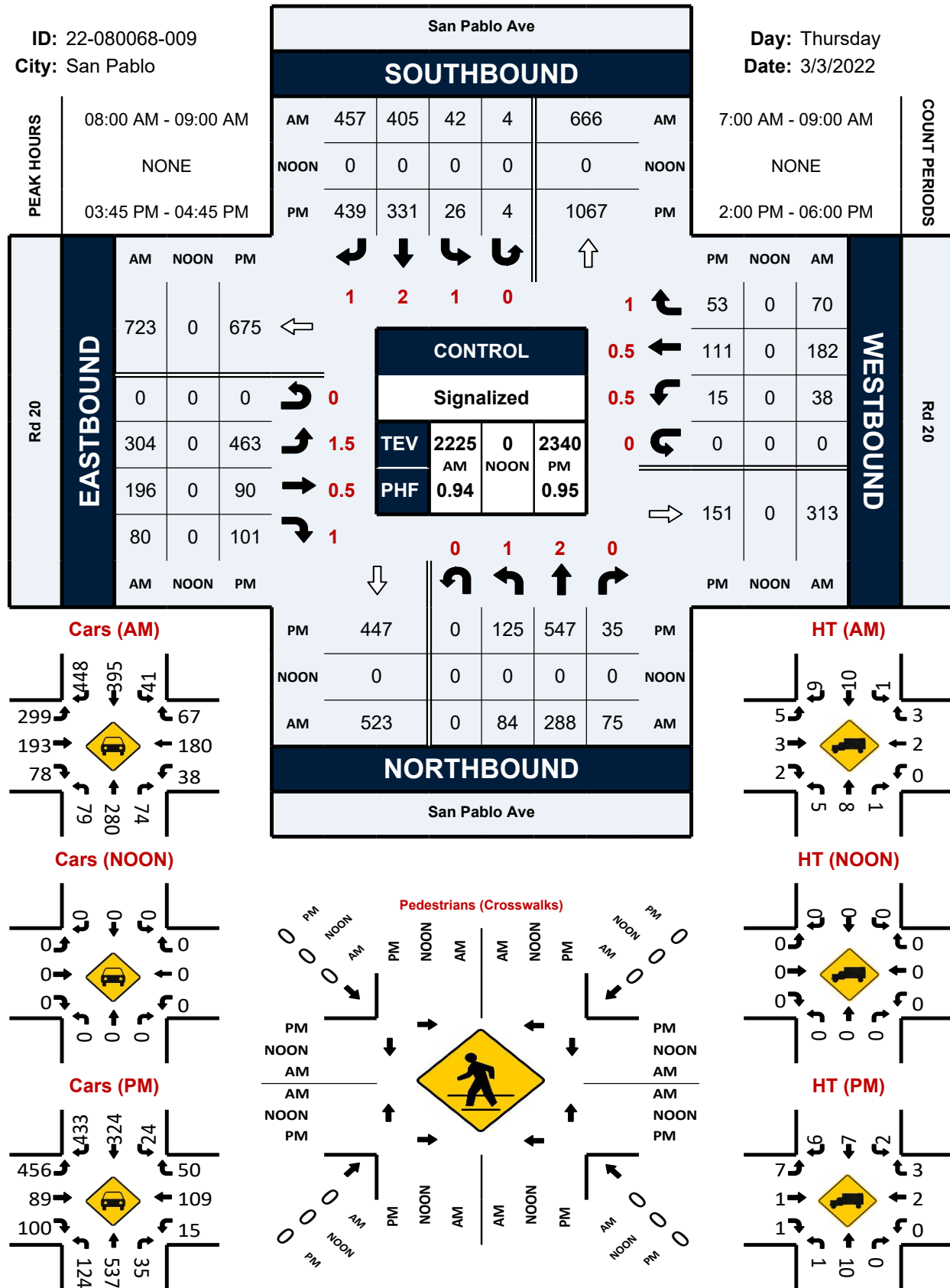
Day: Thursday

Date: 3/3/2022

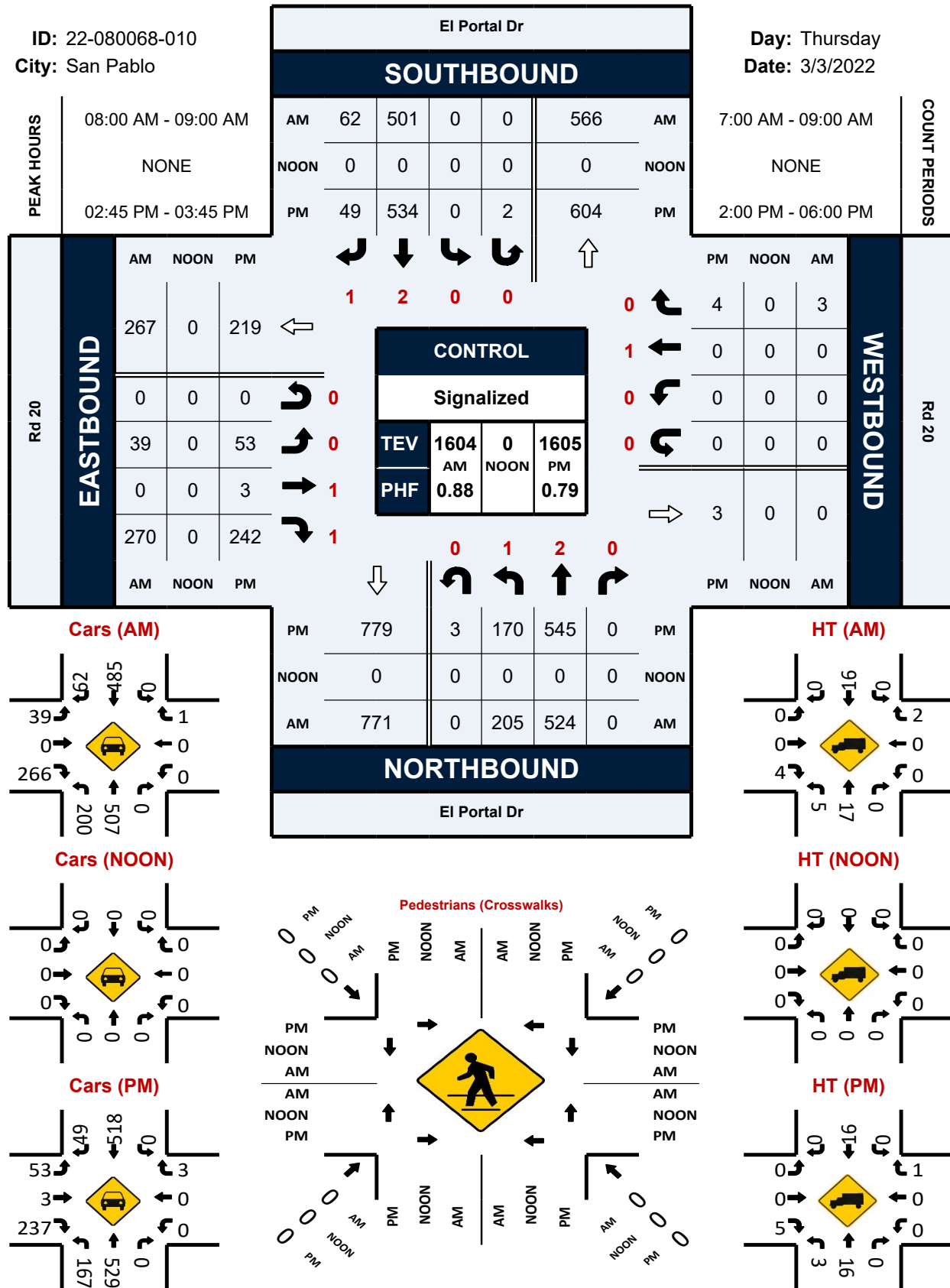


ID: 22-080068-009
City: San Pablo

Day: Thursday
Date: 3/3/2022



Day: Thursday
Date: 3/3/2022

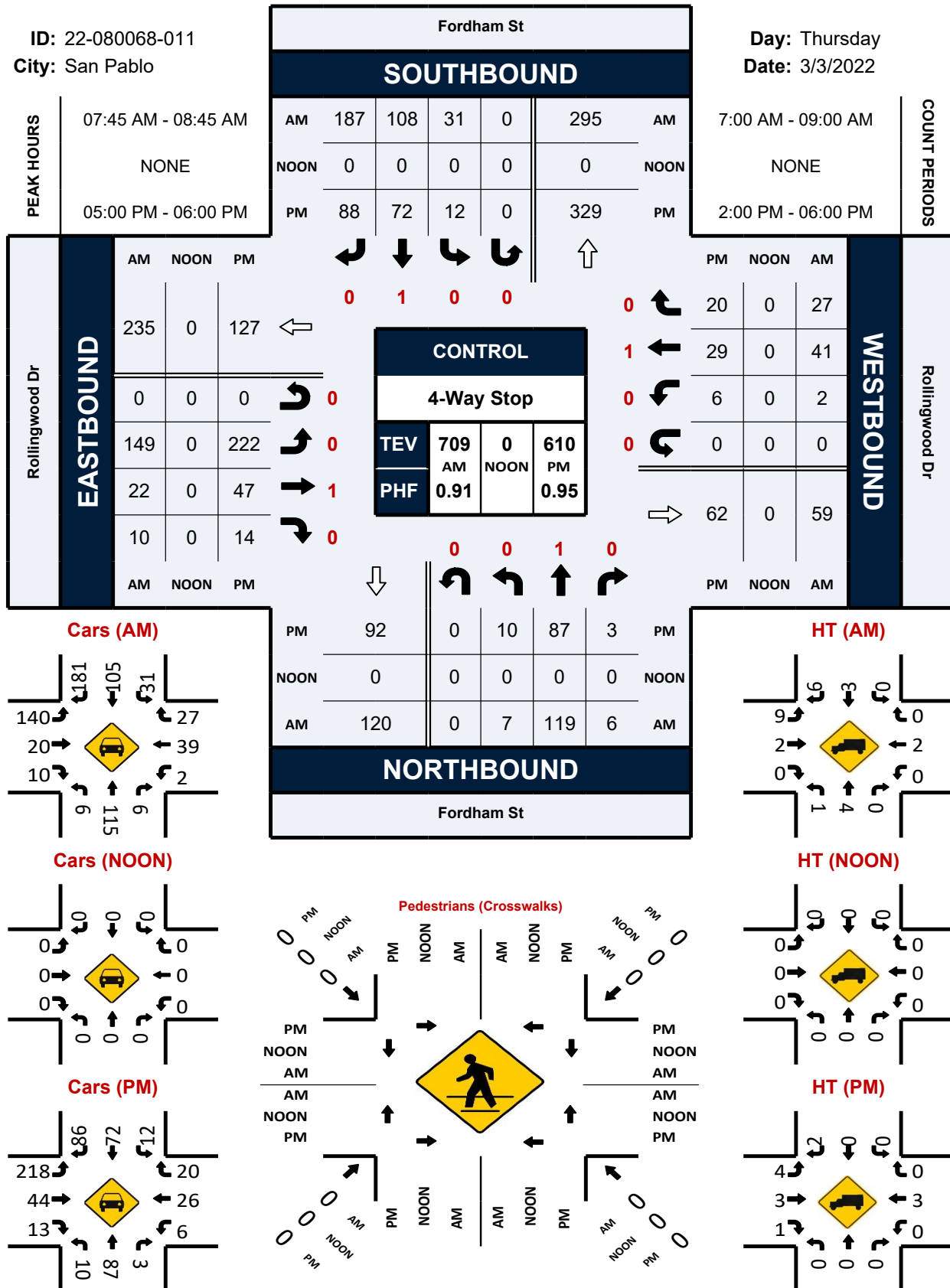


Fordham St & Rollingwood Dr

Peak Hour Turning Movement Count

ID: 22-080068-011
City: San Pablo

Day: Thursday
Date: 3/3/2022



El Portal Dr & Glenlock St

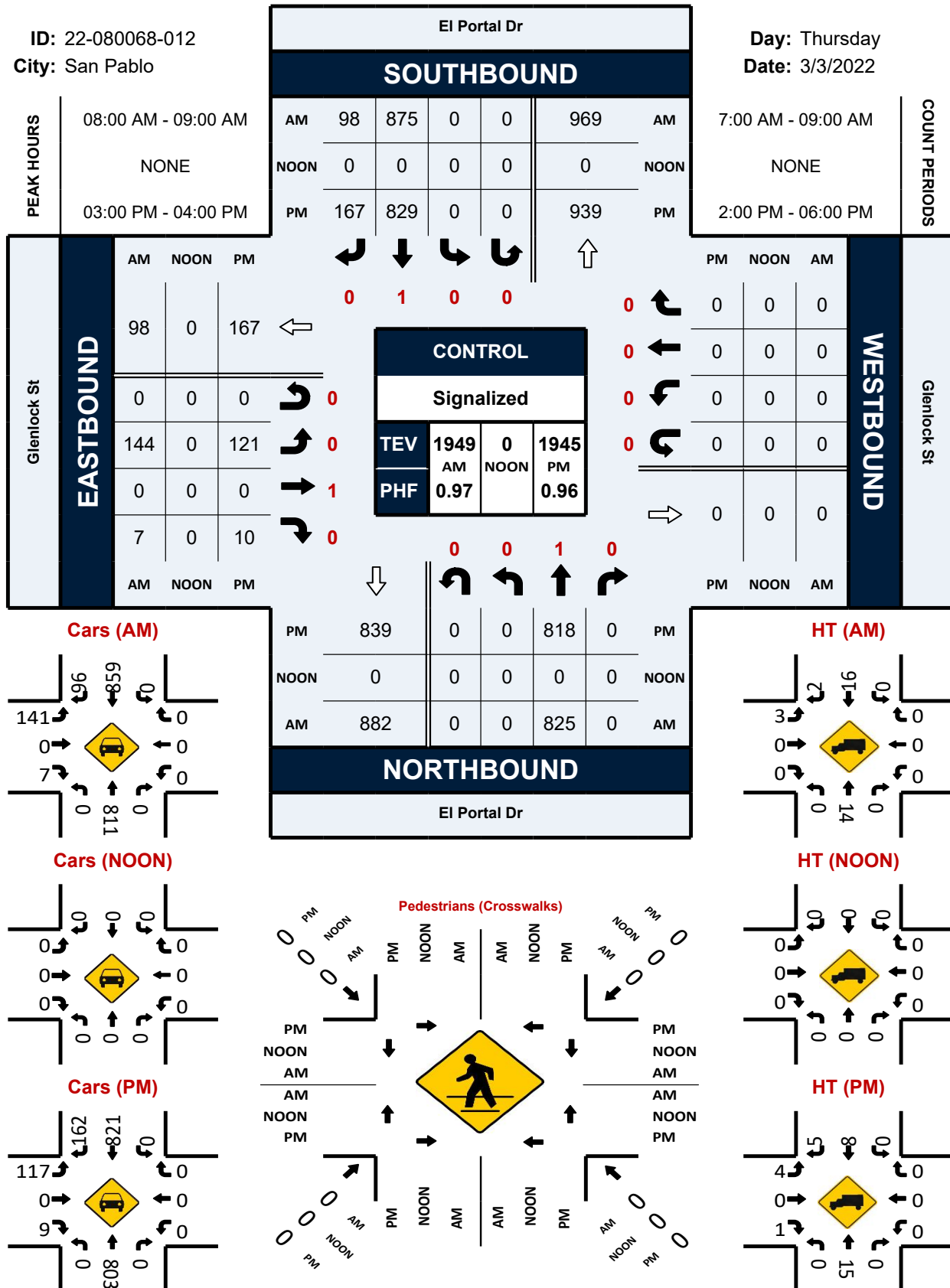
Peak Hour Turning Movement Count

ID: 22-080068-012

City: San Pablo

Day: Thursday

Date: 3/3/2022

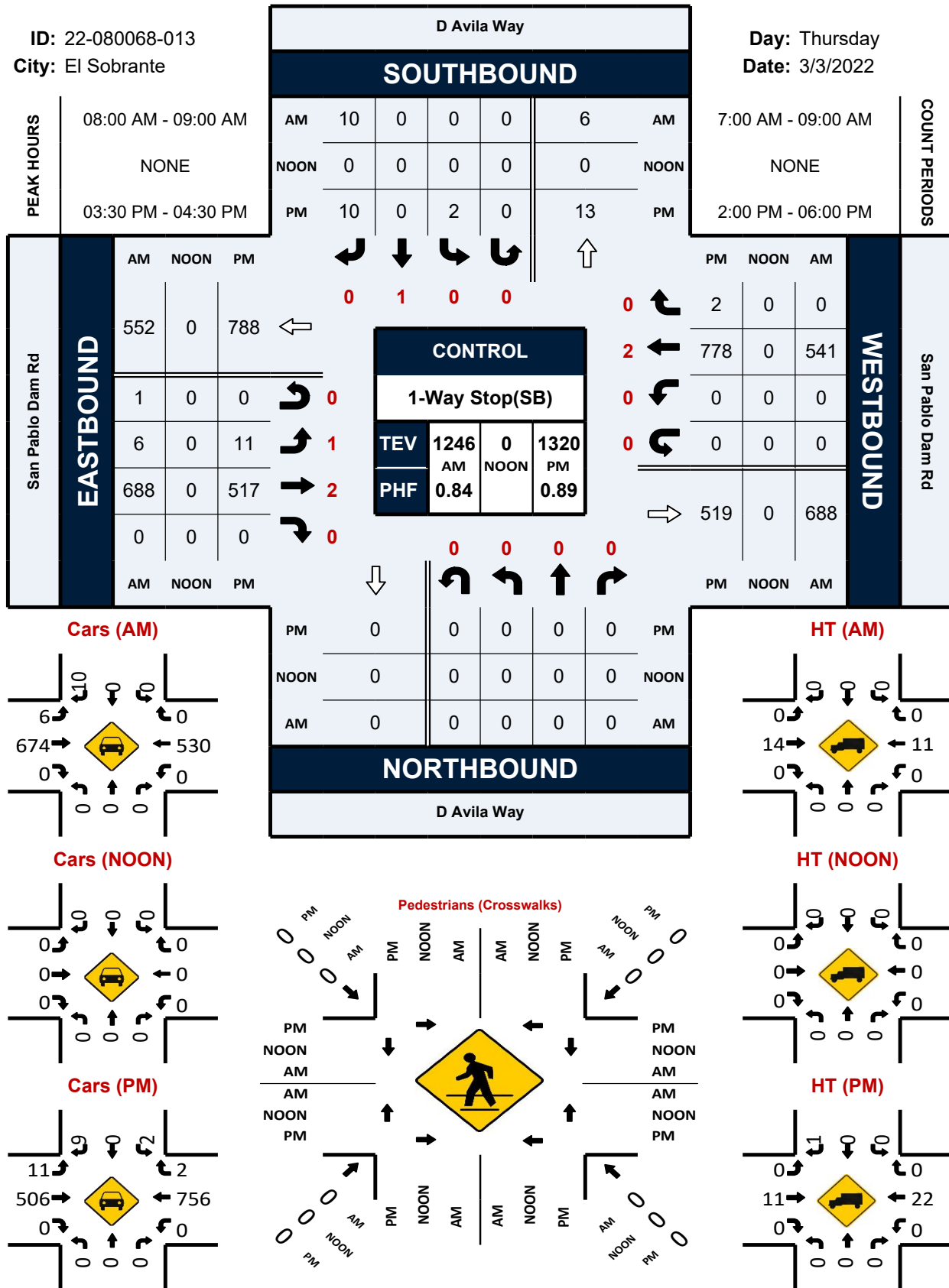


D Avila Way & San Pablo Dam Rd

Peak Hour Turning Movement Count

ID: 22-080068-013
City: El Sobrante

Day: Thursday
Date: 3/3/2022

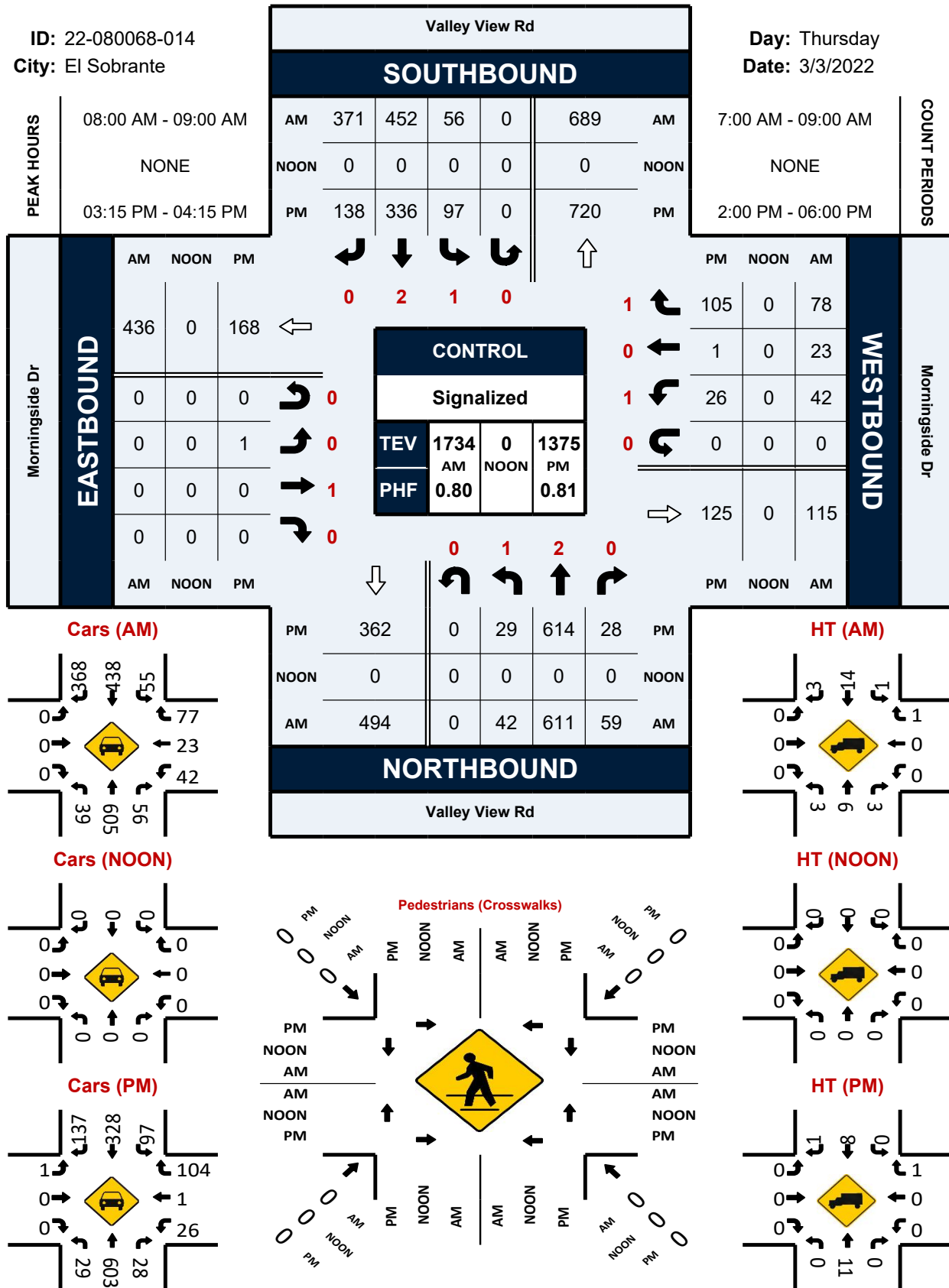


Valley View Rd & Morningside Dr

Peak Hour Turning Movement Count

ID: 22-080068-014
City: El Sobrante

Day: Thursday
Date: 3/3/2022



Sobranite Ave & Valley View Rd

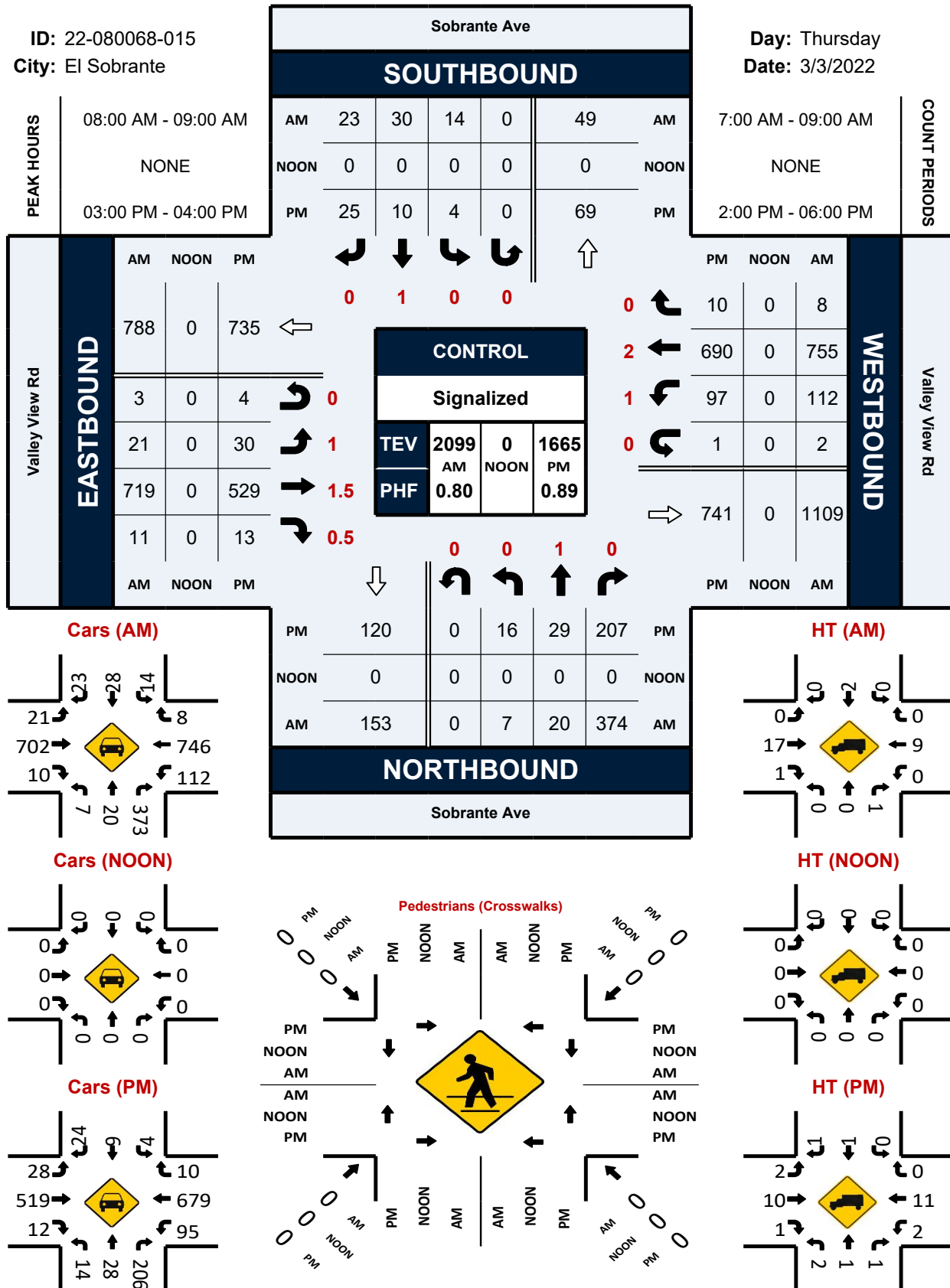
Peak Hour Turning Movement Count

ID: 22-080068-015

City: El Sobranite

Day: Thursday

Date: 3/3/2022

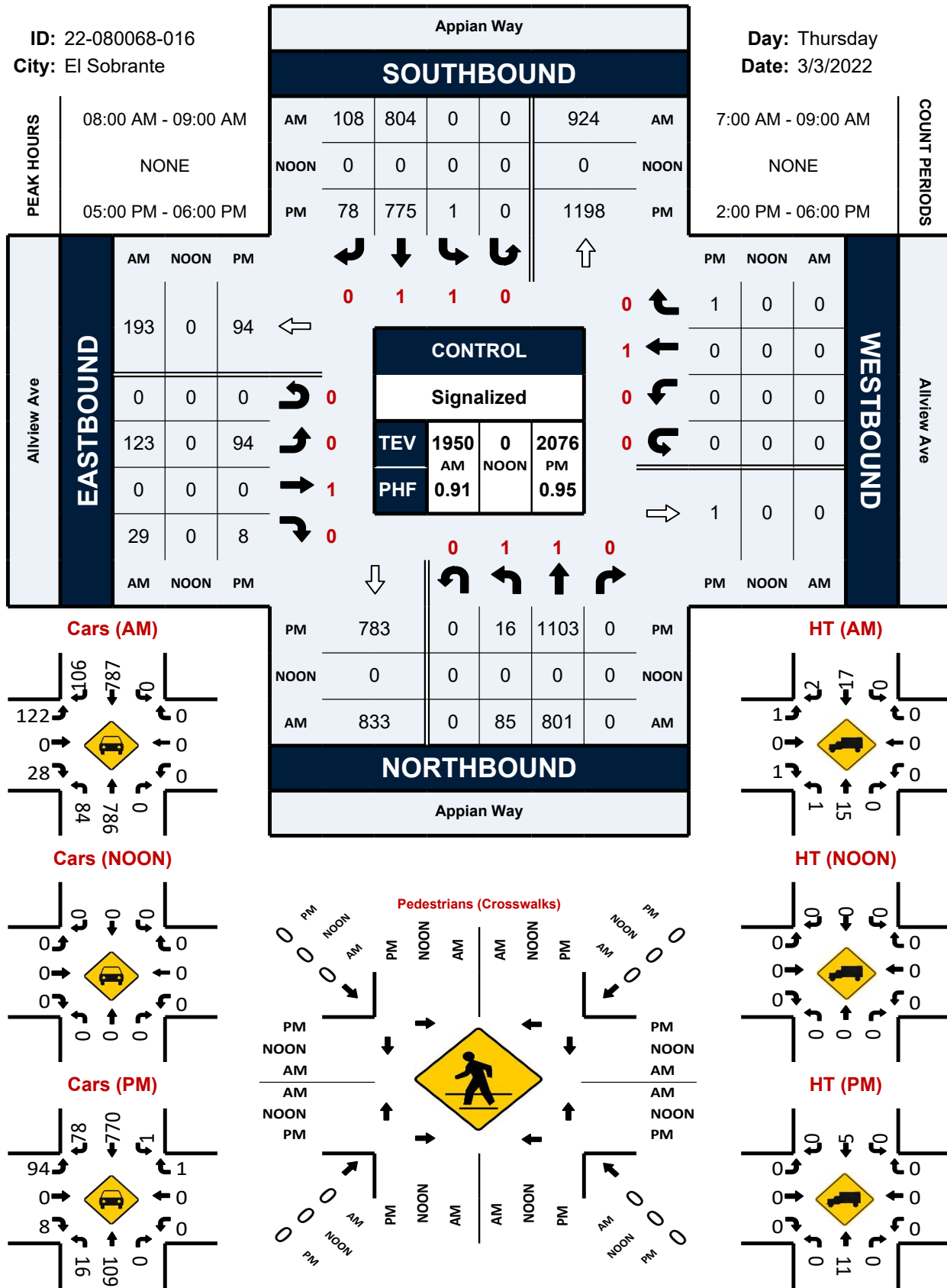


Appian Way & Allview Ave

Peak Hour Turning Movement Count

ID: 22-080068-016
City: El Sobrante

Day: Thursday
Date: 3/3/2022



Appian Way & EB I-80 Ramps

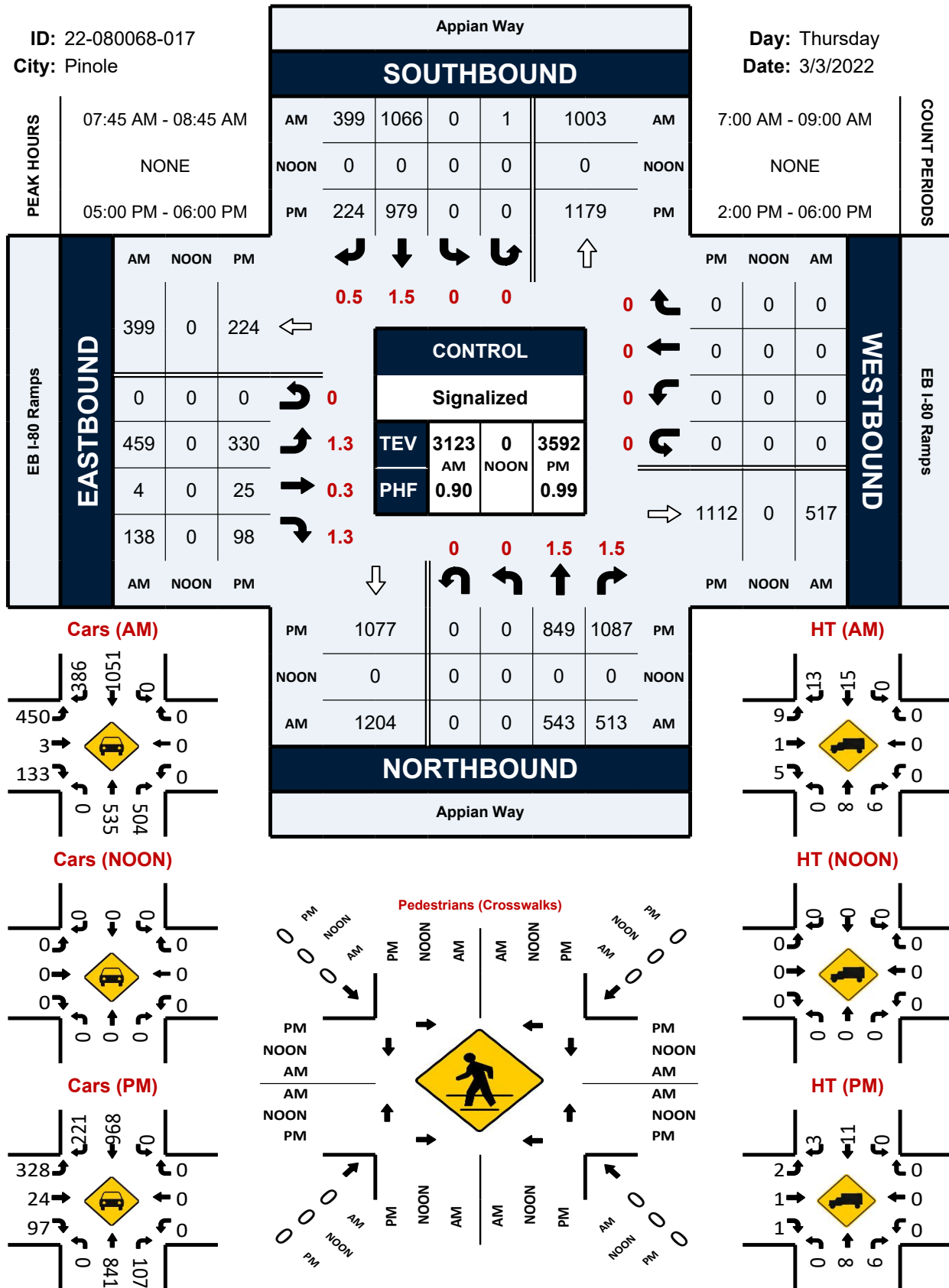
Peak Hour Turning Movement Count

ID: 22-080068-017

City: Pinole

Day: Thursday

Date: 3/3/2022



Appian Way & WB I-80 Ramps

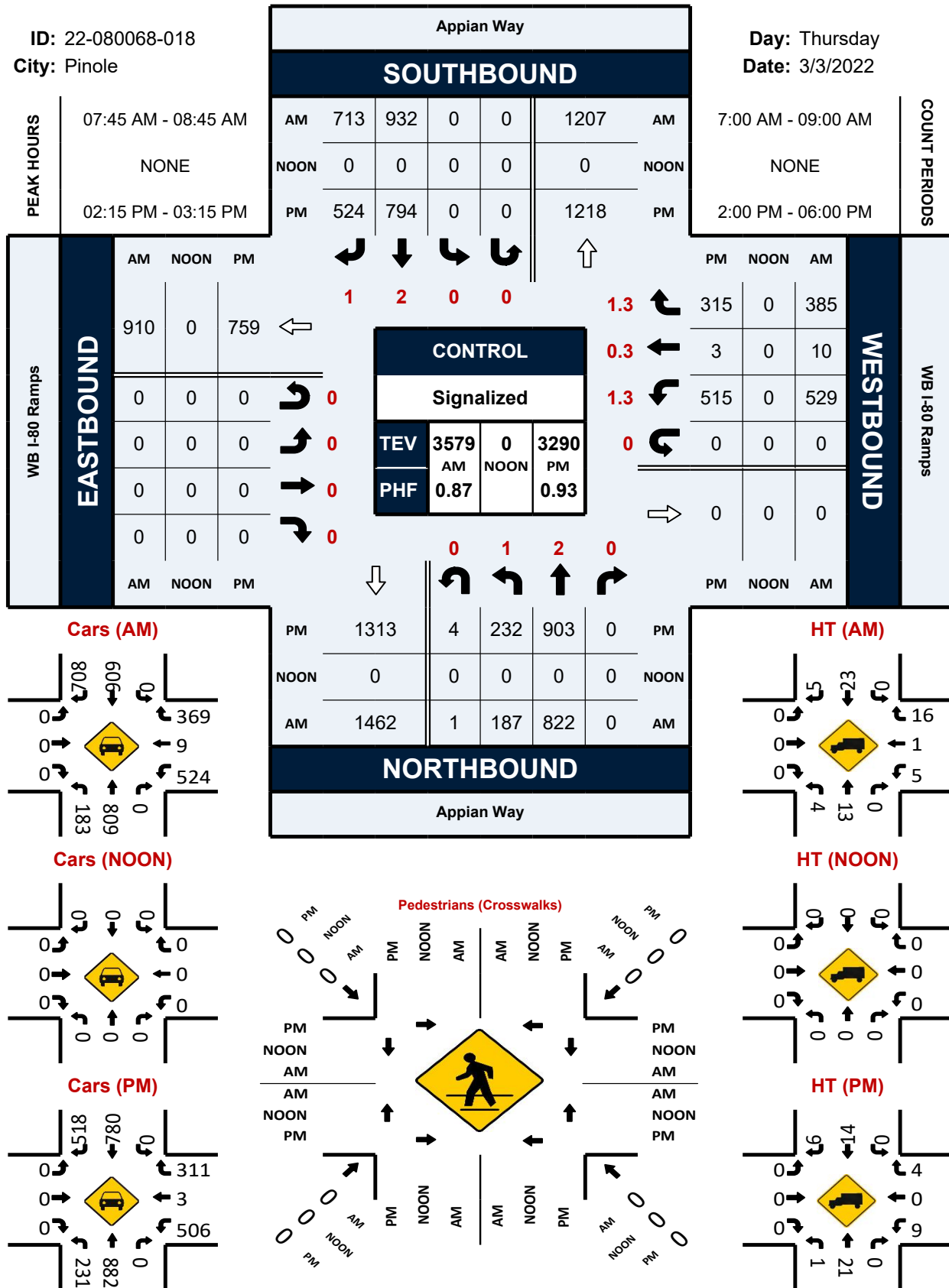
Peak Hour Turning Movement Count

ID: 22-080068-018

City: Pinole

Day: Thursday

Date: 3/3/2022



VOLUME

Appian Way Bet. WB I-80 Ramps & Fitzgerald Dr/Sarah Dr

Day: Thursday
Date: 3/3/2022City: Pinole
Project #: CA22_080069_001

DAILY TOTALS					NB	SB					EB	WB	Total
					18,019	14,666					0	0	32,685
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL		
00:00	30	20			50	12:00	292	254			546		
00:15	30	23			53	12:15	260	275			535		
00:30	22	18			40	12:30	275	230			505		
00:45	26	108	16	77	42	12:45	292	1119	247	1006	539	2125	
01:00	10	19			29	13:00	305	248			553		
01:15	9	11			20	13:15	281	270			551		
01:30	10	15			25	13:30	292	248			540		
01:45	13	42	8	53	21	13:45	312	1190	255	1021	567	2211	
02:00	7	8			15	14:00	287	266			553		
02:15	13	8			21	14:15	322	247			569		
02:30	9	10			19	14:30	333	284			617		
02:45	12	41	6	32	18	14:45	351	1293	295	1092	646	2385	
03:00	10	5			15	15:00	370	280			650		
03:15	23	11			34	15:15	397	280			677		
03:30	12	12			24	15:30	418	268			686		
03:45	13	58	10	38	23	15:45	449	1634	267	1095	716	2729	
04:00	18	7			25	16:00	432	251			683		
04:15	26	13			39	16:15	443	239			682		
04:30	33	21			54	16:30	411	234			645		
04:45	33	110	31	72	64	16:45	435	1721	242	966	677	2687	
05:00	38	36			74	17:00	455	270			725		
05:15	47	33			80	17:15	453	264			717		
05:30	66	48			114	17:30	457	244			701		
05:45	73	224	67	184	140	17:45	436	1801	264	1042	700	2843	
06:00	77	63			140	18:00	430	234			664		
06:15	91	69			160	18:15	371	234			605		
06:30	99	104			203	18:30	364	239			603		
06:45	113	380	152	388	265	18:45	300	1465	202	909	502	2374	
07:00	112	174			286	19:00	265	196			461		
07:15	140	180			320	19:15	229	191			420		
07:30	195	195			390	19:30	210	162			372		
07:45	198	645	251	800	449	19:45	199	903	146	695	345	1598	
08:00	226	281			507	20:00	207	147			354		
08:15	279	303			582	20:15	160	164			324		
08:30	312	290			602	20:30	161	132			293		
08:45	238	1055	245	1119	483	20:45	152	680	127	570	279	1250	
09:00	206	198			404	21:00	135	100			235		
09:15	175	212			387	21:15	100	96			196		
09:30	211	200			411	21:30	87	96			183		
09:45	236	828	208	818	444	21:45	90	412	83	375	173	787	
10:00	208	218			426	22:00	96	71			167		
10:15	219	214			433	22:15	77	61			138		
10:30	204	207			411	22:30	57	61			118		
10:45	230	861	244	883	474	22:45	66	296	58	251	124	547	
11:00	224	224			448	23:00	57	55			112		
11:15	235	252			487	23:15	41	49			90		
11:30	262	250			512	23:30	45	35			80		
11:45	255	976	284	1010	539	23:45	34	177	31	170	65	347	
TOTALS	5328	5474			10802	TOTALS	12691	9192			21883		
SPLIT %	49.3%	50.7%			33.0%	SPLIT %	58.0%	42.0%			67.0%		

DAILY TOTALS					NB	SB					EB	WB	Total
					18,019	14,666					0	0	32,685
AM Peak Hour	11:45	07:45			08:00	PM Peak Hour	17:00	14:30			17:00		
AM Pk Volume	1082	1125			2174	PM Pk Volume	1801	1139			2843		
Pk Hr Factor	0.926	0.928			0.903	Pk Hr Factor	0.985	0.965			0.980		
7 - 9 Volume	1700	1919	0	0	3619	4 - 6 Volume	3522	2008	0	0	5530		
7 - 9 Peak Hour	08:00	07:45			08:00	4 - 6 Peak Hour	17:00	17:00	0	0	17:00		
7 - 9 Pk Volume	1055	1125	0	0	2174	4 - 6 Pk Volume	1801	1042	0	0	2843		
Pk Hr Factor	0.845	0.928	0.000	0.000	0.903	Pk Hr Factor	0.985	0.965	0.000	0.000	0.980		

VOLUME

Appian Way Bet. Manor Rd & Argyle Rd

Day: Thursday
Date: 3/3/2022City: El Sobrante
Project #: CA22_080069_002

DAILY TOTALS					NB	SB					EB	WB	Total
					11,201	10,348					0	0	21,549
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL		
00:00	11	15			26	12:00	178	176			354		
00:15	7	17			24	12:15	162	157			319		
00:30	7	8			15	12:30	136	161			297		
00:45	8	33	10	50	18	12:45	163	639	154	648	317	1287	
01:00	3	5			8	13:00	137	146			283		
01:15	7	6			13	13:15	171	180			351		
01:30	6	11			17	13:30	169	162			331		
01:45	3	19	6	28	9	13:45	182	659	144	632	326	1291	
02:00	6	7			13	14:00	163	194			357		
02:15	8	7			15	14:15	201	187			388		
02:30	3	1			4	14:30	258	183			441		
02:45	4	21	4	19	8	14:45	242	864	257	821	499	1685	
03:00	8	1			9	15:00	249	267			516		
03:15	15	8			23	15:15	263	181			444		
03:30	8	7			15	15:30	228	206			434		
03:45	8	39	4	20	12	15:45	280	1020	194	848	474	1868	
04:00	5	3			8	16:00	263	192			455		
04:15	19	8			27	16:15	289	177			466		
04:30	17	10			27	16:30	289	162			451		
04:45	21	62	11	32	32	16:45	291	1132	165	696	456	1828	
05:00	21	16			37	17:00	283	189			472		
05:15	27	17			44	17:15	291	207			498		
05:30	26	28			54	17:30	272	182			454		
05:45	45	119	33	94	78	17:45	285	1131	198	776	483	1907	
06:00	45	49			94	18:00	302	164			466		
06:15	55	46			101	18:15	225	192			417		
06:30	51	84			135	18:30	225	178			403		
06:45	63	214	132	311	195	18:45	168	920	143	677	311	1597	
07:00	88	183			271	19:00	153	154			307		
07:15	92	165			257	19:15	119	120			239		
07:30	125	140			265	19:30	107	104			211		
07:45	158	463	193	681	351	19:45	105	484	107	485	212	969	
08:00	209	270			479	20:00	120	106			226		
08:15	269	284			553	20:15	93	121			214		
08:30	271	243			514	20:30	77	93			170		
08:45	186	935	190	987	376	20:45	71	361	79	399	150	760	
09:00	147	150			297	21:00	61	86			147		
09:15	122	128			250	21:15	44	66			110		
09:30	135	127			262	21:30	36	57			93		
09:45	142	546	148	553	290	21:45	41	182	56	265	97	447	
10:00	135	147			282	22:00	47	43			90		
10:15	137	126			263	22:15	28	39			67		
10:30	135	118			253	22:30	28	28			56		
10:45	150	557	138	529	288	22:45	24	127	22	132	46	259	
11:00	135	148			283	23:00	20	28			48		
11:15	149	125			274	23:15	10	25			35		
11:30	165	130			295	23:30	15	22			37		
11:45	157	606	168	571	325	23:45	23	68	19	94	42	162	
TOTALS	3614	3875			7489	TOTALS	7587	6473			14060		
SPLIT %	48.3%	51.7%			34.8%	SPLIT %	54.0%	46.0%			65.2%		

DAILY TOTALS					NB	SB					EB	WB	Total
					11,201	10,348					0	0	21,549
AM Peak Hour	08:00	07:45			08:00	PM Peak Hour	16:30	14:45			17:00		
AM Pk Volume	935	990			1922	PM Pk Volume	1154	911			1907		
Pk Hr Factor	0.863	0.871			0.869	Pk Hr Factor	0.991	0.853			0.957		
7 - 9 Volume	1398	1668	0	0	3066	4 - 6 Volume	2263	1472	0	0	3735		
7 - 9 Peak Hour	08:00	07:45			08:00	4 - 6 Peak Hour	16:30	17:00			17:00		
7 - 9 Pk Volume	935	990	0	0	1922	4 - 6 Pk Volume	1154	776	0	0	1907		
Pk Hr Factor	0.863	0.871	0.000	0.000	0.869	Pk Hr Factor	0.991	0.937	0.000	0.000	0.957		

VOLUME

Amend Rd Bet. Valley View Rd & Heavenly Ridge Rd

Day: Thursday
Date: 3/3/2022City: Richmond
Project #: CA22_080069_003

DAILY TOTALS					NB	SB						EB	WB						Total
					0	0						1,478	1,511						2,989
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL							TOTAL
00:00			1	1	2		12:00			24	25	49							
00:15			3	1	4		12:15			34	22	56							
00:30			2	0	2		12:30			28	32	60							
00:45			0	6	1	3	12:45			25	111	24	103	49	214				
01:00			2	1	3		13:00			26	27	53							
01:15			0	1	1		13:15			32	26	58							
01:30			2	1	3		13:30			33	33	66							
01:45			0	4	0	3	13:45			20	111	32	118	52	229				
02:00			0	0	0		14:00			32	29	61							
02:15			1	1	2		14:15			29	22	51							
02:30			0	0	0		14:30			27	27	54							
02:45			1	2	1	2	14:45			28	116	34	112	62	228				
03:00			0	1	1		15:00			36	23	59							
03:15			0	2	2		15:15			21	31	52							
03:30			1	2	3		15:30			36	30	66							
03:45			1	2	3	8	15:45			30	123	13	97	43	220				
04:00			1	2	3		16:00			43	24	67							
04:15			0	2	2		16:15			22	26	48							
04:30			1	5	6		16:30			32	23	55							
04:45			1	3	4	13	16:45			27	124	27	100	54	224				
05:00			2	2	4		17:00			31	21	52							
05:15			4	7	11		17:15			41	20	61							
05:30			4	10	14		17:30			29	22	51							
05:45			7	17	6	25	17:45			38	139	28	91	66	230				
06:00			1	6	7		18:00			27	19	46							
06:15			6	13	19		18:15			22	17	39							
06:30			8	14	22		18:30			26	13	39							
06:45			6	21	18	51	18:45			25	100	24	73	49	173				
07:00			7	14	21		19:00			21	15	36							
07:15			14	23	37		19:15			32	9	41							
07:30			10	44	54		19:30			20	20	40							
07:45			20	51	38	119	19:45			21	94	15	59	36	153				
08:00			18	37	55		20:00			13	9	22							
08:15			24	38	62		20:15			17	11	28							
08:30			24	35	59		20:30			12	12	24							
08:45			21	87	20	130	20:45			15	57	7	39	22	96				
09:00			15	24	39		21:00			13	8	21							
09:15			14	25	39		21:15			10	8	18							
09:30			14	35	49		21:30			13	6	19							
09:45			13	56	30	114	21:45			8	44	7	29	15	73				
10:00			19	28	47		22:00			7	7	14							
10:15			17	15	32		22:15			5	3	8							
10:30			36	27	63		22:30			9	4	13							
10:45			12	84	27	97	22:45			3	24	3	17	6	41				
11:00			33	23	56		23:00			4	2	6							
11:15			12	28	40		23:15			7	0	7							
11:30			15	25	40		23:30			2	3	5							
11:45			25	85	27	103	23:45			4	17	0	5	4	22				
TOTALS			418	668	1086		TOTALS			1060	843	1903							
SPLIT %			38.5%	61.5%	36.3%		SPLIT %			55.7%	44.3%	63.7%							

DAILY TOTALS					NB	SB						EB	WB						Total
					0	0						1,478	1,511						2,989
AM Peak Hour			11:45	07:30	07:45		PM Peak Hour			17:00	13:15	14:45							
AM Pk Volume			111	157	234		PM Pk Volume			139	120	239							
Pk Hr Factor			0.816	0.892	0.944		Pk Hr Factor			0.848	0.909	0.905							
7 - 9 Volume	0	0	138	249	387		4 - 6 Volume	0	0	263	191	454							
7 - 9 Peak Hour			08:00	07:30	07:45		4 - 6 Peak Hour			17:00	16:00	17:00							
7 - 9 Pk Volume	0	0	87	157	234		4 - 6 Pk Volume	0	0	139	100	230							
Pk Hr Factor	0.000	0.000	0.906	0.892	0.944		Pk Hr Factor	0.000	0.000	0.848	0.926	0.871							

VOLUME

Valley View Rd Bet. Keith Dr & May Rd

Day: Thursday
Date: 3/3/2022City: Richmond
Project #: CA22_080069_004

DAILY TOTALS					NB	SB					Total
					6,709	6,639					13,348
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	2	5			7	12:00	85	86			171
00:15	2	10			12	12:15	81	89			170
00:30	2	5			7	12:30	70	81			151
00:45	5	11	4	24	9	12:45	89	325	83	339	172
01:00	2	6			8	13:00	76	83			159
01:15	3	2			5	13:15	99	108			207
01:30	5	5			10	13:30	98	106			204
01:45	5	15	5	18	10	13:45	99	372	81	378	180
02:00	2	4			6	14:00	100	112			212
02:15	6	2			8	14:15	140	120			260
02:30	2	0			2	14:30	127	137			264
02:45	1	11	3	9	4	14:45	148	515	154	523	302
03:00	2	0			2	15:00	131	161			292
03:15	9	4			13	15:15	176	130			306
03:30	3	6			9	15:30	163	193			356
03:45	4	18	6	16	10	15:45	246	716	139	623	385
04:00	2	3			5	16:00	168	128			296
04:15	12	1			13	16:15	180	88			268
04:30	5	5			10	16:30	153	104			257
04:45	8	27	6	15	14	16:45	148	649	108	428	256
05:00	14	8			22	17:00	153	111			264
05:15	12	9			21	17:15	161	131			292
05:30	15	22			37	17:30	179	118			297
05:45	29	70	22	61	51	17:45	176	669	129	489	305
06:00	20	33			53	18:00	159	111			270
06:15	28	34			62	18:15	134	105			239
06:30	28	61			89	18:30	132	116			248
06:45	35	111	106	234	141	18:45	95	520	90	422	185
07:00	51	155			206	19:00	94	88			182
07:15	60	153			213	19:15	51	76			127
07:30	89	98			187	19:30	63	46			109
07:45	99	299	117	523	216	19:45	66	274	56	266	122
08:00	170	242			412	20:00	56	56			112
08:15	235	197			432	20:15	59	56			115
08:30	206	231			437	20:30	45	65			110
08:45	117	728	145	815	262	20:45	32	192	40	217	72
09:00	94	105			199	21:00	41	40			81
09:15	80	73			153	21:15	24	41			65
09:30	72	71			143	21:30	15	26			41
09:45	77	323	83	332	160	21:45	21	101	30	137	51
10:00	74	93			167	22:00	24	21			45
10:15	78	65			143	22:15	14	29			43
10:30	89	78			167	22:30	12	15			27
10:45	61	302	69	305	130	22:45	13	63	12	77	25
11:00	83	82			165	23:00	11	15			26
11:15	93	79			172	23:15	4	15			19
11:30	102	63			165	23:30	7	11			18
11:45	86	364	112	336	198	23:45	12	34	11	52	23
TOTALS	2279	2688			4967	TOTALS	4430	3951			8381
SPLIT %	45.9%	54.1%			37.2%	SPLIT %	52.9%	47.1%			62.8%

DAILY TOTALS					NB	SB					Total
					6,709	6,639					13,348
AM Peak Hour	08:00	08:00			08:00	PM Peak Hour	15:30	14:45			15:15
AM Pk Volume	728	815			1543	PM Pk Volume	757	638			1343
Pk Hr Factor	0.774	0.842			0.883	Pk Hr Factor	0.769	0.826			0.872
7 - 9 Volume	1027	1338	0	0	2365	4 - 6 Volume	1318	917	0	0	2235
7 - 9 Peak Hour	08:00	08:00			08:00	4 - 6 Peak Hour	17:00	17:00			17:00
7 - 9 Pk Volume	728	815	0	0	1543	4 - 6 Pk Volume	669	489	0	0	1158
Pk Hr Factor	0.774	0.842	0.000	0.000	0.883	Pk Hr Factor	0.934	0.933	0.000	0.000	0.949

VOLUME

Valley View Rd Bet. D Avila Way & Spanish Trails Rd

Day: Thursday
Date: 3/3/2022City: El Sobrante
Project #: CA22_080069_005

DAILY TOTALS					NB	SB					Total
					4,109	4,376					8,485
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	4	9			13	12:00	39	59			98
00:15	5	4			9	12:15	49	58			107
00:30	1	4			5	12:30	33	59			92
00:45	2	12	3	20	5	12:45	65	186	49	225	114
01:00	2	3			5	13:00	48	53			101
01:15	2	3			5	13:15	66	50			116
01:30	4	2			6	13:30	55	57			112
01:45	3	11	3	11	6	13:45	55	224	52	212	107
02:00	2	3			5	14:00	57	62			119
02:15	5	2			7	14:15	63	55			118
02:30	1	0			1	14:30	56	57			113
02:45	1	9	0	5	1	14:45	70	246	82	256	152
03:00	1	1			2	15:00	90	68			158
03:15	3	4			7	15:15	120	81			201
03:30	1	6			7	15:30	107	114			221
03:45	1	6	4	15	5	15:45	102	419	144	407	246
04:00	1	4			5	16:00	116	80			196
04:15	1	2			3	16:15	140	57			197
04:30	0	8			8	16:30	108	60			168
04:45	1	3	9	23	10	16:45	120	484	61	258	181
05:00	5	11			16	17:00	137	68			205
05:15	3	18			21	17:15	123	66			189
05:30	6	31			37	17:30	141	67			208
05:45	12	26	30	90	42	17:45	136	537	61	262	197
06:00	10	41			51	18:00	131	52			183
06:15	17	39			56	18:15	97	62			159
06:30	17	75			92	18:30	100	58			158
06:45	12	56	108	263	120	18:45	74	402	53	225	127
07:00	19	165			184	19:00	63	43			106
07:15	28	163			191	19:15	34	31			65
07:30	29	104			133	19:30	50	28			78
07:45	48	124	73	505	121	19:45	32	179	24	126	56
08:00	93	99			192	20:00	24	34			58
08:15	123	140			263	20:15	38	31			69
08:30	80	158			238	20:30	30	24			54
08:45	68	364	126	523	194	20:45	23	115	29	118	52
09:00	56	87			143	21:00	31	27			58
09:15	42	78			120	21:15	18	17			35
09:30	41	69			110	21:30	17	12			29
09:45	50	189	59	293	109	21:45	14	80	16	72	30
10:00	40	68			108	22:00	20	12			32
10:15	41	50			91	22:15	13	10			23
10:30	43	47			90	22:30	9	8			17
10:45	37	161	40	205	77	22:45	14	56	8	38	22
11:00	50	48			98	23:00	10	5			15
11:15	44	48			92	23:15	9	6			15
11:30	42	47			89	23:30	5	5			10
11:45	51	187	59	202	110	23:45	9	33	6	22	15
TOTALS	1148	2155			3303	TOTALS	2961	2221			5182
SPLIT %	34.8%	65.2%			38.9%	SPLIT %	57.1%	42.9%			61.1%

DAILY TOTALS					NB	SB					Total
					4,109	4,376					8,485
AM Peak Hour	08:00	06:45		08:00	PM Peak Hour	17:00	15:15			15:15	
AM Pk Volume	364	540		887	PM Pk Volume	537	419			864	
Pk Hr Factor	0.740	0.818		0.843	Pk Hr Factor	0.952	0.727			0.878	
7 - 9 Volume	488	1028	0	1516	4 - 6 Volume	1021	520	0	0	1541	
7 - 9 Peak Hour	08:00	08:00		08:00	4 - 6 Peak Hour	17:00	16:45			17:00	
7 - 9 Pk Volume	364	523	0	887	4 - 6 Pk Volume	537	262	0	0	799	
Pk Hr Factor	0.740	0.828	0.000	0.843	Pk Hr Factor	0.952	0.963	0.000	0.000	0.960	

VOLUME

Rd 20 Bet. Abella Cir W & Abella Cir E

Day: Thursday
Date: 3/3/2022City: San Pablo
Project #: CA22_080069_006

DAILY TOTALS					NB	SB	EB					WB	Total	
					0	0						2,236	2,656	4,892
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL		
00:00			4	6	10		12:00			30	35	65		
00:15			4	10	14		12:15			16	33	49		
00:30			5	7	12		12:30			29	22	51		
00:45			2	15	3	26	12:45			24	99	37	127	
01:00			4	2	6		13:00			28	39	67		
01:15			4	0	4		13:15			25	27	52		
01:30			1	5	6		13:30			31	28	59		
01:45			4	13	0	7	13:45			43	127	38	132	
02:00			2	2	4		14:00			32	38	70		
02:15			0	1	1		14:15			42	38	80		
02:30			3	1	4		14:30			49	43	92		
02:45			2	7	2	6	14:45			60	183	55	174	
03:00			1	0	1		15:00			75	90	165		
03:15			1	1	2		15:15			42	62	104		
03:30			1	1	2		15:30			35	34	69		
03:45			9	12	4	6	15:45			35	187	54	240	
04:00			4	1	5		16:00			32	46	78		
04:15			1	6	7		16:15			30	42	72		
04:30			3	6	9		16:30			38	51	89		
04:45			5	13	8	21	16:45			29	129	42	181	
05:00			10	4	14		17:00			30	56	86		
05:15			9	10	19		17:15			27	33	60		
05:30			15	6	21		17:30			31	50	81		
05:45			18	52	11	31	17:45			42	130	59	198	
06:00			17	7	24		18:00			37	63	100		
06:15			22	15	37		18:15			31	48	79		
06:30			25	17	42		18:30			36	64	100		
06:45			21	85	18	57	18:45			32	136	52	227	
07:00			24	22	46		19:00			30	46	76		
07:15			29	26	55		19:15			30	46	76		
07:30			26	36	62		19:30			37	24	61		
07:45			36	115	40	124	19:45			21	118	32	148	
08:00			44	53	97		20:00			23	23	46		
08:15			43	51	94		20:15			14	25	39		
08:30			57	96	153		20:30			36	31	67		
08:45			78	222	102	302	20:45			35	108	22	101	
09:00			36	57	93		21:00			15	19	34		
09:15			29	31	60		21:15			22	23	45		
09:30			31	29	60		21:30			13	20	33		
09:45			39	135	41	158	21:45			13	63	16	78	
10:00			29	16	45		22:00			20	19	39		
10:15			26	25	51		22:15			8	13	21		
10:30			34	26	60		22:30			13	14	27		
10:45			22	111	31	98	22:45			8	49	8	54	
11:00			26	23	49		23:00			11	18	29		
11:15			29	29	58		23:15			8	9	17		
11:30			26	30	56		23:30			5	10	15		
11:45			18	99	35	117	23:45			4	28	6	43	
TOTALS				879	953	1832	TOTALS				1357	1703	3060	
SPLIT %				48.0%	52.0%	37.4%	SPLIT %				44.3%	55.7%	62.6%	

DAILY TOTALS					NB	SB						EB	WB						Total
					0	0						2,236	2,656						4,892
AM Peak Hour			08:00	08:15	08:00		PM Peak Hour			14:15	14:30	14:30							
AM Pk Volume			222	306	524		PM Pk Volume			226	250	476							
Pk Hr Factor			0.712	0.750	0.728		Pk Hr Factor			0.753	0.694	0.721							
7 - 9 Volume	0	0	337	426	763		4 - 6 Volume	0	0	259	379	638							
7 - 9 Peak Hour			08:00	08:00	08:00		4 - 6 Peak Hour			17:00	17:00	17:00							
7 - 9 Pk Volume	0	0	222	302	524		4 - 6 Pk Volume	0	0	130	198	328							
Pk Hr Factor	0.000	0.000	0.712	0.740	0.728		Pk Hr Factor	0.000	0.000	0.774	0.839	0.812							

VOLUME

Rollingwood Dr Bet. Bancroft Ln & Fordham St

Day: Thursday
Date: 3/3/2022City: San Pablo
Project #: CA22_080069_007

DAILY TOTALS					NB	SB	EB					WB	Total
					0	0						2,459	1,842
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL	
00:00			5	4	9		12:00			31	23	54	
00:15			8	6	14		12:15			35	19	54	
00:30			9	1	10		12:30			34	22	56	
00:45			3	25	1	12	12:45			28	128	24	88
01:00			3		4	7	13:00			40		20	60
01:15			4		0	4	13:15			27		26	53
01:30			1		3	4	13:30			34		28	62
01:45			0	8	0	7	13:45			34	135	27	101
02:00			0		0	0	14:00			34		14	48
02:15			2		0	2	14:15			36		26	62
02:30			1		1	2	14:30			58		32	90
02:45			4	7	0	1	14:45			54	182	48	120
03:00			2		2	4	15:00			60		33	93
03:15			0		0	0	15:15			54		32	86
03:30			3		2	5	15:30			48		23	71
03:45			1	6	2	6	15:45			67	229	25	113
04:00			1		1	2	16:00			71		36	107
04:15			2		3	5	16:15			65		38	103
04:30			2		6	8	16:30			72		24	96
04:45			5	10	2	12	16:45			63	271	31	129
05:00			5		6	11	17:00			76		35	111
05:15			4		18	22	17:15			82		28	110
05:30			7		15	22	17:30			66		27	93
05:45			9	25	15	54	17:45			56	280	35	125
06:00			6		16	22	18:00			74		22	96
06:15			7		16	23	18:15			49		36	85
06:30			13		16	29	18:30			54		25	79
06:45			20	46	27	75	18:45			45	222	28	111
07:00			14		24	38	19:00			37		27	64
07:15			20		59	79	19:15			25		20	45
07:30			18		58	76	19:30			30		15	45
07:45			49	101	53	194	19:45			25	117	18	80
08:00			64		54	118	20:00			29		17	46
08:15			40		63	103	20:15			30		23	53
08:30			26		63	89	20:30			23		16	39
08:45			33	163	36	216	20:45			15	97	17	73
09:00			22		19	41	21:00			18		13	31
09:15			21		23	44	21:15			15		11	26
09:30			27		23	50	21:30			7		10	17
09:45			22	92	16	81	21:45			18	58	5	39
10:00			21		23	44	22:00			10		12	22
10:15			22		26	48	22:15			14		7	21
10:30			14		14	28	22:30			13		8	21
10:45			17	74	20	83	22:45			10	47	6	33
11:00			23		16	39	23:00			9		7	16
11:15			28		16	44	23:15			7		4	11
11:30			24		19	43	23:30			12		4	16
11:45			30	105	22	73	23:45			3	31	1	16
TOTALS			662		814	1476	TOTALS			1797		1028	2825
SPLIT %			44.9%		55.1%	34.3%	SPLIT %			63.6%		36.4%	65.7%

DAILY TOTALS					NB	SB						EB	WB						Total
					0	0						2,459	1,842						4,301
AM Peak Hour			07:45	07:45	07:45		PM Peak Hour			16:30	14:30	16:30							
AM Pk Volume			179	233	412		PM Pk Volume			293	145	411							
Pk Hr Factor			0.699	0.925	0.873		Pk Hr Factor			0.893	0.755	0.926							
7 - 9 Volume	0	0	264	410	674		4 - 6 Volume	0	0	551	254	805							
7 - 9 Peak Hour			07:45	07:45	07:45		4 - 6 Peak Hour			16:30	16:00	16:30							
7 - 9 Pk Volume	0	0	179	233	412		4 - 6 Pk Volume	0	0	293	129	411							
Pk Hr Factor	0.000	0.000	0.699	0.925	0.873		Pk Hr Factor	0.000	0.000	0.893	0.849	0.926							

VOLUME

Glenlock St Bet. Baywood Ln & Chevy Way

Day: Thursday
Date: 3/3/2022City: San Pablo
Project #: CA22_080069_008

DAILY TOTALS					NB	SB	EB					WB	Total
					0	0	1,187					1,146	2,333
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL	
00:00			2	8	10		12:00			14	18	32	
00:15			2	4	6		12:15			12	16	28	
00:30			4	1	5		12:30			16	20	36	
00:45			2	10	2	15	12:45			22	64	23	77
01:00			0	3	3		13:00			18	18	36	
01:15			1	2	3		13:15			13	13	26	
01:30			0	0	0		13:30			18	18	36	
01:45			1	2	4	9	13:45			21	70	21	70
02:00			0	3	3		14:00			21	17	38	
02:15			1	1	2		14:15			16	13	29	
02:30			1	0	1		14:30			17	13	30	
02:45			6	8	0	4	14:45			20	74	23	66
03:00			0	0	0		15:00			15	19	34	
03:15			0	1	1		15:15			27	21	48	
03:30			7	4	11		15:30			22	10	32	
03:45			4	11	0	5	15:45			9	73	28	78
04:00			6	2	8		16:00			20	24	44	
04:15			4	1	5		16:15			20	19	39	
04:30			16	4	20		16:30			17	23	40	
04:45			8	34	3	10	16:45			17	74	18	84
05:00			17	4	21		17:00			21	27	48	
05:15			14	6	20		17:15			16	14	30	
05:30			20	8	28		17:30			18	20	38	
05:45			17	68	6	24	17:45			18	73	17	78
06:00			13	5	18		18:00			19	25	44	
06:15			19	7	26		18:15			13	23	36	
06:30			17	3	20		18:30			12	21	33	
06:45			24	73	11	26	18:45			16	60	23	92
07:00			15	5	20		19:00			14	19	33	
07:15			16	14	30		19:15			11	21	32	
07:30			21	12	33		19:30			16	8	24	
07:45			31	83	16	47	19:45			9	50	16	64
08:00			30	16	46		20:00			10	21	31	
08:15			22	14	36		20:15			15	22	37	
08:30			16	15	31		20:30			5	14	19	
08:45			20	88	18	63	20:45			6	36	13	70
09:00			25	11	36		21:00			7	8	15	
09:15			17	18	35		21:15			10	18	28	
09:30			10	16	26		21:30			10	12	22	
09:45			16	68	10	55	21:45			5	32	7	45
10:00			11	6	17		22:00			4	9	13	
10:15			21	13	34		22:15			4	11	15	
10:30			16	11	27		22:30			3	4	7	
10:45			16	64	14	44	22:45			2	13	11	35
11:00			9	14	23		23:00			0	8	8	
11:15			15	13	28		23:15			9	7	16	
11:30			10	13	23		23:30			2	5	7	
11:45			13	47	21	61	23:45			1	12	4	24
TOTALS			556	363	919		TOTALS			631	783	1414	
SPLIT %			60.5%	39.5%	39.4%		SPLIT %			44.6%	55.4%	60.6%	

DAILY TOTALS					NB	SB						EB	WB						Total
					0	0						1,187	1,146						2,333
AM Peak Hour			07:30	11:45	07:30		PM Peak Hour			14:45	15:45	16:15							
AM Pk Volume			104	75	162		PM Pk Volume			84	94	162							
Pk Hr Factor			0.839	0.893	0.862		Pk Hr Factor			0.778	0.839	0.844							
7 - 9 Volume	0	0	171	110	281		4 - 6 Volume	0	0	147	162	309							
7 - 9 Peak Hour			07:30	08:00	07:30		4 - 6 Peak Hour			16:15	16:15	16:15							
7 - 9 Pk Volume	0	0	104	63	162		4 - 6 Pk Volume	0	0	75	87	162							
Pk Hr Factor	0.000	0.000	0.839	0.875	0.862		Pk Hr Factor	0.000	0.000	0.893	0.806	0.844							

VOLUME

El Portal Dr Bet. Glenlock St & EB I-80 Ramps

Day: Thursday
Date: 3/3/2022City: San Pablo
Project #: CA22_080069_009

DAILY TOTALS					NB	SB					EB	WB	Total
					13,494	13,527					0	0	27,021
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL		
00:00	16	58			74	12:00	158	209			367		
00:15	20	32			52	12:15	182	195			377		
00:30	23	34			57	12:30	211	214			425		
00:45	19	78	30	154	49	12:45	211	762	207	825	418	1587	
01:00	19	33			52	13:00	193	205			398		
01:15	20	17			37	13:15	194	203			397		
01:30	18	26			44	13:30	235	207			442		
01:45	9	66	18	94	27	13:45	214	836	210	825	424	1661	
02:00	17	20			37	14:00	201	228			429		
02:15	11	9			20	14:15	200	186			386		
02:30	16	11			27	14:30	229	199			428		
02:45	19	63	14	54	33	14:45	205	835	250	863	455	1698	
03:00	18	11			29	15:00	240	259			499		
03:15	22	11			33	15:15	225	240			465		
03:30	30	11			41	15:30	245	230			475		
03:45	30	100	10	43	40	15:45	213	923	276	1005	489	1928	
04:00	38	18			56	16:00	198	278			476		
04:15	52	19			71	16:15	235	234			469		
04:30	76	24			100	16:30	222	222			444		
04:45	79	245	42	103	121	16:45	198	853	246	980	444	1833	
05:00	115	33			148	17:00	210	241			451		
05:15	141	37			178	17:15	233	249			482		
05:30	140	49			189	17:30	214	238			452		
05:45	140	536	48	167	188	17:45	196	853	243	971	439	1824	
06:00	156	44			200	18:00	203	241			444		
06:15	175	81			256	18:15	178	257			435		
06:30	179	81			260	18:30	173	237			410		
06:45	174	684	104	310	278	18:45	171	725	256	991	427	1716	
07:00	215	104			319	19:00	177	279			456		
07:15	223	135			358	19:15	179	211			390		
07:30	225	155			380	19:30	159	181			340		
07:45	228	891	224	618	452	19:45	142	657	177	848	319	1505	
08:00	266	228			494	20:00	116	165			281		
08:15	246	252			498	20:15	108	170			278		
08:30	239	247			486	20:30	133	142			275		
08:45	211	962	252	979	463	20:45	112	469	150	627	262	1096	
09:00	193	169			362	21:00	158	109			267		
09:15	171	196			367	21:15	99	143			242		
09:30	188	169			357	21:30	83	117			200		
09:45	185	737	166	700	351	21:45	72	412	100	469	172	881	
10:00	172	138			310	22:00	67	102			169		
10:15	198	181			379	22:15	76	80			156		
10:30	171	166			337	22:30	57	83			140		
10:45	171	712	176	661	347	22:45	52	252	70	335	122	587	
11:00	149	147			296	23:00	41	70			111		
11:15	184	168			352	23:15	29	61			90		
11:30	172	171			343	23:30	38	45			83		
11:45	200	705	194	680	394	23:45	30	138	49	225	79	363	
TOTALS	5779	4563			10342	TOTALS	7715	8964			16679		
SPLIT %	55.9%	44.1%			38.3%	SPLIT %	46.3%	53.7%			61.7%		

DAILY TOTALS					NB	SB					EB	WB	Total
					13,494	13,527					0	0	27,021
AM Peak Hour	07:45	08:00			08:00	PM Peak Hour	15:00	18:15			15:00		
AM Pk Volume	979	979			1941	PM Pk Volume	923	1029			1928		
Pk Hr Factor	0.920	0.971			0.974	Pk Hr Factor	0.942	0.922			0.966		
7 - 9 Volume	1853	1597	0	0	3450	4 - 6 Volume	1706	1951	0	0	3657		
7 - 9 Peak Hour	07:45	08:00			08:00	4 - 6 Peak Hour	16:15	16:00			16:00		
7 - 9 Pk Volume	979	979	0	0	1941	4 - 6 Pk Volume	865	980	0	0	1833		
Pk Hr Factor	0.920	0.971	0.000	0.000	0.974	Pk Hr Factor	0.920	0.881	0.000	0.000	0.963		

VOLUME

El Portal Dr Bet. EB I-80 Ramps & Via Verdi

Day: Thursday
Date: 3/3/2022City: El Sobrante
Project #: CA22_080069_010

DAILY TOTALS						NB	SB	EB						WB	Total
						0	0							9,192	9,733
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL			
00:00			21	19	40		12:00			118	129	247			
00:15			20	13	33		12:15			136	122	258			
00:30			19	10	29		12:30			133	151	284			
00:45			20	80	15	57	12:45			144	531	160	562	304	1093
01:00			7	11	18		13:00			130	164	294			
01:15			15	7	22		13:15			137	142	279			
01:30			8	5	13		13:30			164	169	333			
01:45			11	41	9	32	13:45			145	576	172	647	317	1223
02:00			11	7	18		14:00			140	179	319			
02:15			7	12	19		14:15			142	158	300			
02:30			8	6	14		14:30			135	160	295			
02:45			7	33	10	35	14:45			151	568	193	690	344	1258
03:00			11	6	17		15:00			167	168	335			
03:15			10	18	28		15:15			175	181	356			
03:30			10	16	26		15:30			161	177	338			
03:45			7	38	17	57	15:45			169	672	203	729	372	1401
04:00			11	22	33		16:00			171	177	348			
04:15			11	18	29		16:15			150	157	307			
04:30			16	32	48		16:30			176	160	336			
04:45			14	52	51	123	16:45			133	630	168	662	301	1292
05:00			16	47	63		17:00			145	174	319			
05:15			21	62	83		17:15			169	160	329			
05:30			23	83	106		17:30			163	167	330			
05:45			27	87	80	272	17:45			162	639	154	655	316	1294
06:00			45	65	110		18:00			148	171	319			
06:15			57	94	151		18:15			146	156	302			
06:30			65	87	152		18:30			118	162	280			
06:45			96	263	92	338	18:45			151	563	132	621	283	1184
07:00			125	96	221		19:00			138	127	265			
07:15			111	82	193		19:15			131	119	250			
07:30			126	147	273		19:30			124	111	235			
07:45			137	499	154	479	19:45			121	514	91	448	212	962
08:00			201	165	366		20:00			96	110	206			
08:15			211	148	359		20:15			123	89	212			
08:30			217	163	380		20:30			109	81	190			
08:45			191	820	157	633	20:45			94	422	102	382	196	804
09:00			160	154	314		21:00			94	48	142			
09:15			99	162	261		21:15			77	65	142			
09:30			127	131	258		21:30			72	67	139			
09:45			130	516	128	575	21:45			63	306	46	226	109	532
10:00			126	120	246		22:00			57	44	101			
10:15			119	144	263		22:15			55	48	103			
10:30			118	151	269		22:30			51	48	99			
10:45			138	501	160	575	22:45			32	195	30	170	62	365
11:00			116	148	264		23:00			40	47	87			
11:15			139	146	285		23:15			31	26	57			
11:30			145	176	321		23:30			27	21	48			
11:45			126	526	182	652	23:45			22	120	19	113	41	233
TOTALS			3456	3828	7284		TOTALS			5736	5905	11641			
SPLIT %			47.4%	52.6%	38.5%		SPLIT %			49.3%	50.7%	61.5%			

DAILY TOTALS					NB	SB					EB	WB	Total
					0	0					9,192	9,733	18,925
AM Peak Hour			08:00	11:00	08:00		PM Peak Hour			15:15	15:15	15:15	
AM Pk Volume			820	652	1453		PM Pk Volume			676	738	1414	
Pk Hr Factor			0.945	0.896	0.956		Pk Hr Factor			0.966	0.909	0.950	
7 - 9 Volume	0	0	1319	1112	2431		4 - 6 Volume	0	0	1269	1317	2586	
7 - 9 Peak Hour			08:00	08:00	08:00		4 - 6 Peak Hour			17:00	16:45	17:00	
7 - 9 Pk Volume	0	0	820	633	1453		4 - 6 Pk Volume	0	0	639	669	1294	
Pk Hr Factor	0.000	0.000	0.945	0.959	0.956		Pk Hr Factor	0.000	0.000	0.945	0.961	0.980	

VOLUME

San Pablo Dam Rd Bet. Morrow Dr & Miffin Ave

Day: Thursday
Date: 3/3/2022City: San Pablo
Project #: CA22_080069_011

DAILY TOTALS					NB	SB						EB	WB	Total
					10,200	9,148						0	0	19,348
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL			
00:00	20	11			31	12:00	145	107			252			
00:15	10	8			18	12:15	153	139			292			
00:30	14	6			20	12:30	127	126			253			
00:45	18	62	7	32	25	12:45	183	608	117	489	300			
01:00	13	7			20	13:00	146	156			302			
01:15	10	5			15	13:15	136	118			254			
01:30	9	3			12	13:30	159	122			281			
01:45	14	46	6	21	20	13:45	171	612	158	554	329			
02:00	7	11			18	14:00	202	156			358			
02:15	6	9			15	14:15	163	159			322			
02:30	11	8			19	14:30	171	171			342			
02:45	6	30	1	29	7	14:45	189	725	144	630	333			
03:00	6	3			9	15:00	168	156			324			
03:15	7	9			16	15:15	163	164			327			
03:30	3	9			12	15:30	172	136			308			
03:45	6	22	5	26	11	15:45	170	673	150	606	320			
04:00	6	6			12	16:00	207	147			354			
04:15	7	15			22	16:15	225	117			342			
04:30	9	23			32	16:30	216	170			386			
04:45	11	33	17	61	28	16:45	292	940	157	591	449			
05:00	15	33			48	17:00	324	182			506			
05:15	20	44			64	17:15	307	174			481			
05:30	21	51			72	17:30	302	159			461			
05:45	30	86	62	190	92	17:45	265	1198	147	662	412			
06:00	45	74			119	18:00	268	142			410			
06:15	45	71			116	18:15	234	132			366			
06:30	70	114			184	18:30	181	145			326			
06:45	74	234	116	375	190	18:45	179	862	127	546	306			
07:00	92	169			261	19:00	124	124			248			
07:15	101	215			316	19:15	133	91			224			
07:30	100	250			350	19:30	133	80			213			
07:45	123	416	262	896	385	19:45	97	487	95	390	192			
08:00	163	213			376	20:00	106	82			188			
08:15	168	218			386	20:15	99	75			174			
08:30	177	233			410	20:30	87	61			148			
08:45	185	693	192	856	377	20:45	93	385	63	281	156			
09:00	118	140			258	21:00	79	54			133			
09:15	118	126			244	21:15	71	57			128			
09:30	102	116			218	21:30	52	51			103			
09:45	155	493	122	504	277	21:45	44	246	36	198	80			
10:00	196	135			331	22:00	46	35			81			
10:15	125	136			261	22:15	40	30			70			
10:30	130	109			239	22:30	42	34			76			
10:45	133	584	104	484	237	22:45	36	164	23	122	59			
11:00	123	135			258	23:00	24	29			53			
11:15	127	146			273	23:15	20	14			34			
11:30	128	117			245	23:30	28	14			42			
11:45	129	507	139	537	268	23:45	22	94	11	68	33			
TOTALS	3206	4011			7217	TOTALS	6994	5137			12131			
SPLIT %	44.4%	55.6%			37.3%	SPLIT %	57.7%	42.3%			62.7%			

DAILY TOTALS					NB	SB						EB	WB	Total
					10,200	9,148						0	0	19,348
AM Peak Hour	08:00	07:30			07:45	PM Peak Hour	16:45	16:30			16:45			
AM Pk Volume	693	943			1557	PM Pk Volume	1225	683			1897			
Pk Hr Factor	0.936	0.900			0.949	Pk Hr Factor	0.945	0.938			0.937			
7 - 9 Volume	1109	1752	0	0	2861	4 - 6 Volume	2138	1253	0	0	3391			
7 - 9 Peak Hour	08:00	07:30			07:45	4 - 6 Peak Hour	16:45	16:30			16:45			
7 - 9 Pk Volume	693	943	0	0	1557	4 - 6 Pk Volume	1225	683	0	0	1897			
Pk Hr Factor	0.936	0.900	0.000	0.000	0.949	Pk Hr Factor	0.945	0.938	0.000	0.000	0.937			

VOLUME

San Pablo Dam Rd Bet. Clark Rd & May Rd

Day: Thursday
Date: 3/3/2022City: El Sobrante
Project #: CA22_080069_012

DAILY TOTALS						NB		SB								EB		WB		Total	
						0		0		9,635		9,516		19,151							
AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00					15		19		34		12:00					111		92		203	
00:15					13		13		26		12:15					108		105		213	
00:30					16		12		28		12:30					122		129		251	
00:45					27		71		14		12:45					119		460		245	
01:00					10		8		18		13:00					141		122		263	
01:15					11		4		15		13:15					134		125		259	
01:30					8		4		12		13:30					133		140		273	
01:45					12		41		8		13:45					133		541		260	
02:00					9		4		13		14:00					147		159		306	
02:15					5		7		12		14:15					161		170		331	
02:30					6		7		13		14:30					164		125		289	
02:45					5		25		5		14:45					173		645		385	
03:00					4		7		11		15:00					181		182		363	
03:15					8		10		18		15:15					195		156		351	
03:30					5		17		22		15:30					232		223		455	
03:45					8		25		10		15:45					198		806		479	
04:00					8		16		24		16:00					191		212		403	
04:15					13		14		27		16:15					153		193		346	
04:30					15		19		34		16:30					215		180		395	
04:45					14		50		31		16:45					198		757		411	
05:00					12		33		45		17:00					201		206		407	
05:15					21		62		83		17:15					204		189		393	
05:30					29		81		110		17:30					194		182		376	
05:45					33		95		60		17:45					191		790		374	
06:00					53		73		126		18:00					152		172		324	
06:15					91		67		158		18:15					164		148		312	
06:30					119		99		218		18:30					140		155		295	
06:45					102		365		104		18:45					116		572		243	
07:00					210		104		314		19:00					115		118		233	
07:15					177		145		322		19:15					106		87		193	
07:30					153		210		363		19:30					110		84		194	
07:45					159		699		193		19:45					83		414		159	
08:00					231		232		463		20:00					103		80		183	
08:15					284		282		566		20:15					88		56		144	
08:30					212		239		451		20:30					88		61		149	
08:45					215		942		169		20:45					78		357		134	
09:00					140		152		292		21:00					78		39		117	
09:15					126		136		262		21:15					71		49		120	
09:30					134		137		271		21:30					69		51		120	
09:45					119		519		108		21:45					71		289		115	
10:00					108		126		234		22:00					57		46		103	
10:15					119		106		225		22:15					48		28		76	
10:30					98		119		217		22:30					43		33		76	
10:45					105		430		129		22:45					29		177		55	
11:00					95		103		198		23:00					37		26		63	
11:15					112		123		235		23:15					34		15		49	
11:30					125		120		245		23:30					24		18		42	
11:45					110		442		125		23:45					28		123		51	
TOTALS					3704		3866		7570		TOTALS					5931		5650		11581	
SPLIT %					48.9%		51.1%		39.5%		SPLIT %					51.2%		48.8%		60.5%	

DAILY TOTALS					NB	SB						EB	WB						Total
					0	0						9,635	9,516						19,151
AM Peak Hour			08:00	07:45	08:00		PM Peak Hour			16:30	15:30	15:15							
AM Pk Volume			942	946	1864		PM Pk Volume			818	909	1688							
Pk Hr Factor			0.829	0.839	0.823		Pk Hr Factor			0.951	0.809	0.881							
7 - 9 Volume	0	0	1641	1574	3215		4 - 6 Volume	0	0	1547	1558	3105							
7 - 9 Peak Hour			08:00	07:45	08:00		4 - 6 Peak Hour			16:30	16:00	16:30							
7 - 9 Pk Volume	0	0	942	946	1864		4 - 6 Pk Volume	0	0	818	798	1606							
Pk Hr Factor	0.000	0.000	0.829	0.839	0.823		Pk Hr Factor	0.000	0.000	0.951	0.937	0.977							

VOLUME

D Avila Way Bet. San Pablo Dam Rd & La Honda Rd

Day: Tuesday
Date: 4/5/2022City: El Sobrante
Project #: CA22_080069_013

DAILY TOTALS					NB	SB					EB	WB	Total
					82	145					0	0	227
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL		
00:00	0	0			0	12:00	2	0			2		
00:15	0	1			1	12:15	1	3			4		
00:30	1	0			1	12:30	1	0			1		
00:45	0	1	0	1	0	12:45	3	7	7	10	10	17	
01:00	0	0			0	13:00	0	2			2		
01:15	0	0			0	13:15	0	3			3		
01:30	0	0			0	13:30	0	2			2		
01:45	0	0			0	13:45	0	0	7		0	7	
02:00	0	0			0	14:00	1	2			3		
02:15	1	0			1	14:15	2	4			6		
02:30	1	0			1	14:30	3	1			4		
02:45	0	2	0		0	14:45	2	8	1	8	3	16	
03:00	0	1			1	15:00	0	3			3		
03:15	0	0			0	15:15	1	5			6		
03:30	0	1			1	15:30	0	3			3		
03:45	0	0	2		0	15:45	0	1	3	14	3	15	
04:00	0	0			0	16:00	2	1			3		
04:15	0	0			0	16:15	5	5			10		
04:30	0	0			0	16:30	4	3			7		
04:45	0	1	1		1	16:45	1	12	3	12	4	24	
05:00	0	0			0	17:00	3	4			7		
05:15	0	0			0	17:15	2	4			6		
05:30	0	2			2	17:30	1	0			1		
05:45	0	0	2		0	17:45	2	8	2	10	4	18	
06:00	0	2			2	18:00	1	2			3		
06:15	0	2			2	18:15	2	1			3		
06:30	0	2			2	18:30	5	4			9		
06:45	1	1	2	8	3	18:45	4	12	1	8	5	20	
07:00	0	1			1	19:00	3	5			8		
07:15	0	1			1	19:15	0	4			4		
07:30	1	3			4	19:30	2	1			3		
07:45	0	1	4	9	4	19:45	0	5	2	12	2	17	
08:00	0	5			5	20:00	1	1			2		
08:15	0	3			3	20:15	2	2			4		
08:30	0	4			4	20:30	2	1			3		
08:45	1	1	1	13	2	20:45	2	7	0	4	2	11	
09:00	1	2			3	21:00	2	1			3		
09:15	0	0			0	21:15	2	0			2		
09:30	0	0			0	21:30	1	0			1		
09:45	0	1	0	2	0	21:45	0	5	1	2	1	7	
10:00	0	1			1	22:00	0	2			2		
10:15	0	0			0	22:15	0	3			3		
10:30	1	1			2	22:30	1	0			1		
10:45	0	1	3	5	3	22:45	0	1	1	6	1	7	
11:00	0	0			0	23:00	2	0			2		
11:15	2	4			6	23:15	0	1			1		
11:30	0	1			1	23:30	0	0			0		
11:45	4	6	3	8	7	23:45	0	2	0	1	0	3	
TOTALS	14	51			65	TOTALS	68	94			162		
SPLIT %	21.5%	78.5%			28.6%	SPLIT %	42.0%	58.0%			71.4%		

DAILY TOTALS					NB	SB					EB	WB	Total
					82	145					0	0	227
AM Peak Hour	11:15	07:45			07:30	PM Peak Hour	18:15	16:15			16:15		
AM Pk Volume	8	16			16	PM Pk Volume	14	15			28		
Pk Hr Factor	0.500	0.800			0.800	Pk Hr Factor	0.700	0.750			0.700		
7 - 9 Volume	2	22	0	0	24	4 - 6 Volume	20	22	0	0	42		
7 - 9 Peak Hour	07:00	07:45			07:30	4 - 6 Peak Hour	16:15	16:15			16:15		
7 - 9 Pk Volume	1	16	0	0	16	4 - 6 Pk Volume	13	15	0	0	28		
Pk Hr Factor	0.250	0.800	0.000	0.000	0.800	Pk Hr Factor	0.650	0.750	0.000	0.000	0.700		

Appendix C:

Level of Service Worksheets

HCM 6th Signalized Intersection Summary

1: Valley View Rd & Amend Rd

Existing AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	42	89	341	41	48	487
Future Volume (veh/h)	42	89	341	41	48	487
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	50	20	406	37	57	580
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	261	232	1073	97	179	1933
Arrive On Green	0.15	0.15	0.33	0.33	0.10	0.55
Sat Flow, veh/h	1767	1572	3355	296	1767	3618
Grp Volume(v), veh/h	50	20	218	225	57	580
Grp Sat Flow(s),veh/h/ln	1767	1572	1763	1795	1767	1763
Q Serve(g_s), s	0.7	0.3	2.8	2.8	0.9	2.6
Cycle Q Clear(g_c), s	0.7	0.3	2.8	2.8	0.9	2.6
Prop In Lane	1.00	1.00		0.16	1.00	
Lane Grp Cap(c), veh/h	261	232	580	590	179	1933
V/C Ratio(X)	0.19	0.09	0.38	0.38	0.32	0.30
Avail Cap(c_a), veh/h	895	797	2381	2425	836	4763
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.1	10.9	7.6	7.6	12.4	3.6
Incr Delay (d2), s/veh	0.1	0.1	0.6	0.6	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.7	0.8	0.3	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.2	10.9	8.2	8.2	12.7	3.7
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	70		443			637
Approach Delay, s/veh	11.1		8.2			4.5
Approach LOS	B		A			A
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.5	14.2		8.9		20.7
Change Period (Y+Rc), s	3.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	14.0	40.0		15.0		40.0
Max Q Clear Time (g_c+I1), s	2.9	4.8		2.7		4.6
Green Ext Time (p_c), s	0.0	4.2		0.1		6.3
Intersection Summary						
HCM 6th Ctrl Delay			6.4			
HCM 6th LOS			A			
Notes						
User approved pedestrian interval to be less than phase max green.						

HCM 6th Signalized Intersection Summary

2: Valley View Rd & San Pablo Dam Rd

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	492	12	6	279	100	37	20	7	307	11	215
Future Volume (veh/h)	176	492	12	6	279	100	37	20	7	307	11	215
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	193	541	13	7	307	0	41	22	7	337	12	96
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	248	1214	29	7	736		182	82	16	555	15	563
Arrive On Green	0.14	0.35	0.35	0.00	0.21	0.00	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1767	3519	84	1767	3526	1572	174	228	45	1136	40	1569
Grp Volume(v), veh/h	193	271	283	7	307	0	70	0	0	349	0	96
Grp Sat Flow(s), veh/h/ln	1767	1763	1840	1767	1763	1572	448	0	0	1177	0	1569
Q Serve(g_s), s	5.1	5.7	5.7	0.2	3.6	0.0	0.6	0.0	0.0	0.0	0.0	2.0
Cycle Q Clear(g_c), s	5.1	5.7	5.7	0.2	3.6	0.0	14.3	0.0	0.0	13.6	0.0	2.0
Prop In Lane	1.00		0.05	1.00		1.00	0.59		0.10	0.97		1.00
Lane Grp Cap(c), veh/h	248	608	635	7	736		280	0	0	570	0	563
V/C Ratio(X)	0.78	0.45	0.45	0.97	0.42		0.25	0.00	0.00	0.61	0.00	0.17
Avail Cap(c_a), veh/h	1106	2207	2304	1106	4413		665	0	0	939	0	982
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.9	12.1	12.2	23.9	16.4	0.0	11.9	0.0	0.0	14.2	0.0	10.5
Incr Delay (d2), s/veh	2.0	1.1	1.1	88.0	0.8	0.0	0.2	0.0	0.0	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.9	2.0	0.2	1.3	0.0	0.4	0.0	0.0	2.9	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.9	13.2	13.2	111.8	17.2	0.0	12.1	0.0	0.0	14.6	0.0	10.5
LnGrp LOS	C	B	B	F	B		B	A	A	B	A	B
Approach Vol, veh/h	747			314			70			445		
Approach Delay, s/veh	15.5			19.4			12.1			13.7		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.2	22.5		21.2	10.7	16.0		21.2				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	30.0	60.0		30.0	30.0	60.0		30.0				
Max Q Clear Time (g_c+I), s	12.2	7.7		16.3	7.1	5.6		15.6				
Green Ext Time (p_c), s	0.0	7.4		0.2	0.2	4.1		1.4				

Intersection Summary

HCM 6th Ctrl Delay 15.6

HCM 6th LOS B

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary 3: La Colina Rd/Appian Way & San Pablo Dam Rd

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	862	19	15	927	137	24	4	26	157	11	385
Future Volume (veh/h)	221	862	19	15	927	137	24	4	26	157	11	385
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	240	937	21	16	1008	144	26	4	3	171	12	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	301	2437	55	19	1903	272	41	6	5	206	14	333
Arrive On Green	0.09	0.69	0.69	0.01	0.61	0.61	0.03	0.03	0.03	0.12	0.12	0.12
Sat Flow, veh/h	3428	3524	79	1767	3096	442	1382	213	159	1656	116	1569
Grp Volume(v), veh/h	240	469	489	16	574	578	33	0	0	183	0	114
Grp Sat Flow(s), veh/h/ln	1714	1763	1840	1767	1763	1775	1754	0	0	1773	0	1569
Q Serve(g_s), s	8.4	13.6	13.6	1.1	22.7	22.7	2.3	0.0	0.0	12.3	0.0	7.5
Cycle Q Clear(g_c), s	8.4	13.6	13.6	1.1	22.7	22.7	2.3	0.0	0.0	12.3	0.0	7.5
Prop In Lane	1.00		0.04	1.00		0.25	0.79		0.09	0.93		1.00
Lane Grp Cap(c), veh/h	301	1219	1273	19	1083	1091	52	0	0	221	0	333
V/C Ratio(X)	0.80	0.38	0.38	0.85	0.53	0.53	0.63	0.00	0.00	0.83	0.00	0.34
Avail Cap(c_a), veh/h	590	1219	1273	145	1083	1091	338	0	0	436	0	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.6	7.9	7.9	60.3	13.4	13.4	58.5	0.0	0.0	52.1	0.0	40.8
Incr Delay (d2), s/veh	1.8	0.9	0.9	30.0	1.9	1.8	4.7	0.0	0.0	3.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	5.3	5.5	0.7	9.4	9.5	1.1	0.0	0.0	5.6	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.4	8.8	8.8	90.3	15.3	15.3	63.2	0.0	0.0	55.2	0.0	41.0
LnGrp LOS	E	A	A	F	B	B	E	A	A	E	A	D
Approach Vol, veh/h	1198			1168			33			297		
Approach Delay, s/veh	18.3			16.3			63.2			49.7		
Approach LOS	B			B			E			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	89.9		7.6	14.7	80.5		19.2				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	10.0	41.0		23.5	21.0	30.0		30.0				
Max Q Clear Time (g_c+I), s	13.1	15.6		4.3	10.4	24.7		14.3				
Green Ext Time (p_c), s	0.0	10.1		0.1	0.3	3.9		0.7				

Intersection Summary

HCM 6th Ctrl Delay 21.5

HCM 6th LOS C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary 4: San Pablo Dam Rd & El Portal Dr

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	503	15	9	759	454	10	6	2	580	31	89
Future Volume (veh/h)	71	503	15	9	759	454	10	6	2	580	31	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.92	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	76	535	16	10	807	428	11	6	1	720	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	97	2096	63	11	1218	641	32	18	3	779	409	0
Arrive On Green	0.05	0.60	0.60	0.01	0.55	0.55	0.03	0.03	0.03	0.22	0.00	0.00
Sat Flow, veh/h	1767	3495	104	1767	2209	1163	1084	591	99	3534	1856	0
Grp Volume(v), veh/h	76	270	281	10	643	592	18	0	0	720	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1837	1767	1763	1609	1774	0	0	1767	1856	0
Q Serve(g_s), s	5.2	8.8	8.8	0.7	31.4	31.9	1.2	0.0	0.0	24.3	0.0	0.0
Cycle Q Clear(g_c), s	5.2	8.8	8.8	0.7	31.4	31.9	1.2	0.0	0.0	24.3	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.72	0.61		0.06	1.00		0.00
Lane Grp Cap(c), veh/h	97	1057	1102	11	972	887	53	0	0	779	409	0
V/C Ratio(X)	0.79	0.25	0.26	0.89	0.66	0.67	0.34	0.00	0.00	0.92	0.00	0.00
Avail Cap(c_a), veh/h	217	1057	1102	217	972	887	342	0	0	840	441	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	57.0	11.5	11.5	60.6	19.3	19.4	58.0	0.0	0.0	46.5	0.0	0.0
Incr Delay (d2), s/veh	5.2	0.6	0.6	51.6	3.5	4.0	1.4	0.0	0.0	14.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	3.6	3.8	0.5	13.6	12.7	0.6	0.0	0.0	12.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.2	12.1	12.1	112.2	22.8	23.4	59.4	0.0	0.0	61.1	0.0	0.0
LnGrp LOS	E	B	B	F	C	C	E	A	A	E	A	A
Approach Vol, veh/h	627			1245			18			720		
Approach Delay, s/veh	18.2			23.8			59.4			61.1		
Approach LOS	B			C			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.8	78.7		7.6	10.7	72.8		30.9				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	15.0	37.0		23.5	15.0	37.0		29.0				
Max Q Clear Time (g_c+I), s	12.7	10.8		3.2	7.2	33.9		26.3				
Green Ext Time (p_c), s	0.0	5.2		0.0	0.0	2.5		0.6				

Intersection Summary

HCM 6th Ctrl Delay 33.0

HCM 6th LOS C

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

HCM Signalized Intersection Capacity Analysis

Existing AM

5: I-80 EB Off Ramp/I-80 EB On Ramp & Amador St & San Pablo Dam Rd

												
Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	NBR2	NWL	NWR	NWR2
Lane Configurations		↔↔		↔↔	↔	↔	↔	↔		↔		↔
Traffic Volume (vph)	260	179	106	818	24	305	0	283	7	36	211	163
Future Volume (vph)	260	179	106	818	24	305	0	283	7	36	211	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Lane Util. Factor		0.95		0.95	1.00	0.95	0.91	0.95		1.00		0.95
Frpb, ped/bikes		0.99		1.00	0.98	1.00	1.00	1.00		1.00		1.00
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00		1.00		1.00
Frt		0.97		1.00	0.85	1.00	0.92	0.85		0.87		0.85
Flt Protected		0.98		1.00	1.00	0.95	0.98	1.00		0.99		1.00
Satd. Flow (prot)		3296		3505	1531	1665	1513	1490		1595		1490
Flt Permitted		0.98		1.00	1.00	0.95	0.98	1.00		0.99		1.00
Satd. Flow (perm)		3296		3505	1531	1665	1513	1490		1595		1490
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	277	190	113	870	26	324	0	301	7	38	224	173
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	51	0	132
Lane Group Flow (vph)	0	580	0	870	8	220	212	200	0	228	0	24
Confl. Peds. (#/hr)			6									
Confl. Bikes (#/hr)					3							
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA		NA	Perm	Split	NA	custom		Prot		Perm
Protected Phases	1 8	1 8		2		7	7	2 7		4		
Permitted Phases					2							4
Actuated Green, G (s)		43.2		45.9	45.9	24.4	24.4	70.3		23.2		23.2
Effective Green, g (s)		43.2		45.9	45.9	24.4	24.4	70.3		23.2		23.2
Actuated g/C Ratio		0.29		0.31	0.31	0.16	0.16	0.47		0.16		0.16
Clearance Time (s)				3.0	3.0	3.0	3.0			3.0		3.0
Vehicle Extension (s)				0.2	0.2	0.2	0.2			0.2		0.2
Lane Grp Cap (vph)		957		1081	472	273	248	704		248		232
v/s Ratio Prot		c0.18		c0.25		0.13	c0.14	0.13		c0.14		
v/s Ratio Perm					0.01							0.02
v/c Ratio		0.61		0.80	0.02	0.81	0.85	0.28		0.92		0.10
Uniform Delay, d1		45.4		47.3	35.7	59.9	60.4	23.9		61.8		53.8
Progression Factor		0.76		1.00	1.00	1.00	1.00	1.00		1.00		1.00
Incremental Delay, d2		0.4		4.2	0.0	15.0	23.1	0.1		34.9		0.1
Delay (s)		34.9		51.5	35.7	74.8	83.5	24.0		96.7		53.9
Level of Service		C		D	D	E	F	C		F		D
Approach Delay (s)		34.9		51.0			61.6			81.3		
Approach LOS		C		D			E			F		
Intersection Summary												
HCM 2000 Control Delay			55.2			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			148.7			Sum of lost time (s)			15.0			
Intersection Capacity Utilization			81.9%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

6: I-80 WB On Ramp/I-80 WB Off Ramp & San Pablo Dam Rd

Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑					↑	↑	
Traffic Volume (vph)	0	413	311	475	684	0	0	0	0	132	34	475
Future Volume (vph)	0	413	311	475	684	0	0	0	0	132	34	475
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0					3.0	3.0	
Lane Util. Factor		0.95	1.00		0.95					1.00	1.00	
Frpb, ped/bikes		1.00	0.96		1.00					1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00					1.00	1.00	
Frt		1.00	0.85		1.00					1.00	0.86	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		3505	1511		3428					1752	1586	
Flt Permitted		1.00	1.00		0.59					0.95	1.00	
Satd. Flow (perm)		3505	1511		2063					1752	1586	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	430	324	495	712	0	0	0	0	138	35	495
RTOR Reduction (vph)	0	0	280	0	0	0	0	0	0	0	315	0
Lane Group Flow (vph)	0	430	44	0	1208	0	0	0	0	138	215	0
Confl. Peds. (#/hr)			11	11								
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		1		2 7 4	1 2 7 4					8	8	
Permitted Phases			1									
Actuated Green, G (s)		20.1	20.1		119.6					20.1	20.1	
Effective Green, g (s)		20.1	20.1		119.6					20.1	20.1	
Actuated g/C Ratio		0.14	0.14		0.80					0.14	0.14	
Clearance Time (s)		3.0	3.0							3.0	3.0	
Vehicle Extension (s)		0.2	0.2							0.2	0.2	
Lane Grp Cap (vph)		473	204		2572					236	214	
v/s Ratio Prot		c0.12			c0.31					0.08	c0.14	
v/s Ratio Perm			0.03		0.06							
v/c Ratio		0.91	0.21		0.47					0.58	1.01	
Uniform Delay, d1		63.4	57.3		4.6					60.4	64.3	
Progression Factor		1.00	1.00		0.17					1.00	1.00	
Incremental Delay, d2		20.7	0.2		0.0					2.4	63.0	
Delay (s)		84.1	57.5		0.8					62.8	127.3	
Level of Service		F	E		A					E	F	
Approach Delay (s)		72.7			0.8			0.0			113.9	
Approach LOS		E			A			A			F	
Intersection Summary												
HCM 2000 Control Delay			50.1			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			148.7			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			94.2%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary 7: I-80 EB Off Ramp/I-80 EB On Ramp & EI Portal Dr

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	347	619	0	0	458	174	303	2	202	0	0	0
Future Volume (veh/h)	347	619	0	0	458	174	303	2	202	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	351	625	0	0	463	142	306	2	43			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	373	1335	0	0	1225	373	346	2	310			
Arrive On Green	0.42	1.00	0.00	0.00	0.46	0.46	0.20	0.20	0.20			
Sat Flow, veh/h	1767	1856	0	0	2745	807	1756	11	1572			
Grp Volume(v), veh/h	351	625	0	0	306	299	308	0	43			
Grp Sat Flow(s),veh/h/ln	1767	1856	0	0	1763	1696	1768	0	1572			
Q Serve(g_s), s	19.1	0.0	0.0	0.0	11.3	11.5	16.9	0.0	2.3			
Cycle Q Clear(g_c), s	19.1	0.0	0.0	0.0	11.3	11.5	16.9	0.0	2.3			
Prop In Lane	1.00		0.00	0.00		0.48	0.99		1.00			
Lane Grp Cap(c), veh/h	373	1335	0	0	814	783	349	0	310			
V/C Ratio(X)	0.94	0.47	0.00	0.00	0.38	0.38	0.88	0.00	0.14			
Avail Cap(c_a), veh/h	406	1335	0	0	814	783	477	0	425			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(l)	0.69	0.69	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	28.3	0.0	0.0	0.0	17.5	17.6	39.0	0.0	33.1			
Incr Delay (d2), s/veh	22.0	0.8	0.0	0.0	1.3	1.4	11.2	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.0	0.3	0.0	0.0	4.9	4.8	8.2	0.0	0.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.3	0.8	0.0	0.0	18.9	19.0	50.2	0.0	33.2			
LnGrp LOS	D	A	A	A	B	B	D	A	C			
Approach Vol, veh/h	976			605			351					
Approach Delay, s/veh	18.6			18.9			48.1					
Approach LOS	B			B			D					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	76.1			25.8			50.3			23.9		
Change Period (Y+Rc), s	4.1			* 4.7			4.1			4.2		
Max Green Setting (Gmax), s	64.7			* 23			36.7			27.0		
Max Q Clear Time (g_c+I1), s	2.0			21.1			13.5			18.9		
Green Ext Time (p_c), s	4.8			0.0			4.1			0.8		

Intersection Summary

HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary 8: I-80 WB On Ramp/I-80 WB Off Ramp & El Portal Dr

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑						↑	↑
Traffic Volume (veh/h)	0	687	291	186	575	0	0	0	0	279	12	399
Future Volume (veh/h)	0	687	291	186	575	0	0	0	0	279	12	399
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	1856	1856
Adj Flow Rate, veh/h	0	694	167	188	581	0				282	12	96
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99				0.99	0.99	0.99
Percent Heavy Veh, %	0	3	3	3	3	0				3	3	3
Cap, veh/h	0	1066	892	216	1361	0				311	13	288
Arrive On Green	0.00	0.57	0.57	0.24	1.00	0.00				0.18	0.18	0.18
Sat Flow, veh/h	0	1856	1553	1767	1856	0				1698	72	1572
Grp Volume(v), veh/h	0	694	167	188	581	0				294	0	96
Grp Sat Flow(s),veh/h/ln	0	1856	1553	1767	1856	0				1771	0	1572
Q Serve(g_s), s	0.0	25.4	5.1	10.2	0.0	0.0				16.3	0.0	5.3
Cycle Q Clear(g_c), s	0.0	25.4	5.1	10.2	0.0	0.0				16.3	0.0	5.3
Prop In Lane	0.00		1.00	1.00		0.00				0.96		1.00
Lane Grp Cap(c), veh/h	0	1066	892	216	1361	0				325	0	288
V/C Ratio(X)	0.00	0.65	0.19	0.87	0.43	0.00				0.91	0.00	0.33
Avail Cap(c_a), veh/h	0	1066	892	353	1361	0				354	0	314
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.91	0.91	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.5	10.2	37.0	0.0	0.0				40.0	0.0	35.5
Incr Delay (d2), s/veh	0.0	3.1	0.5	6.3	0.9	0.0				23.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.6	1.7	4.2	0.3	0.0				9.0	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.6	10.6	43.3	0.9	0.0				63.5	0.0	35.8
LnGrp LOS	A	B	B	D	A	A				E	A	D
Approach Vol, veh/h		861			769						390	
Approach Delay, s/veh		16.2			11.3						56.7	
Approach LOS		B			B						E	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	15.9	61.5		22.5		77.5						
Change Period (Y+Rc), s	3.7	4.1		* 4.2		4.1						
Max Green Setting (Gmax), s	20.0	47.7		* 20		71.7						
Max Q Clear Time (g_c+11.2), s	11.2	27.4		18.3		2.0						
Green Ext Time (p_c), s	0.0	0.6		0.1		0.5						

Intersection Summary

HCM 6th Ctrl Delay	22.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

9: San Pablo Ave & 23rd Ave/Road 20

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	304	196	80	38	182	70	84	288	75	46	405	457
Future Volume (veh/h)	304	196	80	38	182	70	84	288	75	46	405	457
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	266	289	0	40	194	0	89	306	80	49	431	486
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	301	316		54	262		112	1152	296	63	1373	590
Arrive On Green	0.17	0.17	0.00	0.17	0.17	0.00	0.06	0.42	0.42	0.04	0.39	0.39
Sat Flow, veh/h	1767	1856	1572	314	1525	1572	1767	2759	708	1767	3526	1514
Grp Volume(v), veh/h	266	289	0	234	0	0	89	193	193	49	431	486
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1840	0	1572	1767	1763	1704	1767	1763	1514
Q Serve(g_s), s	17.2	18.0	0.0	14.2	0.0	0.0	5.8	8.4	8.7	3.2	10.0	33.9
Cycle Q Clear(g_c), s	17.2	18.0	0.0	14.2	0.0	0.0	5.8	8.4	8.7	3.2	10.0	33.9
Prop In Lane	1.00		1.00	0.17		1.00	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	301	316		316	0		112	736	712	63	1373	590
V/C Ratio(X)	0.88	0.91		0.74	0.00		0.79	0.26	0.27	0.78	0.31	0.82
Avail Cap(c_a), veh/h	301	316		784	0		301	902	872	151	1803	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	47.8	0.0	46.1	0.0	0.0	54.2	22.4	22.4	56.1	24.9	32.2
Incr Delay (d2), s/veh	24.3	29.1	0.0	1.3	0.0	0.0	4.7	0.4	0.4	7.5	0.3	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	10.9	0.0	6.6	0.0	0.0	2.7	3.5	3.5	1.6	4.2	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.9	76.9	0.0	47.4	0.0	0.0	58.8	22.8	22.9	63.6	25.2	40.0
LnGrp LOS	E	E		D	A		E	C	C	E	C	D
Approach Vol, veh/h	555			234			475			966		
Approach Delay, s/veh	74.5			47.4			29.6			34.6		
Approach LOS	E			D			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.2	55.0		26.0	13.5	51.7		26.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	10.0	60.0		20.0	20.0	60.0		50.0				
Max Q Clear Time (g_c+I), s	15.2	10.7		20.0	7.8	35.9		16.2				
Green Ext Time (p_c), s	0.0	5.0		0.0	0.1	9.8		1.0				

Intersection Summary

HCM 6th Ctrl Delay 44.8

HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary 10: El Portal Dr & Road 20

Existing AM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	39	270	205	524	501	62
Future Volume (veh/h)	39	270	205	524	501	62
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	44	0	233	595	569	45
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	58		275	2956	2206	960
Arrive On Green	0.03	0.00	0.16	0.84	0.63	0.63
Sat Flow, veh/h	1767	1572	1767	3618	3618	1534
Grp Volume(v), veh/h	44	0	233	595	569	45
Grp Sat Flow(s), veh/h/ln	1767	1572	1767	3618	3618	1534
Q Serve(g_s), s	1.7	0.0	9.0	2.3	5.0	0.8
Cycle Q Clear(g_c), s	1.7	0.0	9.0	2.3	5.0	0.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	58		275	2956	2206	960
V/C Ratio(X)	0.76		0.85	0.20	0.26	0.05
Avail Cap(c_a), veh/h	631		303	2956	2206	960
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	0.0	28.7	1.1	5.8	5.1
Incr Delay (d2), s/veh	7.3	0.0	16.8	0.2	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	4.9	0.1	1.6	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.9	0.0	45.5	1.3	6.1	5.1
LnGrp LOS	D		D	A	A	A
Approach Vol, veh/h	44			828	614	
Approach Delay, s/veh	40.9			13.7	6.1	
Approach LOS	D			B	A	
Timer - Assigned Phs	1	2		6	8	
Phs Duration (G+Y+Rc), s	4.9	48.8		63.7	6.3	
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	
Max Green Setting (Gmax), s	12.0	20.0		36.0	25.0	
Max Q Clear Time (g_c+I1), s	11.0	7.0		4.3	3.7	
Green Ext Time (p_c), s	0.0	4.3		6.1	0.0	

Intersection Summary

HCM 6th Ctrl Delay	11.3
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection

Intersection Delay, s/veh 10.7

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	149	22	10	2	41	27	7	119	6	31	108	187
Future Vol, veh/h	149	22	10	2	41	27	7	119	6	31	108	187
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	164	24	11	2	45	30	8	131	7	34	119	205
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.8	9	9.6	11.5
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	82%	3%	10%
Vol Thru, %	90%	12%	59%	33%
Vol Right, %	5%	6%	39%	57%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	132	181	70	326
LT Vol	7	149	2	31
Through Vol	119	22	41	108
RT Vol	6	10	27	187
Lane Flow Rate	145	199	77	358
Geometry Grp	1	1	1	1
Degree of Util (X)	0.206	0.302	0.114	0.454
Departure Headway (Hd)	5.219	5.469	5.327	4.559
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	692	660	676	781
Service Time	3.219	3.469	3.335	2.648
HCM Lane V/C Ratio	0.21	0.302	0.114	0.458
HCM Control Delay	9.6	10.8	9	11.5
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.8	1.3	0.4	2.4

HCM 6th Signalized Intersection Summary 12: El Portal Dr & Glenlock St

Existing AM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	144	7	0	825	875	98
Future Volume (veh/h)	144	7	0	825	875	98
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	0	1856	1856	1856
Adj Flow Rate, veh/h	148	6	0	851	902	99
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	0	3	3	3
Cap, veh/h	178	7	0	1471	1302	143
Arrive On Green	0.11	0.11	0.00	0.79	0.79	0.79
Sat Flow, veh/h	1680	68	0	1856	1643	180
Grp Volume(v), veh/h	155	0	0	851	0	1001
Grp Sat Flow(s), veh/h/ln	1759	0	0	1856	0	1823
Q Serve(g_s), s	8.6	0.0	0.0	17.6	0.0	25.2
Cycle Q Clear(g_c), s	8.6	0.0	0.0	17.6	0.0	25.2
Prop In Lane	0.95	0.04	0.00			0.10
Lane Grp Cap(c), veh/h	187	0	0	1471	0	1445
V/C Ratio(X)	0.83	0.00	0.00	0.58	0.00	0.69
Avail Cap(c_a), veh/h	333	0	0	1471	0	1445
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.8	0.0	0.0	4.0	0.0	4.8
Incr Delay (d2), s/veh	3.6	0.0	0.0	1.7	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	0.0	4.9	0.0	7.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.4	0.0	0.0	5.6	0.0	7.5
LnGrp LOS	D	A	A	A	A	A
Approach Vol, veh/h	155			851	1001	
Approach Delay, s/veh	47.4			5.6	7.5	
Approach LOS	D			A	A	
Timer - Assigned Phs	2			4		6
Phs Duration (G+Y+Rc), s	85.4			14.6		85.4
Change Period (Y+Rc), s	6.1			4.0		6.1
Max Green Setting (Gmax), s	71.0			18.9		71.0
Max Q Clear Time (g_c+I1), s	19.6			10.6		27.2
Green Ext Time (p_c), s	22.5			0.1		26.9
Intersection Summary						
HCM 6th Ctrl Delay			9.8			
HCM 6th LOS			A			

Notes

User approved volume balancing among the lanes for turning movement.

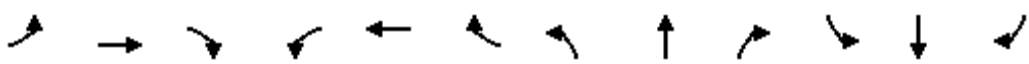
HCM 6th TWSC
13: San Pablo Dam Rd & D Avila Way

Existing AM

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	688	541	0	0	10
Future Vol, veh/h	7	688	541	0	0	10
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	8	819	644	0	0	12
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	645	0	-	0	-	323
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.16	-	-	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.23	-	-	-	-	3.33
Pot Cap-1 Maneuver	929	-	-	-	0	670
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	928	-	-	-	-	669
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		10.5		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	928	-	-	-	-	669
HCM Lane V/C Ratio	0.009	-	-	-	-	0.018
HCM Control Delay (s)	8.9	-	-	-	-	10.5
HCM Lane LOS	A	-	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	-	0.1

HCM 6th Signalized Intersection Summary 14: Valley View Rd & Morningside Dr

Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	42	23	78	42	611	59	56	452	371
Future Volume (veh/h)	0	0	0	42	23	78	42	611	59	56	452	371
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.92	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h				52	29	18	52	764	69	70	565	373
Peak Hour Factor				0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %				3	3	3	3	3	3	3	3	3
Cap, veh/h				460	269	167	94	1356	122	115	866	572
Arrive On Green				0.26	0.26	0.26	0.05	0.41	0.41	0.06	0.43	0.43
Sat Flow, veh/h				1767	1034	642	1767	3269	295	1767	2031	1341
Grp Volume(v), veh/h				52	0	47	52	412	421	70	490	448
Grp Sat Flow(s),veh/h/ln				1767	0	1677	1767	1763	1801	1767	1763	1609
Q Serve(g_s), s				1.0	0.0	1.0	1.3	8.0	8.0	1.7	9.9	9.9
Cycle Q Clear(g_c), s				1.0	0.0	1.0	1.3	8.0	8.0	1.7	9.9	9.9
Prop In Lane				1.00		0.38	1.00		0.16	1.00		0.83
Lane Grp Cap(c), veh/h				460	0	436	94	731	747	115	752	686
V/C Ratio(X)				0.11	0.00	0.11	0.55	0.56	0.56	0.61	0.65	0.65
Avail Cap(c_a), veh/h				1572	0	1491	786	1568	1602	786	1568	1431
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				12.7	0.0	12.7	20.8	10.0	10.0	20.5	10.2	10.2
Incr Delay (d2), s/veh				0.0	0.0	0.0	1.9	0.7	0.7	2.0	1.0	1.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.4	0.0	0.3	0.5	2.5	2.6	0.7	3.1	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				12.7	0.0	12.7	22.7	10.7	10.7	22.4	11.2	11.3
LnGrp LOS				B	A	B	C	B	B	C	B	B
Approach Vol, veh/h					99			885			1008	
Approach Delay, s/veh					12.7			11.4			12.0	
Approach LOS					B			B			B	
Timer - Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	6.4	22.9			5.9	23.4		15.7				
Change Period (Y+Rc), s	3.5	* 4.2			3.5	* 4.2		4.0				
Max Green Setting (Gmax), s	20.0	* 40			20.0	* 40		40.0				
Max Q Clear Time (g_c+I1), s	3.7	10.0			3.3	11.9		3.0				
Green Ext Time (p_c), s	0.0	6.0			0.0	7.2		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				11.8								
HCM 6th LOS				B								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary 15: Sobrante Ave & Valley View Rd

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	719	11	114	755	8	7	20	374	14	30	23
Future Volume (veh/h)	24	719	11	114	755	8	7	20	374	14	30	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	30	899	0	142	944	10	9	25	63	18	38	14
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	35	1529		184	1852	20	12	34	86	23	49	18
Arrive On Green	0.02	0.43	0.00	0.10	0.52	0.52	0.08	0.08	0.08	0.05	0.05	0.05
Sat Flow, veh/h	1767	3618	0	1767	3574	38	153	424	1069	455	960	354
Grp Volume(v), veh/h	30	899	0	142	466	488	97	0	0	70	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	0	1767	1763	1849	1646	0	0	1769	0	0
Q Serve(g_s), s	0.9	10.3	0.0	4.1	9.2	9.2	3.1	0.0	0.0	2.1	0.0	0.0
Cycle Q Clear(g_c), s	0.9	10.3	0.0	4.1	9.2	9.2	3.1	0.0	0.0	2.1	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.02	0.09		0.65	0.26		0.20
Lane Grp Cap(c), veh/h	35	1529		184	914	958	132	0	0	91	0	0
V/C Ratio(X)	0.86	0.59		0.77	0.51	0.51	0.73	0.00	0.00	0.77	0.00	0.00
Avail Cap(c_a), veh/h	667	3328		667	1664	1745	621	0	0	668	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.9	11.4	0.0	23.1	8.4	8.4	23.8	0.0	0.0	24.8	0.0	0.0
Incr Delay (d2), s/veh	20.0	0.5	0.0	2.6	0.6	0.6	2.9	0.0	0.0	5.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.3	0.0	1.7	2.7	2.8	1.2	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.9	11.9	0.0	25.7	9.0	9.0	26.7	0.0	0.0	29.9	0.0	0.0
LnGrp LOS	D	B		C	A	A	C	A	A	C	A	A
Approach Vol, veh/h	929				1096		97				70	
Approach Delay, s/veh	13.0				11.1		26.7				29.9	
Approach LOS	B				B		C				C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	28.5		6.7	5.0	33.0		8.3				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	20.0	50.0		20.0	20.0	50.0		20.0				
Max Q Clear Time (g_c+I), s	10.5	12.3		4.1	2.9	11.2		5.1				
Green Ext Time (p_c), s	0.1	10.7		0.2	0.0	10.7		0.2				

Intersection Summary

HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary 16: Appian Way & Allview Ave

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (veh/h)	123	0	29	0	0	0	85	801	0	0	804	108
Future Volume (veh/h)	123	0	29	0	0	0	85	801	0	0	804	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	135	0	0	0	0	0	93	880	0	0	884	118
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	179	0	0	0	3	0	121	1423	0	2	1031	138
Arrive On Green	0.10	0.00	0.00	0.00	0.00	0.00	0.07	0.77	0.00	0.00	0.64	0.64
Sat Flow, veh/h	1758	0	0	0	1856	0	1767	1856	0	1767	1602	214
Grp Volume(v), veh/h	135	0	0	0	0	0	93	880	0	0	0	1002
Grp Sat Flow(s),veh/h/ln	1758	0	0	0	1856	0	1767	1856	0	1767	0	1816
Q Serve(g_s), s	5.4	0.0	0.0	0.0	0.0	0.0	3.7	15.2	0.0	0.0	0.0	31.8
Cycle Q Clear(g_c), s	5.4	0.0	0.0	0.0	0.0	0.0	3.7	15.2	0.0	0.0	0.0	31.8
Prop In Lane	1.00		0.00	0.00		0.00	1.00		0.00	1.00		0.12
Lane Grp Cap(c), veh/h	179	0	0	0	3	0	121	1423	0	2	0	1169
V/C Ratio(X)	0.75	0.00	0.00	0.00	0.00	0.00	0.77	0.62	0.00	0.00	0.00	0.86
Avail Cap(c_a), veh/h	728	0	0	0	769	0	732	1537	0	732	0	1505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	31.6	0.0	0.0	0.0	0.0	0.0	33.2	3.7	0.0	0.0	0.0	10.3
Incr Delay (d2), s/veh	2.4	0.0	0.0	0.0	0.0	0.0	3.9	0.8	0.0	0.0	0.0	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.0	0.0	0.0	0.0	1.7	3.0	0.0	0.0	0.0	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.1	0.0	0.0	0.0	0.0	0.0	37.0	4.6	0.0	0.0	0.0	14.9
LnGrp LOS	C	A	A	A	A	A	D	A	A	A	A	B
Approach Vol, veh/h	135			0			973			1002		
Approach Delay, s/veh	34.1			0.0			7.7			14.9		
Approach LOS	C						A			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	61.1		11.4	9.0	52.1		0.0				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	30.0	60.0		30.0	30.0	60.0		30.0				
Max Q Clear Time (g_c+I), s	10.0	17.2		7.4	5.7	33.8		0.0				
Green Ext Time (p_c), s	0.0	12.4		0.5	0.1	12.8		0.0				

Intersection Summary

HCM 6th Ctrl Delay	12.8											
HCM 6th LOS	B											

HCM 6th Signalized Intersection Summary 17: Appian Way & EB I-80 Off-Ramp/EB I-80 On-Ramp

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	459	4	138	0	0	0	0	551	513	0	1066	399
Future Volume (veh/h)	459	4	138	0	0	0	0	551	513	0	1066	399
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	543	0	69				0	716	341	0	1184	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				0	3	3	0	3	3
Cap, veh/h	639	0	284				0	2538	1074	0	2411	
Arrive On Green	0.18	0.00	0.18				0.00	0.68	0.68	0.00	1.00	0.00
Sat Flow, veh/h	3534	0	1572				0	3711	1571	0	3711	0
Grp Volume(v), veh/h	543	0	69				0	716	341	0	1184	0
Grp Sat Flow(s),veh/h/ln	1767	0	1572				0	1856	1571	0	1763	0
Q Serve(g_s), s	9.7	0.0	2.4				0.0	4.9	5.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.7	0.0	2.4				0.0	4.9	5.7	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	639	0	284				0	2538	1074	0	2411	
V/C Ratio(X)	0.85	0.00	0.24				0.00	0.28	0.32	0.00	0.49	
Avail Cap(c_a), veh/h	1087	0	484				0	2538	1074	0	2411	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.00	0.09	0.00
Uniform Delay (d), s/veh	25.8	0.0	22.8				0.0	4.0	4.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.2				0.0	0.3	0.8	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	0.9				0.0	1.3	1.4	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.0	0.0	23.0				0.0	4.3	4.9	0.0	0.1	0.0
LnGrp LOS	C	A	C				A	A	A	A	A	
Approach Vol, veh/h	612						1057			1184		
Approach Delay, s/veh	26.6						4.5			0.1		
Approach LOS	C						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	48.5			16.5			48.5					
Change Period (Y+Rc), s	4.1			* 4.7			4.1					
Max Green Setting (Gmax), s	36.2			* 20			36.2					
Max Q Clear Time (g_c+I1), s	7.7			11.7			2.0					
Green Ext Time (p_c), s	0.8			0.1			1.7					

Intersection Summary

HCM 6th Ctrl Delay	7.4
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary 18: Appian Way & WB I-80 On-Ramp/WB I-80 Off-Ramp

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	529	10	385	188	822	0	0	936	713
Future Volume (veh/h)	0	0	0	529	10	385	188	822	0	0	936	713
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				711	0	214	216	945	0	0	1076	0
Peak Hour Factor				0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %				3	3	3	3	3	0	0	3	3
Cap, veh/h				757	0	336	240	2559	0	0	1979	
Arrive On Green				0.21	0.00	0.21	0.14	0.73	0.00	0.00	0.56	0.00
Sat Flow, veh/h				3534	0	1568	1767	3618	0	0	3711	0
Grp Volume(v), veh/h				711	0	214	216	945	0	0	1076	0
Grp Sat Flow(s),veh/h/ln				1767	0	1568	1767	1763	0	0	1763	0
Q Serve(g_s), s				25.7	0.0	16.1	15.6	13.1	0.0	0.0	25.1	0.0
Cycle Q Clear(g_c), s				25.7	0.0	16.1	15.6	13.1	0.0	0.0	25.1	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				757	0	336	240	2559	0	0	1979	
V/C Ratio(X)				0.94	0.00	0.64	0.90	0.37	0.00	0.00	0.54	
Avail Cap(c_a), veh/h				1087	0	482	353	2559	0	0	1979	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.88	0.88	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				50.2	0.0	46.5	55.3	6.7	0.0	0.0	18.0	0.0
Incr Delay (d2), s/veh				9.8	0.0	0.7	13.0	0.4	0.0	0.0	1.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				12.3	0.0	6.3	7.8	4.5	0.0	0.0	10.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				60.0	0.0	47.2	68.3	7.0	0.0	0.0	19.1	0.0
LnGrp LOS				E	A	D	E	A	A	A	B	
Approach Vol, veh/h						925		1161			1076	
Approach Delay, s/veh						57.1		18.4			19.1	
Approach LOS						E		B			B	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		98.4			21.4	77.1		31.6				
Change Period (Y+Rc), s		4.1			3.7	4.1		3.7				
Max Green Setting (Gmax), s		82.2			26.0	52.5		40.0				
Max Q Clear Time (g_c+I1), s		15.1			17.6	27.1		27.7				
Green Ext Time (p_c), s		1.3			0.0	1.5		0.1				

Intersection Summary

HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

1: Valley View Rd & Amend Rd

Existing PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	34	65	398	55	74	388
Future Volume (veh/h)	34	65	398	55	74	388
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	38	13	442	49	82	431
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	204	182	1059	117	234	2049
Arrive On Green	0.12	0.12	0.33	0.33	0.13	0.58
Sat Flow, veh/h	1767	1572	3294	353	1767	3618
Grp Volume(v), veh/h	38	13	242	249	82	431
Grp Sat Flow(s),veh/h/ln	1767	1572	1763	1792	1767	1763
Q Serve(g_s), s	0.6	0.2	3.2	3.2	1.3	1.7
Cycle Q Clear(g_c), s	0.6	0.2	3.2	3.2	1.3	1.7
Prop In Lane	1.00	1.00		0.20	1.00	
Lane Grp Cap(c), veh/h	204	182	583	593	234	2049
V/C Ratio(X)	0.19	0.07	0.42	0.42	0.35	0.21
Avail Cap(c_a), veh/h	893	794	2375	2414	833	4750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.9	11.7	7.7	7.7	11.7	3.0
Incr Delay (d2), s/veh	0.2	0.1	0.7	0.7	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.9	0.9	0.4	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.0	11.8	8.4	8.4	12.1	3.0
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	51		491			513
Approach Delay, s/veh	12.0		8.4			4.5
Approach LOS	B		A			A
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	7.4	14.3		7.9		21.8
Change Period (Y+Rc), s	3.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	14.0	40.0		15.0		40.0
Max Q Clear Time (g_c+I1), s	3.3	5.2		2.6		3.7
Green Ext Time (p_c), s	0.1	4.7		0.0		4.5
Intersection Summary						
HCM 6th Ctrl Delay			6.7			
HCM 6th LOS			A			
Notes						
User approved pedestrian interval to be less than phase max green.						

HCM 6th Signalized Intersection Summary 2: Valley View Rd & San Pablo Dam Rd

Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	370	23	9	603	403	20	5	7	136	22	91
Future Volume (veh/h)	140	370	23	9	603	403	20	5	7	136	22	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	147	389	22	9	635	0	21	5	2	143	23	20
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	192	1736	98	9	1440		214	42	8	369	33	230
Arrive On Green	0.11	0.51	0.51	0.01	0.41	0.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1767	3390	191	1767	3526	1572	431	285	55	1417	228	1566
Grp Volume(v), veh/h	147	202	209	9	635	0	28	0	0	166	0	20
Grp Sat Flow(s), veh/h/ln	1767	1763	1818	1767	1763	1572	771	0	0	1645	0	1566
Q Serve(g_s), s	3.4	2.6	2.6	0.2	5.4	0.0	0.1	0.0	0.0	0.0	0.0	0.5
Cycle Q Clear(g_c), s	3.4	2.6	2.6	0.2	5.4	0.0	3.7	0.0	0.0	3.7	0.0	0.5
Prop In Lane	1.00		0.11	1.00		1.00	0.75		0.07	0.86		1.00
Lane Grp Cap(c), veh/h	192	903	931	9	1440		264	0	0	402	0	230
V/C Ratio(X)	0.76	0.22	0.22	0.97	0.44		0.11	0.00	0.00	0.41	0.00	0.09
Avail Cap(c_a), veh/h	1272	2537	2617	1272	5074		1085	0	0	1229	0	1127
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.1	5.6	5.6	20.7	8.9	0.0	15.5	0.0	0.0	16.7	0.0	15.4
Incr Delay (d2), s/veh	2.4	0.3	0.3	75.4	0.5	0.0	0.1	0.0	0.0	0.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.6	0.6	0.3	1.4	0.0	0.2	0.0	0.0	1.3	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.4	5.9	5.9	96.1	9.4	0.0	15.6	0.0	0.0	17.0	0.0	15.4
LnGrp LOS	C	A	A	F	A		B	A	A	B	A	B
Approach Vol, veh/h	558			644			28			186		
Approach Delay, s/veh	9.7			10.6			15.6			16.8		
Approach LOS	A			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.2	27.3		10.1	8.5	23.0		10.1				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	30.0	60.0		30.0	30.0	60.0		30.0				
Max Q Clear Time (g_c+I), s	12.2	4.6		5.7	5.4	7.4		5.7				
Green Ext Time (p_c), s	0.0	5.2		0.1	0.2	9.6		0.6				

Intersection Summary

HCM 6th Ctrl Delay 11.1

HCM 6th LOS B

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary 3: La Colina Rd/Appian Way & San Pablo Dam Rd

Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↱	↑↓		↰↱	↑↓			↰↱			↑↓	↰↱
Traffic Volume (veh/h)	609	810	35	16	704	167	34	20	7	136	19	235
Future Volume (veh/h)	609	810	35	16	704	167	34	20	7	136	19	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	615	818	35	16	711	159	34	20	4	137	19	81
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	651	2405	103	19	1481	331	59	35	7	166	23	465
Arrive On Green	0.19	0.70	0.70	0.01	0.52	0.52	0.06	0.06	0.06	0.11	0.11	0.11
Sat Flow, veh/h	3428	3442	147	1767	2850	637	1041	613	123	1561	216	1568
Grp Volume(v), veh/h	615	419	434	16	440	430	58	0	0	156	0	81
Grp Sat Flow(s), veh/h/ln	1714	1763	1826	1767	1763	1724	1777	0	0	1777	0	1568
Q Serve(g_s), s	24.3	12.9	12.9	1.2	21.9	21.9	4.4	0.0	0.0	11.8	0.0	5.3
Cycle Q Clear(g_c), s	24.3	12.9	12.9	1.2	21.9	21.9	4.4	0.0	0.0	11.8	0.0	5.3
Prop In Lane	1.00		0.08	1.00		0.37	0.59		0.07	0.88		1.00
Lane Grp Cap(c), veh/h	651	1232	1276	19	916	896	100	0	0	189	0	465
V/C Ratio(X)	0.95	0.34	0.34	0.84	0.48	0.48	0.58	0.00	0.00	0.83	0.00	0.17
Avail Cap(c_a), veh/h	651	1232	1276	155	916	896	305	0	0	389	0	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.8	8.2	8.2	67.6	21.0	21.1	63.0	0.0	0.0	60.0	0.0	35.8
Incr Delay (d2), s/veh	22.5	0.8	0.7	28.4	1.8	1.8	2.0	0.0	0.0	3.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	5.1	5.3	0.7	9.6	9.4	2.0	0.0	0.0	5.5	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.3	8.9	8.9	96.0	22.8	22.9	65.0	0.0	0.0	63.4	0.0	35.9
LnGrp LOS	E	A	A	F	C	C	E	A	A	E	A	D
Approach Vol, veh/h	1468			886			58			237		
Approach Delay, s/veh	37.5			24.2			65.0			54.0		
Approach LOS	D			C			E			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5			11.7	30.0	76.7		18.6				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	12.0	54.0		23.5	26.0	40.0		30.0				
Max Q Clear Time (g_c+I), s	13.2	14.9		6.4	26.3	23.9		13.8				
Green Ext Time (p_c), s	0.0	10.1		0.1	0.0	7.2		0.6				

Intersection Summary

HCM 6th Ctrl Delay 35.1

HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary

4: San Pablo Dam Rd & El Portal Dr

Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	1068	16	6	551	417	12	13	2	374	18	67
Future Volume (veh/h)	161	1068	16	6	551	417	12	13	2	374	18	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	164	1090	16	6	562	354	12	13	1	448	0	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	187	2488	37	6	1228	773	20	22	2	509	267	0
Arrive On Green	0.11	0.70	0.70	0.00	0.60	0.60	0.02	0.02	0.02	0.14	0.00	0.00
Sat Flow, veh/h	1767	3555	52	1767	2055	1294	831	900	69	3534	1856	0
Grp Volume(v), veh/h	164	540	566	6	482	434	26	0	0	448	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1845	1767	1763	1587	1800	0	0	1767	1856	0
Q Serve(g_s), s	12.5	18.2	18.2	0.5	20.7	20.8	2.0	0.0	0.0	17.0	0.0	0.0
Cycle Q Clear(g_c), s	12.5	18.2	18.2	0.5	20.7	20.8	2.0	0.0	0.0	17.0	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.82	0.46		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	187	1234	1291	6	1053	948	44	0	0	509	267	0
V/C Ratio(X)	0.88	0.44	0.44	0.92	0.46	0.46	0.59	0.00	0.00	0.88	0.00	0.00
Avail Cap(c_a), veh/h	193	1234	1291	193	1053	948	374	0	0	748	393	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	60.4	8.9	8.9	68.2	15.3	15.3	66.1	0.0	0.0	57.5	0.0	0.0
Incr Delay (d2), s/veh	31.3	1.1	1.1	80.6	1.4	1.6	4.5	0.0	0.0	6.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	7.2	7.5	0.4	8.8	8.0	1.0	0.0	0.0	8.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.7	10.0	10.0	148.8	16.7	16.9	70.6	0.0	0.0	63.6	0.0	0.0
LnGrp LOS	F	B	A	F	B	B	E	A	A	E	A	A
Approach Vol, veh/h	1270			922			26			448		
Approach Delay, s/veh	20.6			17.6			70.6			63.6		
Approach LOS	C			B			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.5	101.4		7.4	18.5	87.4		23.7				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	15.0	47.0		28.5	15.0	47.0		29.0				
Max Q Clear Time (g_c+I), s	12.5	20.2		4.0	14.5	22.8		19.0				
Green Ext Time (p_c), s	0.0	12.3		0.1	0.0	9.7		0.7				

Intersection Summary

HCM 6th Ctrl Delay 27.3

HCM 6th LOS C

Notes

User approved volume balancing among the lanes for turning movement.

HCM Signalized Intersection Capacity Analysis

Existing PM

5: I-80 EB Off Ramp/I-80 EB On Ramp & Amador St & San Pablo Dam Rd

												
Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	NBR2	NWL	NWR	NWR2
Lane Configurations												
Traffic Volume (vph)	259	379	26	632	35	206	0	407	6	52	209	503
Future Volume (vph)	259	379	26	632	35	206	0	407	6	52	209	503
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Lane Util. Factor		0.95		0.95	1.00	0.95	0.91	0.95		1.00		0.95
Frpb, ped/bikes		1.00		1.00	0.97	1.00	0.99	1.00		1.00		1.00
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00		1.00		1.00
Frt		0.99		1.00	0.85	1.00	0.86	0.85		0.87		0.85
Flt Protected		0.98		1.00	1.00	0.95	1.00	1.00		0.99		1.00
Satd. Flow (prot)		3414		3505	1527	1665	1426	1490		1595		1490
Flt Permitted		0.98		1.00	1.00	0.95	1.00	1.00		0.99		1.00
Satd. Flow (perm)		3414		3505	1527	1665	1426	1490		1595		1490
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	282	412	28	687	38	224	0	442	7	57	227	547
RTOR Reduction (vph)	0	0	0	0	30	0	0	0	0	49	0	259
Lane Group Flow (vph)	0	722	0	687	8	202	239	232	0	372	0	151
Confl. Peds. (#/hr)			2		2			1				
Confl. Bikes (#/hr)			2		1							
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA		NA	Perm	Split	NA	custom		Prot		Perm
Protected Phases	1 8	1 8		2		7	7	2 7		4		
Permitted Phases					2							4
Actuated Green, G (s)		58.2		36.2	36.2	30.6	30.6	66.8		25.1		25.1
Effective Green, g (s)		58.2		36.2	36.2	30.6	30.6	66.8		25.1		25.1
Actuated g/C Ratio		0.36		0.22	0.22	0.19	0.19	0.41		0.15		0.15
Clearance Time (s)				3.0	3.0	3.0	3.0			3.0		3.0
Vehicle Extension (s)				0.2	0.2	0.2	0.2			0.2		0.2
Lane Grp Cap (vph)		1225		782	341	314	269	614		246		230
v/s Ratio Prot		c0.21		c0.20		0.12	c0.17	0.16		c0.23		
v/s Ratio Perm					0.01							0.10
v/c Ratio		0.59		0.88	0.02	0.64	0.89	0.38		1.51		0.66
Uniform Delay, d1		42.2		60.8	49.2	60.7	64.1	33.2		68.5		64.5
Progression Factor		0.47		1.00	1.00	1.00	1.00	1.00		1.00		1.00
Incremental Delay, d2		0.3		10.7	0.0	3.4	27.1	0.1		250.3		5.1
Delay (s)		20.1		71.5	49.2	64.1	91.2	33.3		318.8		69.6
Level of Service		C		E	D	E	F	C		F		E
Approach Delay (s)		20.1		70.3			63.1			195.9		
Approach LOS		C		E			E			F		
Intersection Summary												
HCM 2000 Control Delay			91.7			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			162.1			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			85.8%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

6: I-80 WB On Ramp/I-80 WB Off Ramp & San Pablo Dam Rd

Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↖↑					↖	↗	
Traffic Volume (vph)	0	616	406	322	568	0	0	0	0	48	3	482
Future Volume (vph)	0	616	406	322	568	0	0	0	0	48	3	482
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0					3.0	3.0	
Lane Util. Factor		0.95	1.00		0.95					1.00	1.00	
Frpb, ped/bikes		1.00	0.97		1.00					1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00					1.00	1.00	
Frt		1.00	0.85		1.00					1.00	0.85	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		3505	1523		3443					1752	1570	
Flt Permitted		1.00	1.00		0.54					0.95	1.00	
Satd. Flow (perm)		3505	1523		1893					1752	1570	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	629	414	329	580	0	0	0	0	49	3	492
RTOR Reduction (vph)	0	0	287	0	0	0	0	0	0	0	431	0
Lane Group Flow (vph)	0	629	127	0	909	0	0	0	0	49	64	0
Confl. Peds. (#/hr)			7			2						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		1		2 7 4	1 2 7 4					8	8	
Permitted Phases			1									
Actuated Green, G (s)		35.2	35.2		133.1					20.0	20.0	
Effective Green, g (s)		35.2	35.2		133.1					20.0	20.0	
Actuated g/C Ratio		0.22	0.22		0.82					0.12	0.12	
Clearance Time (s)		3.0	3.0							3.0	3.0	
Vehicle Extension (s)		0.2	0.2							0.2	0.2	
Lane Grp Cap (vph)		761	330		2490					216	193	
v/s Ratio Prot		c0.18			c0.22					0.03	c0.04	
v/s Ratio Perm			0.08		0.08							
v/c Ratio		0.83	0.38		0.37					0.23	0.33	
Uniform Delay, d1		60.5	54.2		3.7					64.1	64.9	
Progression Factor		1.00	1.00		0.04					1.00	1.00	
Incremental Delay, d2		7.0	0.3		0.0					0.2	0.4	
Delay (s)		67.5	54.5		0.2					64.3	65.3	
Level of Service		E	D		A					E	E	
Approach Delay (s)		62.3			0.2			0.0			65.2	
Approach LOS		E			A			A			E	
Intersection Summary												
HCM 2000 Control Delay			40.3			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.49									
Actuated Cycle Length (s)			162.1			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			90.9%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary 7: I-80 EB Off Ramp/I-80 EB On Ramp & EI Portal Dr

Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	513	0	0	491	227	275	4	137	0	0	0
Future Volume (veh/h)	351	513	0	0	491	227	275	4	137	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	362	529	0	0	506	191	284	4	29			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	391	1358	0	0	1162	436	323	5	291			
Arrive On Green	0.22	0.73	0.00	0.00	0.46	0.46	0.19	0.19	0.19			
Sat Flow, veh/h	1767	1856	0	0	2599	941	1744	25	1572			
Grp Volume(v), veh/h	362	529	0	0	355	342	288	0	29			
Grp Sat Flow(s),veh/h/ln	1767	1856	0	0	1763	1685	1768	0	1572			
Q Serve(g_s), s	20.1	10.7	0.0	0.0	13.5	13.7	15.9	0.0	1.5			
Cycle Q Clear(g_c), s	20.1	10.7	0.0	0.0	13.5	13.7	15.9	0.0	1.5			
Prop In Lane	1.00		0.00	0.00		0.56	0.99		1.00			
Lane Grp Cap(c), veh/h	391	1358	0	0	817	781	327	0	291			
V/C Ratio(X)	0.93	0.39	0.00	0.00	0.43	0.44	0.88	0.00	0.10			
Avail Cap(c_a), veh/h	583	1358	0	0	817	781	442	0	393			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.74	0.74	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	38.1	5.0	0.0	0.0	18.0	18.1	39.7	0.0	33.8			
Incr Delay (d2), s/veh	9.9	0.6	0.0	0.0	1.7	1.8	11.9	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.5	3.5	0.0	0.0	5.8	5.6	7.8	0.0	0.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.0	5.7	0.0	0.0	19.7	19.8	51.5	0.0	33.9			
LnGrp LOS	D	A	A	A	B	B	D	A	C			
Approach Vol, veh/h	891			697			317					
Approach Delay, s/veh	22.9			19.8			49.9					
Approach LOS	C			B			D					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	77.3			26.8			50.5			22.7		
Change Period (Y+Rc), s	4.1			* 4.7			4.1			4.2		
Max Green Setting (Gmax), s	66.7			* 33			27.7			25.0		
Max Q Clear Time (g_c+I1), s	12.7			22.1			15.7			17.9		
Green Ext Time (p_c), s	3.8			0.1			3.7			0.7		

Intersection Summary

HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary 8: I-80 WB On Ramp/I-80 WB Off Ramp & El Portal Dr

Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑						↑	↑
Traffic Volume (veh/h)	0	634	300	194	572	0	0	0	0	230	1	422
Future Volume (veh/h)	0	634	300	194	572	0	0	0	0	230	1	422
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	1856	1856
Adj Flow Rate, veh/h	0	660	205	202	596	0				240	1	160
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0				3	3	3
Cap, veh/h	0	570	477	731	1414	0				273	1	244
Arrive On Green	0.00	0.31	0.31	0.41	0.76	0.00				0.16	0.16	0.16
Sat Flow, veh/h	0	1856	1552	1767	1856	0				1760	7	1572
Grp Volume(v), veh/h	0	660	205	202	596	0				241	0	160
Grp Sat Flow(s),veh/h/ln	0	1856	1552	1767	1856	0				1768	0	1572
Q Serve(g_s), s	0.0	30.7	10.5	7.6	11.3	0.0				13.3	0.0	9.6
Cycle Q Clear(g_c), s	0.0	30.7	10.5	7.6	11.3	0.0				13.3	0.0	9.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	570	477	731	1414	0				274	0	244
V/C Ratio(X)	0.00	1.16	0.43	0.28	0.42	0.00				0.88	0.00	0.66
Avail Cap(c_a), veh/h	0	570	477	731	1414	0				442	0	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.86	0.86	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	34.7	27.7	19.4	4.2	0.0				41.3	0.0	39.7
Incr Delay (d2), s/veh	0.0	89.7	2.8	0.1	0.8	0.0				6.9	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	27.5	4.2	3.0	3.4	0.0				6.2	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	124.4	30.5	19.5	5.0	0.0				48.2	0.0	40.8
LnGrp LOS	A	F	C	B	A	A				D	A	D
Approach Vol, veh/h		865			798						401	
Approach Delay, s/veh		102.1			8.6						45.3	
Approach LOS		F			A						D	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	45.5	34.8		19.7		80.3						
Change Period (Y+Rc), s	4.1	* 4.1		* 4.2		4.1						
Max Green Setting (Gmax), s	30.0	* 31		* 25		66.7						
Max Q Clear Time (g_c+I), s	19.6	32.7		15.3		13.3						
Green Ext Time (p_c), s	0.0	0.0		0.2		0.6						

Intersection Summary

HCM 6th Ctrl Delay 54.9

HCM 6th LOS D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

9: San Pablo Ave & 23rd Ave/Road 20

Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	463	90	101	15	111	53	125	547	35	30	331	439
Future Volume (veh/h)	463	90	101	15	111	53	125	547	35	30	331	439
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	555	0	0	16	117	0	132	576	37	32	348	462
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	635	0		27	199		162	1487	95	41	1321	579
Arrive On Green	0.18	0.00	0.00	0.12	0.12	0.00	0.09	0.44	0.44	0.02	0.37	0.37
Sat Flow, veh/h	3534	0	1572	222	1623	1572	1767	3356	215	1767	3526	1545
Grp Volume(v), veh/h	555	0	0	133	0	0	132	302	311	32	348	462
Grp Sat Flow(s), veh/h/ln	1767	0	1572	1844	0	1572	1767	1763	1809	1767	1763	1545
Q Serve(g_s), s	15.8	0.0	0.0	7.1	0.0	0.0	7.6	11.9	12.0	1.9	7.1	27.7
Cycle Q Clear(g_c), s	15.8	0.0	0.0	7.1	0.0	0.0	7.6	11.9	12.0	1.9	7.1	27.7
Prop In Lane	1.00		1.00	0.12		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	635	0		226	0		162	781	802	41	1321	579
V/C Ratio(X)	0.87	0.00		0.59	0.00		0.82	0.39	0.39	0.78	0.26	0.80
Avail Cap(c_a), veh/h	682	0		889	0		341	1020	1047	170	2040	894
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.4	0.0	0.0	43.0	0.0	0.0	46.2	19.4	19.4	50.4	22.5	28.9
Incr Delay (d2), s/veh	10.9	0.0	0.0	0.9	0.0	0.0	3.8	0.7	0.7	11.2	0.2	5.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	7.9	0.0	0.0	3.3	0.0	0.0	3.5	4.9	5.0	0.9	2.9	10.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.3	0.0	0.0	43.9	0.0	0.0	50.0	20.1	20.1	61.6	22.7	34.5
LnGrp LOS	D	A		D	A		D	C	C	E	C	C
Approach Vol, veh/h	555			133			745			842		
Approach Delay, s/veh	52.3			43.9			25.4			30.6		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.4	52.0		24.6	15.5	44.9		18.7				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	10.0	60.0		20.0	20.0	60.0		50.0				
Max Q Clear Time (g_c+I), s	13.9	14.0		17.8	9.6	29.7		9.1				
Green Ext Time (p_c), s	0.0	8.6		0.3	0.1	9.2		0.5				

Intersection Summary

HCM 6th Ctrl Delay	35.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary 10: El Portal Dr & Road 20

Existing PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	53	242	173	545	534	49
Future Volume (veh/h)	53	242	173	545	534	49
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	67	0	219	690	676	53
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	86		246	3110	2511	1117
Arrive On Green	0.05	0.00	0.14	0.88	0.71	0.71
Sat Flow, veh/h	1767	1572	1767	3618	3618	1568
Grp Volume(v), veh/h	67	0	219	690	676	53
Grp Sat Flow(s), veh/h/ln	1767	1572	1767	3618	3618	1568
Q Serve(g_s), s	4.9	0.0	15.8	3.7	8.9	1.3
Cycle Q Clear(g_c), s	4.9	0.0	15.8	3.7	8.9	1.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	86		246	3110	2511	1117
V/C Ratio(X)	0.78		0.89	0.22	0.27	0.05
Avail Cap(c_a), veh/h	394		435	3110	2511	1117
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.1	0.0	55.0	1.1	6.7	5.6
Incr Delay (d2), s/veh	5.6	0.0	4.7	0.2	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	7.3	0.6	3.2	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	66.8	0.0	59.7	1.3	6.9	5.6
LnGrp LOS	E		E	A	A	A
Approach Vol, veh/h	67			909	729	
Approach Delay, s/veh	66.8			15.4	6.8	
Approach LOS	E			B	A	
Timer - Assigned Phs	1	2		6	8	
Phs Duration (G+Y+Rc), s	22.1	97.6		119.7	10.3	
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	
Max Green Setting (Gmax), s	32.0	56.0		92.0	29.0	
Max Q Clear Time (g_c+117), s	117.8	10.9		5.7	6.9	
Green Ext Time (p_c), s	0.3	8.4		8.2	0.1	

Intersection Summary

HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection

Intersection Delay, s/veh 10

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	222	47	14	6	29	20	10	87	3	12	72	88
Future Vol, veh/h	222	47	14	6	29	20	10	87	3	12	72	88
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	234	49	15	6	31	21	11	92	3	13	76	93
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.1	8.3	9	9.2
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	78%	11%	7%
Vol Thru, %	87%	17%	53%	42%
Vol Right, %	3%	5%	36%	51%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	283	55	172
LT Vol	10	222	6	12
Through Vol	87	47	29	72
RT Vol	3	14	20	88
Lane Flow Rate	105	298	58	181
Geometry Grp	1	1	1	1
Degree of Util (X)	0.148	0.4	0.078	0.235
Departure Headway (Hd)	5.056	4.832	4.821	4.672
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	704	742	736	764
Service Time	3.121	2.887	2.893	2.729
HCM Lane V/C Ratio	0.149	0.402	0.079	0.237
HCM Control Delay	9	11.1	8.3	9.2
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.5	1.9	0.3	0.9

HCM 6th Signalized Intersection Summary 12: El Portal Dr & Glenlock St

Existing PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	121	10	0	818	829	167
Future Volume (veh/h)	121	10	0	818	829	167
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	0	1856	1856	1856
Adj Flow Rate, veh/h	126	7	0	852	864	169
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	0	3	3	3
Cap, veh/h	155	9	0	1484	1205	236
Arrive On Green	0.09	0.09	0.00	0.80	0.80	0.80
Sat Flow, veh/h	1652	92	0	1856	1507	295
Grp Volume(v), veh/h	134	0	0	852	0	1033
Grp Sat Flow(s), veh/h/ln	1756	0	0	1856	0	1802
Q Serve(g_s), s	7.1	0.0	0.0	16.2	0.0	25.6
Cycle Q Clear(g_c), s	7.1	0.0	0.0	16.2	0.0	25.6
Prop In Lane	0.94	0.05	0.00			0.16
Lane Grp Cap(c), veh/h	165	0	0	1484	0	1441
V/C Ratio(X)	0.81	0.00	0.00	0.57	0.00	0.72
Avail Cap(c_a), veh/h	312	0	0	1484	0	1441
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.2	0.0	0.0	3.5	0.0	4.5
Incr Delay (d2), s/veh	3.6	0.0	0.0	1.6	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	0.0	4.1	0.0	6.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.8	0.0	0.0	5.2	0.0	7.6
LnGrp LOS	D	A	A	A	A	A
Approach Vol, veh/h	134			852	1033	
Approach Delay, s/veh	45.8			5.2	7.6	
Approach LOS	D			A	A	
Timer - Assigned Phs	2			4		6
Phs Duration (G+Y+Rc), s	82.1			12.9		82.1
Change Period (Y+Rc), s	6.1			4.0		6.1
Max Green Setting (Gmax), s	68.0			16.9		68.0
Max Q Clear Time (g_c+I1), s	18.2			9.1		27.6
Green Ext Time (p_c), s	22.2			0.1		26.7

Intersection Summary

HCM 6th Ctrl Delay	9.1
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

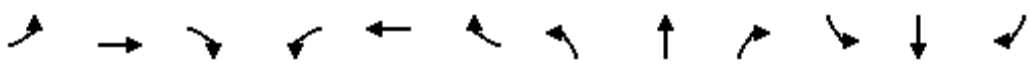
HCM 6th TWSC
13: San Pablo Dam Rd & D Avila Way

Existing PM

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	517	778	2	2	10
Future Vol, veh/h	11	517	778	2	2	10
Conflicting Peds, #/hr	4	0	0	4	3	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	12	581	874	2	2	11
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	880	0	-	0	1197	443
Stage 1	-	-	-	-	879	-
Stage 2	-	-	-	-	318	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	757	-	-	-	177	560
Stage 1	-	-	-	-	364	-
Stage 2	-	-	-	-	707	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	754	-	-	-	173	557
Mov Cap-2 Maneuver	-	-	-	-	173	-
Stage 1	-	-	-	-	357	-
Stage 2	-	-	-	-	704	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.2	0		11.6		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	754	-	-	-	557	
HCM Lane V/C Ratio	0.016	-	-	-	0.02	
HCM Control Delay (s)	9.9	-	-	-	11.6	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

HCM 6th Signalized Intersection Summary 14: Valley View Rd & Morningside Dr

Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	26	1	105	29	614	28	97	336	138
Future Volume (veh/h)	0	0	0	26	1	105	29	614	28	97	336	138
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.84	1.00		0.99	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h				32	1	28	36	758	33	120	415	144
Peak Hour Factor				0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %				3	3	3	3	3	3	3	3	3
Cap, veh/h				689	18	503	67	1104	48	153	944	323
Arrive On Green				0.39	0.39	0.39	0.04	0.32	0.32	0.09	0.37	0.37
Sat Flow, veh/h				1767	46	1292	1767	3439	150	1767	2551	874
Grp Volume(v), veh/h				32	0	29	36	388	403	120	285	274
Grp Sat Flow(s),veh/h/ln				1767	0	1338	1767	1763	1826	1767	1763	1662
Q Serve(g_s), s				0.7	0.0	0.8	1.2	11.1	11.1	3.8	7.0	7.2
Cycle Q Clear(g_c), s				0.7	0.0	0.8	1.2	11.1	11.1	3.8	7.0	7.2
Prop In Lane				1.00		0.97	1.00		0.08	1.00		0.53
Lane Grp Cap(c), veh/h				689	0	521	67	566	586	153	652	615
V/C Ratio(X)				0.05	0.00	0.06	0.54	0.69	0.69	0.78	0.44	0.45
Avail Cap(c_a), veh/h				1222	0	925	611	1219	1263	611	1219	1149
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				11.0	0.0	11.0	27.3	17.1	17.1	25.9	13.7	13.7
Incr Delay (d2), s/veh				0.0	0.0	0.0	2.5	1.5	1.4	3.3	0.5	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.2	0.0	0.2	0.5	4.2	4.4	1.7	2.5	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				11.0	0.0	11.0	29.8	18.6	18.5	29.2	14.2	14.3
LnGrp LOS				B	A	B	C	B	B	C	B	B
Approach Vol, veh/h					61			827			679	
Approach Delay, s/veh					11.0			19.0			16.8	
Approach LOS					B			B			B	
Timer - Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	8.5	22.8			5.7	25.6		26.5				
Change Period (Y+Rc), s	3.5	* 4.2			3.5	* 4.2		4.0				
Max Green Setting (Gmax), s	20.0	* 40			20.0	* 40		40.0				
Max Q Clear Time (g_c+I1), s	5.8	13.1			3.2	9.2		2.8				
Green Ext Time (p_c), s	0.0	5.5			0.0	3.8		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				17.8								
HCM 6th LOS				B								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary 15: Sobrante Ave & Valley View Rd

Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	529	13	98	690	10	16	29	207	4	10	25
Future Volume (veh/h)	34	529	13	98	690	10	16	29	207	4	10	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	38	594	0	110	775	11	18	33	109	4	11	2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	44	1255		142	1464	21	24	44	146	6	15	3
Arrive On Green	0.02	0.36	0.00	0.08	0.41	0.41	0.13	0.13	0.13	0.01	0.01	0.01
Sat Flow, veh/h	1767	3618	0	1767	3558	51	185	339	1119	422	1161	211
Grp Volume(v), veh/h	38	594	0	110	384	402	160	0	0	17	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	0	1767	1763	1846	1642	0	0	1795	0	0
Q Serve(g_s), s	0.9	5.4	0.0	2.5	6.8	6.8	3.9	0.0	0.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	0.9	5.4	0.0	2.5	6.8	6.8	3.9	0.0	0.0	0.4	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.03	0.11		0.68	0.24		0.12
Lane Grp Cap(c), veh/h	44	1255		142	725	759	215	0	0	24	0	0
V/C Ratio(X)	0.86	0.47		0.77	0.53	0.53	0.74	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	848	4229		848	2115	2215	788	0	0	861	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.2	10.4	0.0	18.8	9.2	9.2	17.4	0.0	0.0	20.5	0.0	0.0
Incr Delay (d2), s/veh	16.3	0.4	0.0	3.4	0.9	0.8	1.9	0.0	0.0	14.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.6	0.0	1.0	2.0	2.1	1.4	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	10.8	0.0	22.2	10.1	10.1	19.4	0.0	0.0	34.8	0.0	0.0
LnGrp LOS	D	B		C	B	B	B	A	A	C	A	A
Approach Vol, veh/h	632			896			160			17		
Approach Delay, s/veh	12.3			11.6			19.4			34.8		
Approach LOS	B			B			B			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	20.3		4.5	5.0	22.6		9.5				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	20.0	50.0		20.0	20.0	50.0		20.0				
Max Q Clear Time (g_c+I), s	14.5	7.4		2.4	2.9	8.8		5.9				
Green Ext Time (p_c), s	0.1	6.5		0.0	0.0	8.3		0.5				

Intersection Summary

HCM 6th Ctrl Delay 12.8

HCM 6th LOS B

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary 16: Appian Way & Allview Ave

Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Traffic Volume (veh/h)	94	0	8	0	0	1	16	1103	0	1	775	78
Future Volume (veh/h)	94	0	8	0	0	1	16	1103	0	1	775	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.94	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	99	0	0	0	0	1	17	1161	0	1	816	82
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	132	0	0	0	0	13	19	1286	0	2	1130	114
Arrive On Green	0.07	0.00	0.00	0.00	0.00	0.01	0.01	0.69	0.00	0.00	0.68	0.68
Sat Flow, veh/h	1767	0	0	0	0	1480	1767	1856	0	1767	1655	166
Grp Volume(v), veh/h	99	0	0	0	0	1	17	1161	0	1	0	898
Grp Sat Flow(s),veh/h/ln	1767	0	0	0	0	1480	1767	1856	0	1767	0	1821
Q Serve(g_s), s	4.3	0.0	0.0	0.0	0.0	0.1	0.8	40.2	0.0	0.0	0.0	24.2
Cycle Q Clear(g_c), s	4.3	0.0	0.0	0.0	0.0	0.1	0.8	40.2	0.0	0.0	0.0	24.2
Prop In Lane	1.00		0.00	0.00		1.00	1.00		0.00	1.00		0.09
Lane Grp Cap(c), veh/h	132	0	0	0	0	13	19	1286	0	2	0	1243
V/C Ratio(X)	0.75	0.00	0.00	0.00	0.00	0.08	0.88	0.90	0.00	0.44	0.00	0.72
Avail Cap(c_a), veh/h	676	0	0	0	0	566	676	1420	0	676	0	1394
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.6	0.0	0.0	0.0	0.0	38.6	38.7	9.9	0.0	39.2	0.0	7.8
Incr Delay (d2), s/veh	3.2	0.0	0.0	0.0	0.0	1.0	34.1	8.2	0.0	43.6	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	0.0	0.0	0.0	0.5	14.0	0.0	0.0	0.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.7	0.0	0.0	0.0	0.0	39.6	72.9	18.1	0.0	82.7	0.0	9.7
LnGrp LOS	D	A	A	A	A	D	E	B	A	F	A	A
Approach Vol, veh/h	99			1			1178			899		
Approach Delay, s/veh	38.7			39.6			18.9			9.8		
Approach LOS	D			D			B			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.0	59.8		9.9	4.9	59.0		4.7				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	30.0	60.0		30.0	30.0	60.0		30.0				
Max Q Clear Time (g_c+I), s	12.0	42.2		6.3	2.8	26.2		2.1				
Green Ext Time (p_c), s	0.0	12.1		0.3	0.0	12.1		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	16.0											
HCM 6th LOS	B											

HCM 6th Signalized Intersection Summary 17: Appian Way & EB I-80 Off-Ramp/EB I-80 On-Ramp

Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	25	98	0	0	0	0	849	1087	0	979	224
Future Volume (veh/h)	330	25	98	0	0	0	0	849	1087	0	979	224
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	351	0	25				0	721	959	0	989	0
Peak Hour Factor	0.99	0.99	0.99				0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	3	3	3				0	3	3	0	3	3
Cap, veh/h	444	0	198				0	1389	2354	0	2639	
Arrive On Green	0.13	0.00	0.13				0.00	0.75	0.75	0.00	1.00	0.00
Sat Flow, veh/h	3534	0	1572				0	1856	3145	0	3711	0
Grp Volume(v), veh/h	351	0	25				0	721	959	0	989	0
Grp Sat Flow(s),veh/h/ln	1767	0	1572				0	1856	1572	0	1763	0
Q Serve(g_s), s	6.7	0.0	1.0				0.0	11.2	7.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.7	0.0	1.0				0.0	11.2	7.7	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	444	0	198				0	1389	2354	0	2639	
V/C Ratio(X)	0.79	0.00	0.13				0.00	0.52	0.41	0.00	0.37	
Avail Cap(c_a), veh/h	1262	0	562				0	1389	2354	0	2639	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.00	0.49	0.00
Uniform Delay (d), s/veh	29.7	0.0	27.2				0.0	3.6	3.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.1				0.0	1.4	0.5	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.4				0.0	2.6	1.4	0.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	0.0	27.3				0.0	5.0	3.7	0.0	0.2	0.0
LnGrp LOS	C	A	C				A	A	A	A	A	
Approach Vol, veh/h	376						1680			989		
Approach Delay, s/veh	30.7						4.3			0.2		
Approach LOS	C						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	56.5			13.5			56.5					
Change Period (Y+Rc), s	4.1			* 4.7			4.1					
Max Green Setting (Gmax), s	36.2			* 25			36.2					
Max Q Clear Time (g_c+I1), s	13.2			8.7			2.0					
Green Ext Time (p_c), s	0.9			0.1			1.4					

Intersection Summary

HCM 6th Ctrl Delay	6.2
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary 18: Appian Way & WB I-80 On-Ramp/WB I-80 Off-Ramp

Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	515	3	315	236	943	0	0	794	524
Future Volume (veh/h)	0	0	0	515	3	315	236	943	0	0	794	524
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				629	0	160	254	1014	0	0	854	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				3	3	3	3	3	0	0	3	3
Cap, veh/h				673	0	299	276	2658	0	0	2014	
Arrive On Green				0.19	0.00	0.19	0.16	0.75	0.00	0.00	0.57	0.00
Sat Flow, veh/h				3534	0	1572	1767	3618	0	0	3711	0
Grp Volume(v), veh/h				629	0	160	254	1014	0	0	854	0
Grp Sat Flow(s),veh/h/ln				1767	0	1572	1767	1763	0	0	1763	0
Q Serve(g_s), s				24.5	0.0	12.8	19.8	13.9	0.0	0.0	19.2	0.0
Cycle Q Clear(g_c), s				24.5	0.0	12.8	19.8	13.9	0.0	0.0	19.2	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				673	0	299	276	2658	0	0	2014	
V/C Ratio(X)				0.93	0.00	0.53	0.92	0.38	0.00	0.00	0.42	
Avail Cap(c_a), veh/h				1161	0	517	467	2658	0	0	2014	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	0.00	1.00	0.78	0.78	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				55.8	0.0	51.1	58.2	6.0	0.0	0.0	17.0	0.0
Incr Delay (d2), s/veh				5.1	0.0	0.6	7.7	0.3	0.0	0.0	0.7	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				11.3	0.0	5.1	9.4	4.7	0.0	0.0	7.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				60.9	0.0	51.6	65.9	6.3	0.0	0.0	17.6	0.0
LnGrp LOS				E	A	D	E	A	A	A	B	
Approach Vol, veh/h						789		1268			854	
Approach Delay, s/veh						59.0		18.2			17.6	
Approach LOS						E		B			B	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		109.6			25.6	84.1		30.4				
Change Period (Y+Rc), s		4.1			3.7	4.1		3.7				
Max Green Setting (Gmax), s		86.2			37.0	45.5		46.0				
Max Q Clear Time (g_c+I1), s		15.9			21.8	21.2		26.5				
Green Ext Time (p_c), s		1.4			0.1	1.2		0.1				

Intersection Summary

HCM 6th Ctrl Delay	29.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

1: Valley View Rd & Amend Rd

AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	55	97	341	65	65	487
Future Volume (veh/h)	55	97	341	65	65	487
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	65	27	406	52	77	580
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	309	275	968	123	219	1913
Arrive On Green	0.17	0.17	0.31	0.31	0.12	0.54
Sat Flow, veh/h	1767	1572	3230	399	1767	3618
Grp Volume(v), veh/h	65	27	227	231	77	580
Grp Sat Flow(s),veh/h/ln	1767	1572	1763	1774	1767	1763
Q Serve(g_s), s	1.0	0.5	3.3	3.3	1.3	2.9
Cycle Q Clear(g_c), s	1.0	0.5	3.3	3.3	1.3	2.9
Prop In Lane	1.00	1.00		0.22	1.00	
Lane Grp Cap(c), veh/h	309	275	544	547	219	1913
V/C Ratio(X)	0.21	0.10	0.42	0.42	0.35	0.30
Avail Cap(c_a), veh/h	832	741	2214	2228	777	4428
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	11.0	8.7	8.8	12.8	4.0
Incr Delay (d2), s/veh	0.1	0.1	0.7	0.7	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	1.0	1.0	0.4	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.4	11.1	9.5	9.5	13.1	4.1
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	92		458			657
Approach Delay, s/veh	11.3		9.5			5.2
Approach LOS	B		A			A
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	7.5	14.3		10.1		21.8
Change Period (Y+Rc), s	3.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	14.0	40.0		15.0		40.0
Max Q Clear Time (g_c+I1), s	3.3	5.3		3.0		4.9
Green Ext Time (p_c), s	0.1	4.4		0.1		6.3
Intersection Summary						
HCM 6th Ctrl Delay			7.3			
HCM 6th LOS			A			
Notes						
User approved pedestrian interval to be less than phase max green.						

HCM 6th Signalized Intersection Summary

2: Valley View Rd & San Pablo Dam Rd

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	492	12	6	279	107	37	20	7	311	11	224
Future Volume (veh/h)	193	492	12	6	279	107	37	20	7	311	11	224
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	212	541	12	7	307	0	41	22	6	342	12	99
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	270	1241	28	7	717		178	79	13	555	14	563
Arrive On Green	0.15	0.35	0.35	0.00	0.20	0.00	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1767	3526	78	1767	3526	1572	172	221	37	1143	40	1569
Grp Volume(v), veh/h	212	270	283	7	307	0	69	0	0	354	0	99
Grp Sat Flow(s),veh/h/ln	1767	1763	1841	1767	1763	1572	430	0	0	1183	0	1569
Q Serve(g_s), s	5.7	5.8	5.8	0.2	3.7	0.0	0.6	0.0	0.0	0.0	0.0	2.1
Cycle Q Clear(g_c), s	5.7	5.8	5.8	0.2	3.7	0.0	14.8	0.0	0.0	14.1	0.0	2.1
Prop In Lane	1.00		0.04	1.00		1.00	0.59		0.09	0.97		1.00
Lane Grp Cap(c), veh/h	270	620	648	7	717		271	0	0	569	0	563
V/C Ratio(X)	0.79	0.44	0.44	0.97	0.43		0.25	0.00	0.00	0.62	0.00	0.18
Avail Cap(c_a), veh/h	1078	2151	2247	1078	4302		632	0	0	916	0	957
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.1	12.2	12.2	24.5	17.1	0.0	12.2	0.0	0.0	14.6	0.0	10.8
Incr Delay (d2), s/veh	1.9	1.0	1.0	87.6	0.9	0.0	0.2	0.0	0.0	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	1.9	2.0	0.2	1.4	0.0	0.5	0.0	0.0	3.1	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.0	13.2	13.2	112.1	18.0	0.0	12.4	0.0	0.0	15.0	0.0	10.8
LnGrp LOS	C	B	B	F	B		B	A	A	B	A	B
Approach Vol, veh/h	765			314			69			453		
Approach Delay, s/veh	15.6			20.1			12.4			14.1		
Approach LOS	B			C			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.2	23.3		21.7	11.5	16.0		21.7				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	30.0	60.0		30.0	30.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.2	7.8		16.8	7.7	5.7		16.1				
Green Ext Time (p_c), s	0.0	7.3		0.1	0.3	4.1		1.4				

Intersection Summary

HCM 6th Ctrl Delay 15.9

HCM 6th LOS B

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

3: La Colina Rd/Appian Way & San Pablo Dam Rd

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	879	19	15	936	137	24	4	26	157	11	385
Future Volume (veh/h)	221	879	19	15	936	137	24	4	26	157	11	385
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	240	955	20	16	1017	142	26	4	2	171	12	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	301	2445	51	19	1911	267	41	6	3	206	14	333
Arrive On Green	0.09	0.69	0.69	0.01	0.62	0.62	0.03	0.03	0.03	0.12	0.12	0.12
Sat Flow, veh/h	3428	3530	74	1767	3106	433	1431	220	110	1656	116	1569
Grp Volume(v), veh/h	240	477	498	16	577	582	32	0	0	183	0	113
Grp Sat Flow(s),veh/h/ln	1714	1763	1841	1767	1763	1777	1761	0	0	1773	0	1569
Q Serve(g_s), s	8.4	13.9	13.9	1.1	22.8	22.9	2.2	0.0	0.0	12.3	0.0	7.5
Cycle Q Clear(g_c), s	8.4	13.9	13.9	1.1	22.8	22.9	2.2	0.0	0.0	12.3	0.0	7.5
Prop In Lane	1.00		0.04	1.00		0.24	0.81		0.06	0.93		1.00
Lane Grp Cap(c), veh/h	301	1221	1275	19	1085	1093	51	0	0	221	0	333
V/C Ratio(X)	0.80	0.39	0.39	0.85	0.53	0.53	0.63	0.00	0.00	0.83	0.00	0.34
Avail Cap(c_a), veh/h	590	1221	1275	145	1085	1093	339	0	0	436	0	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.6	7.9	7.9	60.3	13.4	13.4	58.6	0.0	0.0	52.1	0.0	40.8
Incr Delay (d2), s/veh	1.8	0.9	0.9	30.0	1.9	1.9	4.7	0.0	0.0	3.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	5.4	5.6	0.7	9.5	9.6	1.1	0.0	0.0	5.6	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.4	8.8	8.8	90.3	15.3	15.3	63.3	0.0	0.0	55.2	0.0	41.0
LnGrp LOS	E	A	A	F	B	B	E	A	A	E	A	D
Approach Vol, veh/h	1215				1175				32		296	
Approach Delay, s/veh	18.2				16.3				63.3		49.8	
Approach LOS	B				B				E		D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	90.0		7.5	14.7	80.6		19.2				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	10.0	41.0		23.5	21.0	30.0		30.0				
Max Q Clear Time (g_c+I1), s	3.1	15.9		4.2	10.4	24.9		14.3				
Green Ext Time (p_c), s	0.0	10.2		0.1	0.3	3.8		0.7				

Intersection Summary

HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary

4: San Pablo Dam Rd & El Portal Dr

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	518	15	9	768	454	10	6	2	582	31	89
Future Volume (veh/h)	71	518	15	9	768	454	10	6	2	582	31	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	76	551	15	10	817	428	11	6	0	722	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	97	2104	57	11	1225	636	34	19	0	781	410	0
Arrive On Green	0.05	0.60	0.60	0.01	0.55	0.55	0.03	0.03	0.00	0.22	0.00	0.00
Sat Flow, veh/h	1767	3506	95	1767	2220	1154	1163	634	0	3534	1856	0
Grp Volume(v), veh/h	76	277	289	10	647	598	17	0	0	722	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1838	1767	1763	1611	1797	0	0	1767	1856	0
Q Serve(g_s), s	5.2	9.1	9.1	0.7	31.7	32.3	1.1	0.0	0.0	24.4	0.0	0.0
Cycle Q Clear(g_c), s	5.2	9.1	9.1	0.7	31.7	32.3	1.1	0.0	0.0	24.4	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.72	0.65		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	97	1058	1103	11	972	889	52	0	0	781	410	0
V/C Ratio(X)	0.79	0.26	0.26	0.89	0.67	0.67	0.32	0.00	0.00	0.92	0.00	0.00
Avail Cap(c_a), veh/h	217	1058	1103	217	972	889	346	0	0	840	441	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	57.0	11.6	11.6	60.6	19.4	19.5	58.0	0.0	0.0	46.5	0.0	0.0
Incr Delay (d2), s/veh	5.2	0.6	0.6	51.6	3.6	4.0	1.3	0.0	0.0	14.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	3.8	3.9	0.5	13.8	12.9	0.5	0.0	0.0	12.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.2	12.2	12.2	112.2	23.0	23.5	59.4	0.0	0.0	61.1	0.0	0.0
LnGrp LOS	E	B	B	F	C	C	E	A	A	E	A	A
Approach Vol, veh/h	642			1255			17			722		
Approach Delay, s/veh	18.1			24.0			59.4			61.1		
Approach LOS	B			C			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.8	78.7		7.6	10.7	72.8		31.0				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	15.0	37.0		23.5	15.0	37.0		29.0				
Max Q Clear Time (g_c+I1), s	2.7	11.1		3.1	7.2	34.3		26.4				
Green Ext Time (p_c), s	0.0	5.4		0.0	0.0	2.2		0.6				
Intersection Summary												
HCM 6th Ctrl Delay	32.9											
HCM 6th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

HCM Signalized Intersection Capacity Analysis

5: I-80 EB Off Ramp/I-80 EB On Ramp & Amador St & San Pablo Dam Rd

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	NBR2	NWL	NWR	NWR2
Lane Configurations												
Traffic Volume (vph)	260	160	106	827	24	305	0	298	7	36	211	163
Future Volume (vph)	260	160	106	827	24	305	0	298	7	36	211	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Lane Util. Factor		0.95		0.95	1.00	0.95	0.91	0.95		1.00		0.95
Frpb, ped/bikes		0.99		1.00	0.98	1.00	1.00	1.00		1.00		1.00
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00		1.00		1.00
Frt		0.97		1.00	0.85	1.00	0.92	0.85		0.87		0.85
Flt Protected		0.98		1.00	1.00	0.95	0.98	1.00		0.99		1.00
Satd. Flow (prot)		3289		3505	1531	1665	1508	1490		1595		1490
Flt Permitted		0.98		1.00	1.00	0.95	0.98	1.00		0.99		1.00
Satd. Flow (perm)		3289		3505	1531	1665	1508	1490		1595		1490
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	277	170	113	880	26	324	0	317	7	38	224	173
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	52	0	132
Lane Group Flow (vph)	0	560	0	880	8	224	217	207	0	227	0	24
Confl. Peds. (#/hr)			6									
Confl. Bikes (#/hr)					3							
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA		NA	Perm	Split	NA	custom		Prot		Perm
Protected Phases	1 8	1 8		2		7	7	2 7		4		
Permitted Phases					2							4
Actuated Green, G (s)		43.2		46.5	46.5	24.8	24.8	71.3		23.1		23.1
Effective Green, g (s)		43.2		46.5	46.5	24.8	24.8	71.3		23.1		23.1
Actuated g/C Ratio		0.29		0.31	0.31	0.17	0.17	0.48		0.15		0.15
Clearance Time (s)				3.0	3.0	3.0	3.0			3.0		3.0
Vehicle Extension (s)				0.2	0.2	0.2	0.2			0.2		0.2
Lane Grp Cap (vph)		949		1089	475	276	249	710		246		230
v/s Ratio Prot		c0.17		c0.25		0.13	c0.14	0.14		c0.14		
v/s Ratio Perm					0.01							0.02
v/c Ratio		0.59		0.81	0.02	0.81	0.87	0.29		0.92		0.10
Uniform Delay, d1		45.6		47.4	35.7	60.1	60.8	23.8		62.4		54.4
Progression Factor		0.75		1.00	1.00	1.00	1.00	1.00		1.00		1.00
Incremental Delay, d2		0.3		4.2	0.0	15.6	25.9	0.1		36.8		0.1
Delay (s)		34.4		51.7	35.7	75.8	86.8	23.9		99.2		54.4
Level of Service		C		D	D	E	F	C		F		D
Approach Delay (s)		34.4		51.2			62.9			83.1		
Approach LOS		C		D			E			F		
Intersection Summary												
HCM 2000 Control Delay			55.9			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			149.6			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			81.8%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

6: I-80 WB On Ramp/I-80 WB Off Ramp & San Pablo Dam Rd

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑					↑	↑	
Traffic Volume (vph)	0	413	311	484	671	0	0	0	0	132	34	475
Future Volume (vph)	0	413	311	484	671	0	0	0	0	132	34	475
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0					3.0	3.0	
Lane Util. Factor		0.95	1.00		0.95					1.00	1.00	
Frpb, ped/bikes		1.00	0.96		1.00					1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00					1.00	1.00	
Frt		1.00	0.85		1.00					1.00	0.86	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		3505	1511		3426					1752	1586	
Flt Permitted		1.00	1.00		0.59					0.95	1.00	
Satd. Flow (perm)		3505	1511		2072					1752	1586	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	430	324	504	699	0	0	0	0	138	35	495
RTOR Reduction (vph)	0	0	280	0	0	0	0	0	0	0	315	0
Lane Group Flow (vph)	0	430	44	0	1203	0	0	0	0	138	215	0
Confl. Peds. (#/hr)			11	11								
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		1		2 7 4	1 2 7 4					8	8	
Permitted Phases			1									
Actuated Green, G (s)		20.1	20.1		120.5					20.1	20.1	
Effective Green, g (s)		20.1	20.1		120.5					20.1	20.1	
Actuated g/C Ratio		0.13	0.13		0.81					0.13	0.13	
Clearance Time (s)		3.0	3.0							3.0	3.0	
Vehicle Extension (s)		0.2	0.2							0.2	0.2	
Lane Grp Cap (vph)		470	203		2577					235	213	
v/s Ratio Prot		c0.12			c0.31					0.08	c0.14	
v/s Ratio Perm			0.03		0.06							
v/c Ratio		0.91	0.21		0.47					0.59	1.01	
Uniform Delay, d1		63.9	57.7		4.5					60.9	64.8	
Progression Factor		1.00	1.00		0.17					1.00	1.00	
Incremental Delay, d2		21.9	0.2		0.0					2.4	64.0	
Delay (s)		85.8	57.9		0.8					63.3	128.7	
Level of Service		F	E		A					E	F	
Approach Delay (s)		73.8			0.8			0.0			115.2	
Approach LOS		E			A			A			F	
Intersection Summary												
HCM 2000 Control Delay			50.9			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			149.6			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			94.1%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

7: I-80 EB Off Ramp/I-80 EB On Ramp & El Portal Dr

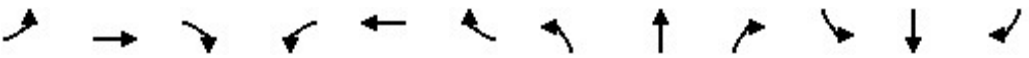
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					 							
Traffic Volume (veh/h)	347	620	0	0	454	174	303	2	202	0	0	0
Future Volume (veh/h)	347	620	0	0	454	174	303	2	202	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	351	626	0	0	459	140	306	2	44			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	373	1335	0	0	1227	371	346	2	310			
Arrive On Green	0.42	1.00	0.00	0.00	0.46	0.46	0.20	0.20	0.20			
Sat Flow, veh/h	1767	1856	0	0	2749	803	1756	11	1572			
Grp Volume(v), veh/h	351	626	0	0	303	296	308	0	44			
Grp Sat Flow(s),veh/h/ln	1767	1856	0	0	1763	1696	1768	0	1572			
Q Serve(g_s), s	19.1	0.0	0.0	0.0	11.2	11.4	16.9	0.0	2.3			
Cycle Q Clear(g_c), s	19.1	0.0	0.0	0.0	11.2	11.4	16.9	0.0	2.3			
Prop In Lane	1.00		0.00	0.00		0.47	0.99		1.00			
Lane Grp Cap(c), veh/h	373	1335	0	0	814	784	349	0	310			
V/C Ratio(X)	0.94	0.47	0.00	0.00	0.37	0.38	0.88	0.00	0.14			
Avail Cap(c_a), veh/h	406	1335	0	0	814	784	477	0	425			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.69	0.69	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	28.3	0.0	0.0	0.0	17.5	17.5	39.0	0.0	33.1			
Incr Delay (d2), s/veh	22.0	0.8	0.0	0.0	1.3	1.4	11.2	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.0	0.3	0.0	0.0	4.8	4.7	8.2	0.0	0.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.3	0.8	0.0	0.0	18.8	18.9	50.2	0.0	33.2			
LnGrp LOS	D	A	A	A	B	B	D	A	C			
Approach Vol, veh/h	977			599			352					
Approach Delay, s/veh	18.6			18.9			48.1					
Approach LOS	B			B			D					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	76.1			25.8			50.3			23.9		
Change Period (Y+Rc), s	4.1			* 4.7			4.1			4.2		
Max Green Setting (Gmax), s	64.7			* 23			36.7			27.0		
Max Q Clear Time (g_c+I1), s	2.0			21.1			13.4			18.9		
Green Ext Time (p_c), s	4.8			0.0			4.1			0.8		
Intersection Summary												
HCM 6th Ctrl Delay			24.1									
HCM 6th LOS			C									
Notes												

HCM 6th Signalized Intersection Summary

8: I-80 WB On Ramp/I-80 WB Off Ramp & El Portal Dr

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑						↖	↗
Traffic Volume (veh/h)	0	689	291	186	575	0	0	0	0	279	12	399
Future Volume (veh/h)	0	689	291	186	575	0	0	0	0	279	12	399
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	1856	1856
Adj Flow Rate, veh/h	0	696	166	188	581	0				282	12	95
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99				0.99	0.99	0.99
Percent Heavy Veh, %	0	3	3	3	3	0				3	3	3
Cap, veh/h	0	1066	892	216	1361	0				311	13	288
Arrive On Green	0.00	0.57	0.57	0.24	1.00	0.00				0.18	0.18	0.18
Sat Flow, veh/h	0	1856	1553	1767	1856	0				1698	72	1572
Grp Volume(v), veh/h	0	696	166	188	581	0				294	0	95
Grp Sat Flow(s),veh/h/ln	0	1856	1553	1767	1856	0				1771	0	1572
Q Serve(g_s), s	0.0	25.6	5.1	10.2	0.0	0.0				16.3	0.0	5.3
Cycle Q Clear(g_c), s	0.0	25.6	5.1	10.2	0.0	0.0				16.3	0.0	5.3
Prop In Lane	0.00		1.00	1.00		0.00				0.96		1.00
Lane Grp Cap(c), veh/h	0	1066	892	216	1361	0				325	0	288
V/C Ratio(X)	0.00	0.65	0.19	0.87	0.43	0.00				0.91	0.00	0.33
Avail Cap(c_a), veh/h	0	1066	892	353	1361	0				354	0	314
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.91	0.91	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.5	10.1	37.0	0.0	0.0				40.0	0.0	35.5
Incr Delay (d2), s/veh	0.0	3.1	0.5	6.3	0.9	0.0				23.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.6	1.7	4.2	0.3	0.0				9.0	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.6	10.6	43.3	0.9	0.0				63.5	0.0	35.7
LnGrp LOS	A	B	B	D	A	A				E	A	D
Approach Vol, veh/h		862			769						389	
Approach Delay, s/veh		16.3			11.3						56.7	
Approach LOS		B			B						E	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	15.9	61.5		22.5		77.5						
Change Period (Y+Rc), s	3.7	4.1		* 4.2		4.1						
Max Green Setting (Gmax), s	20.0	47.7		* 20		71.7						
Max Q Clear Time (g_c+I1), s	12.2	27.6		18.3		2.0						
Green Ext Time (p_c), s	0.0	0.6		0.1		0.5						
Intersection Summary												
HCM 6th Ctrl Delay			22.2									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

9: San Pablo Ave & 23rd Ave/Road 20

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	304	198	80	38	182	70	84	288	75	46	405	457
Future Volume (veh/h)	304	198	80	38	182	70	84	288	75	46	405	457
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	267	289	0	40	194	0	89	306	80	49	431	486
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	301	316		54	262		112	1152	296	63	1373	590
Arrive On Green	0.17	0.17	0.00	0.17	0.17	0.00	0.06	0.42	0.42	0.04	0.39	0.39
Sat Flow, veh/h	1767	1856	1572	314	1525	1572	1767	2759	708	1767	3526	1514
Grp Volume(v), veh/h	267	289	0	234	0	0	89	193	193	49	431	486
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1840	0	1572	1767	1763	1704	1767	1763	1514
Q Serve(g_s), s	17.3	18.0	0.0	14.2	0.0	0.0	5.8	8.4	8.7	3.2	10.0	33.9
Cycle Q Clear(g_c), s	17.3	18.0	0.0	14.2	0.0	0.0	5.8	8.4	8.7	3.2	10.0	33.9
Prop In Lane	1.00		1.00	0.17		1.00	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	301	316		316	0		112	736	712	63	1373	590
V/C Ratio(X)	0.89	0.91		0.74	0.00		0.79	0.26	0.27	0.78	0.31	0.82
Avail Cap(c_a), veh/h	301	316		784	0		301	902	872	151	1803	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	47.8	0.0	46.1	0.0	0.0	54.2	22.4	22.4	56.1	24.9	32.2
Incr Delay (d2), s/veh	24.9	29.1	0.0	1.3	0.0	0.0	4.7	0.4	0.4	7.5	0.3	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	10.9	0.0	6.6	0.0	0.0	2.7	3.5	3.5	1.6	4.2	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.5	76.9	0.0	47.4	0.0	0.0	58.8	22.8	22.9	63.6	25.2	40.0
LnGrp LOS	E	E		D	A		E	C	C	E	C	D
Approach Vol, veh/h	556				234			475			966	
Approach Delay, s/veh	74.8				47.4			29.6			34.6	
Approach LOS	E				D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	55.0		26.0	13.5	51.7		26.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	10.0	60.0		20.0	20.0	60.0		50.0				
Max Q Clear Time (g_c+I1), s	5.2	10.7		20.0	7.8	35.9		16.2				
Green Ext Time (p_c), s	0.0	5.0		0.0	0.1	9.8		1.0				

Intersection Summary

HCM 6th Ctrl Delay 44.9

HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

10: El Portal Dr & Road 20

AM Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	39	272	205	524	501	62
Future Volume (veh/h)	39	272	205	524	501	62
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	44	0	233	595	569	44
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	58		275	2956	2206	960
Arrive On Green	0.03	0.00	0.16	0.84	0.63	0.63
Sat Flow, veh/h	1767	1572	1767	3618	3618	1534
Grp Volume(v), veh/h	44	0	233	595	569	44
Grp Sat Flow(s),veh/h/ln	1767	1572	1767	1763	1763	1534
Q Serve(g_s), s	1.7	0.0	9.0	2.3	5.0	0.8
Cycle Q Clear(g_c), s	1.7	0.0	9.0	2.3	5.0	0.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	58		275	2956	2206	960
V/C Ratio(X)	0.76		0.85	0.20	0.26	0.05
Avail Cap(c_a), veh/h	631		303	2956	2206	960
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	0.0	28.7	1.1	5.8	5.0
Incr Delay (d2), s/veh	7.3	0.0	16.8	0.2	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	4.9	0.1	1.6	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.9	0.0	45.5	1.3	6.1	5.1
LnGrp LOS	D		D	A	A	A
Approach Vol, veh/h	44			828	613	
Approach Delay, s/veh	40.9			13.7	6.1	
Approach LOS	D			B	A	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	14.9	48.8			63.7	6.3
Change Period (Y+Rc), s	4.0	5.0			5.0	4.0
Max Green Setting (Gmax), s	12.0	20.0			36.0	25.0
Max Q Clear Time (g_c+I1), s	11.0	7.0			4.3	3.7
Green Ext Time (p_c), s	0.0	4.3			6.1	0.0
Intersection Summary						
HCM 6th Ctrl Delay			11.4			
HCM 6th LOS			B			
Notes						
User approved pedestrian interval to be less than phase max green.						
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.						

HCM 6th AWSC
11: Fourdham St & Rollingwood Dr

AM Peak Hour

Intersection

Intersection Delay, s/veh 10.7

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	149	22	10	2	41	27	7	119	6	31	108	187
Future Vol, veh/h	149	22	10	2	41	27	7	119	6	31	108	187
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	164	24	11	2	45	30	8	131	7	34	119	205
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.8	9	9.6	11.5
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	82%	3%	10%
Vol Thru, %	90%	12%	59%	33%
Vol Right, %	5%	6%	39%	57%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	132	181	70	326
LT Vol	7	149	2	31
Through Vol	119	22	41	108
RT Vol	6	10	27	187
Lane Flow Rate	145	199	77	358
Geometry Grp	1	1	1	1
Degree of Util (X)	0.206	0.302	0.114	0.454
Departure Headway (Hd)	5.219	5.469	5.327	4.559
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	692	660	676	781
Service Time	3.219	3.469	3.335	2.648
HCM Lane V/C Ratio	0.21	0.302	0.114	0.458
HCM Control Delay	9.6	10.8	9	11.5
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.8	1.3	0.4	2.4

HCM 6th Signalized Intersection Summary

12: El Portal Dr & Glenlock St

AM Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	144	7	0	827	875	98
Future Volume (veh/h)	144	7	0	827	875	98
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	0	1856	1856	1856
Adj Flow Rate, veh/h	148	5	0	853	902	98
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	0	3	3	3
Cap, veh/h	179	6	0	1472	1305	142
Arrive On Green	0.11	0.11	0.00	0.79	0.79	0.79
Sat Flow, veh/h	1692	57	0	1856	1645	179
Grp Volume(v), veh/h	154	0	0	853	0	1000
Grp Sat Flow(s),veh/h/ln	1761	0	0	1856	0	1823
Q Serve(g_s), s	8.6	0.0	0.0	17.6	0.0	25.1
Cycle Q Clear(g_c), s	8.6	0.0	0.0	17.6	0.0	25.1
Prop In Lane	0.96	0.03	0.00			0.10
Lane Grp Cap(c), veh/h	186	0	0	1472	0	1447
V/C Ratio(X)	0.83	0.00	0.00	0.58	0.00	0.69
Avail Cap(c_a), veh/h	333	0	0	1472	0	1447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.8	0.0	0.0	3.9	0.0	4.7
Incr Delay (d2), s/veh	3.6	0.0	0.0	1.7	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	0.0	4.8	0.0	6.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.4	0.0	0.0	5.6	0.0	7.5
LnGrp LOS	D	A	A	A	A	A
Approach Vol, veh/h	154			853	1000	
Approach Delay, s/veh	47.4			5.6	7.5	
Approach LOS	D			A	A	
Timer - Assigned Phs	2			4		6
Phs Duration (G+Y+Rc), s	85.4			14.6		85.4
Change Period (Y+Rc), s	6.1			4.0		6.1
Max Green Setting (Gmax), s	71.0			18.9		71.0
Max Q Clear Time (g_c+I1), s	19.6			10.6		27.1
Green Ext Time (p_c), s	22.5			0.1		26.9
Intersection Summary						
HCM 6th Ctrl Delay			9.7			
HCM 6th LOS			A			

HCM 6th TWSC
13: San Pablo Dam Rd & D Avila Way

AM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	705	549	0	0	10
Future Vol, veh/h	7	705	549	0	0	10
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	8	839	654	0	0	12
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	655	0	-	0	-	328
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.16	-	-	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.23	-	-	-	-	3.33
Pot Cap-1 Maneuver	921	-	-	-	0	665
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	920	-	-	-	-	664
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		10.5		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	920	-	-	-	-	664
HCM Lane V/C Ratio	0.009	-	-	-	-	0.018
HCM Control Delay (s)	8.9	-	-	-	-	10.5
HCM Lane LOS	A	-	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	-	0.1

HCM 6th Signalized Intersection Summary

14: Valley View Rd & Morningside Dr

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	42	23	78	42	619	59	56	469	371
Future Volume (veh/h)	0	0	0	42	23	78	42	619	59	56	469	371
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.92	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h				52	29	18	52	774	70	70	586	377
Peak Hour Factor				0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %				3	3	3	3	3	3	3	3	3
Cap, veh/h				457	267	166	93	1378	125	114	890	572
Arrive On Green				0.26	0.26	0.26	0.05	0.42	0.42	0.06	0.43	0.43
Sat Flow, veh/h				1767	1034	642	1767	3268	296	1767	2054	1321
Grp Volume(v), veh/h				52	0	47	52	417	427	70	503	460
Grp Sat Flow(s),veh/h/ln				1767	0	1676	1767	1763	1801	1767	1763	1612
Q Serve(g_s), s				1.0	0.0	1.0	1.3	8.2	8.2	1.8	10.4	10.4
Cycle Q Clear(g_c), s				1.0	0.0	1.0	1.3	8.2	8.2	1.8	10.4	10.4
Prop In Lane				1.00		0.38	1.00		0.16	1.00		0.82
Lane Grp Cap(c), veh/h				457	0	433	93	743	759	114	763	698
V/C Ratio(X)				0.11	0.00	0.11	0.56	0.56	0.56	0.62	0.66	0.66
Avail Cap(c_a), veh/h				1544	0	1464	772	1540	1574	772	1540	1409
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				13.0	0.0	12.9	21.2	10.0	10.0	20.9	10.3	10.3
Incr Delay (d2), s/veh				0.0	0.0	0.0	1.9	0.7	0.7	2.0	1.0	1.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.4	0.0	0.3	0.5	2.6	2.6	0.7	3.3	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				13.0	0.0	13.0	23.1	10.7	10.7	22.9	11.3	11.4
LnGrp LOS				B	A	B	C	B	B	C	B	B
Approach Vol, veh/h					99			896			1033	
Approach Delay, s/veh					13.0			11.4			12.1	
Approach LOS					B			B			B	
Timer - Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	6.4	23.5			5.9	24.0		15.8				
Change Period (Y+Rc), s	3.5	* 4.2			3.5	* 4.2		4.0				
Max Green Setting (Gmax), s	20.0	* 40			20.0	* 40		40.0				
Max Q Clear Time (g_c+I1), s	3.8	10.2			3.3	12.4		3.0				
Green Ext Time (p_c), s	0.0	6.1			0.0	7.5		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				11.8								
HCM 6th LOS				B								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

15: Sobrante Ave & Valley View Rd

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	736	11	114	763	8	7	20	374	14	30	23
Future Volume (veh/h)	24	736	11	114	763	8	7	20	374	14	30	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	30	920	0	142	954	10	9	25	63	18	38	14
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	35	1549		184	1872	20	12	34	86	23	49	18
Arrive On Green	0.02	0.44	0.00	0.10	0.52	0.52	0.08	0.08	0.08	0.05	0.05	0.05
Sat Flow, veh/h	1767	3618	0	1767	3574	37	153	424	1069	455	960	354
Grp Volume(v), veh/h	30	920	0	142	471	493	97	0	0	70	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	0	1767	1763	1849	1646	0	0	1769	0	0
Q Serve(g_s), s	0.9	10.7	0.0	4.2	9.3	9.3	3.1	0.0	0.0	2.1	0.0	0.0
Cycle Q Clear(g_c), s	0.9	10.7	0.0	4.2	9.3	9.3	3.1	0.0	0.0	2.1	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.02	0.09		0.65	0.26		0.20
Lane Grp Cap(c), veh/h	35	1549		184	923	968	132	0	0	91	0	0
V/C Ratio(X)	0.86	0.59		0.77	0.51	0.51	0.73	0.00	0.00	0.77	0.00	0.00
Avail Cap(c_a), veh/h	656	3271		656	1636	1715	611	0	0	657	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.3	11.5	0.0	23.5	8.3	8.3	24.2	0.0	0.0	25.2	0.0	0.0
Incr Delay (d2), s/veh	19.8	0.5	0.0	2.6	0.6	0.6	2.9	0.0	0.0	5.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.4	0.0	1.7	2.7	2.9	1.2	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.2	12.0	0.0	26.1	9.0	8.9	27.1	0.0	0.0	30.3	0.0	0.0
LnGrp LOS	D	B		C	A	A	C	A	A	C	A	A
Approach Vol, veh/h	950			1106			97			70		
Approach Delay, s/veh	13.1			11.2			27.1			30.3		
Approach LOS	B			B			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	29.2		6.8	5.1	33.7		8.3				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	20.0	50.0		20.0	20.0	50.0		20.0				
Max Q Clear Time (g_c+I1), s	6.2	12.7		4.1	2.9	11.3		5.1				
Green Ext Time (p_c), s	0.1	11.0		0.2	0.0	10.8		0.2				

Intersection Summary

HCM 6th Ctrl Delay 13.3

HCM 6th LOS B

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

16: Appian Way & Allview Ave

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Traffic Volume (veh/h)	123	0	29	0	0	0	85	809	0	0	821	108
Future Volume (veh/h)	123	0	29	0	0	0	85	809	0	0	821	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	135	0	0	0	0	0	93	889	0	0	902	117
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	178	0	0	0	3	0	121	1429	0	2	1042	135
Arrive On Green	0.10	0.00	0.00	0.00	0.00	0.00	0.07	0.77	0.00	0.00	0.65	0.65
Sat Flow, veh/h	1758	0	0	0	1856	0	1767	1856	0	1767	1609	209
Grp Volume(v), veh/h	135	0	0	0	0	0	93	889	0	0	0	1019
Grp Sat Flow(s),veh/h/ln	1758	0	0	0	1856	0	1767	1856	0	1767	0	1817
Q Serve(g_s), s	5.5	0.0	0.0	0.0	0.0	0.0	3.8	15.7	0.0	0.0	0.0	33.3
Cycle Q Clear(g_c), s	5.5	0.0	0.0	0.0	0.0	0.0	3.8	15.7	0.0	0.0	0.0	33.3
Prop In Lane	1.00		0.00	0.00		0.00	1.00		0.00	1.00		0.11
Lane Grp Cap(c), veh/h	178	0	0	0	3	0	121	1429	0	2	0	1178
V/C Ratio(X)	0.76	0.00	0.00	0.00	0.00	0.00	0.77	0.62	0.00	0.00	0.00	0.87
Avail Cap(c_a), veh/h	712	0	0	0	751	0	715	1502	0	715	0	1471
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	32.4	0.0	0.0	0.0	0.0	0.0	33.9	3.8	0.0	0.0	0.0	10.4
Incr Delay (d2), s/veh	2.5	0.0	0.0	0.0	0.0	0.0	3.9	0.9	0.0	0.0	0.0	5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.0	0.0	0.0	0.0	1.7	3.1	0.0	0.0	0.0	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	0.0	0.0	0.0	0.0	0.0	37.8	4.6	0.0	0.0	0.0	15.6
LnGrp LOS	C	A	A	A	A	A	D	A	A	A	A	B
Approach Vol, veh/h	135			0			982			1019		
Approach Delay, s/veh	34.9			0.0			7.8			15.6		
Approach LOS	C						A			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	62.6		11.5	9.1	53.5		0.0				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	30.0	60.0		30.0	30.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	0.0	17.7		7.5	5.8	35.3		0.0				
Green Ext Time (p_c), s	0.0	12.6		0.5	0.1	12.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	13.2											
HCM 6th LOS	B											

HCM 6th Signalized Intersection Summary

17: Appian Way & EB I-80 Off-Ramp/EB I-80 On-Ramp

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	459	4	138	0	0	0	0	545	516	0	1080	399
Future Volume (veh/h)	459	4	138	0	0	0	0	545	516	0	1080	399
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	543	0	69				0	715	339	0	1200	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				0	3	3	0	3	3
Cap, veh/h	639	0	284				0	2538	1074	0	2411	
Arrive On Green	0.18	0.00	0.18				0.00	0.68	0.68	0.00	1.00	0.00
Sat Flow, veh/h	3534	0	1572				0	3711	1571	0	3711	0
Grp Volume(v), veh/h	543	0	69				0	715	339	0	1200	0
Grp Sat Flow(s),veh/h/ln	1767	0	1572				0	1856	1571	0	1763	0
Q Serve(g_s), s	9.7	0.0	2.4				0.0	4.9	5.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.7	0.0	2.4				0.0	4.9	5.7	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	639	0	284				0	2538	1074	0	2411	
V/C Ratio(X)	0.85	0.00	0.24				0.00	0.28	0.32	0.00	0.50	
Avail Cap(c_a), veh/h	1087	0	484				0	2538	1074	0	2411	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.00	0.09	0.00
Uniform Delay (d), s/veh	25.8	0.0	22.8				0.0	4.0	4.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.2				0.0	0.3	0.8	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	0.9				0.0	1.2	1.4	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.0	0.0	23.0				0.0	4.3	4.9	0.0	0.1	0.0
LnGrp LOS	C	A	C				A	A	A	A	A	
Approach Vol, veh/h	612						1054			1200		
Approach Delay, s/veh	26.6						4.5			0.1		
Approach LOS	C						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	48.5			16.5			48.5					
Change Period (Y+Rc), s	4.1			* 4.7			4.1					
Max Green Setting (Gmax), s	36.2			* 20			36.2					
Max Q Clear Time (g_c+I1), s	7.7			11.7			2.0					
Green Ext Time (p_c), s	0.8			0.1			1.8					
Intersection Summary												
HCM 6th Ctrl Delay	7.4											
HCM 6th LOS	A											
Notes												
User approved volume balancing among the lanes for turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary

18: Appian Way & WB I-80 On-Ramp/WB I-80 Off-Ramp

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	538	10	385	188	824	0	0	936	713
Future Volume (veh/h)	0	0	0	538	10	385	188	824	0	0	936	713
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				721	0	215	216	947	0	0	1076	0
Peak Hour Factor				0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %				3	3	3	3	3	0	0	3	3
Cap, veh/h				767	0	340	240	2549	0	0	1969	
Arrive On Green				0.22	0.00	0.22	0.14	0.72	0.00	0.00	0.56	0.00
Sat Flow, veh/h				3534	0	1568	1767	3618	0	0	3711	0
Grp Volume(v), veh/h				721	0	215	216	947	0	0	1076	0
Grp Sat Flow(s),veh/h/ln				1767	0	1568	1767	1763	0	0	1763	0
Q Serve(g_s), s				26.1	0.0	16.2	15.6	13.2	0.0	0.0	25.2	0.0
Cycle Q Clear(g_c), s				26.1	0.0	16.2	15.6	13.2	0.0	0.0	25.2	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				767	0	340	240	2549	0	0	1969	
V/C Ratio(X)				0.94	0.00	0.63	0.90	0.37	0.00	0.00	0.55	
Avail Cap(c_a), veh/h				1087	0	483	353	2549	0	0	1969	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.88	0.88	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				50.1	0.0	46.2	55.3	6.8	0.0	0.0	18.2	0.0
Incr Delay (d2), s/veh				10.1	0.0	0.7	13.0	0.4	0.0	0.0	1.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				12.5	0.0	6.3	7.8	4.6	0.0	0.0	10.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				60.2	0.0	46.9	68.3	7.2	0.0	0.0	19.3	0.0
LnGrp LOS				E	A	D	E	A	A	A	B	
Approach Vol, veh/h					936			1163			1076	
Approach Delay, s/veh					57.1			18.5			19.3	
Approach LOS					E			B			B	
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	98.1			21.4			76.7			31.9		
Change Period (Y+Rc), s	4.1			3.7			4.1			3.7		
Max Green Setting (Gmax), s	82.2			26.0			52.5			40.0		
Max Q Clear Time (g_c+I1), s	15.2			17.6			27.2			28.1		
Green Ext Time (p_c), s	1.3			0.0			1.5			0.1		
Intersection Summary												
HCM 6th Ctrl Delay				30.2								
HCM 6th LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary

1: Valley View Rd & Amend Rd

PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	58	81	398	68	83	388
Future Volume (veh/h)	58	81	398	68	83	388
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	64	20	442	56	92	431
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	288	257	996	126	245	1981
Arrive On Green	0.16	0.16	0.32	0.32	0.14	0.56
Sat Flow, veh/h	1767	1572	3243	397	1767	3618
Grp Volume(v), veh/h	64	20	246	252	92	431
Grp Sat Flow(s),veh/h/ln	1767	1572	1763	1784	1767	1763
Q Serve(g_s), s	1.0	0.4	3.6	3.7	1.5	2.0
Cycle Q Clear(g_c), s	1.0	0.4	3.6	3.7	1.5	2.0
Prop In Lane	1.00	1.00		0.22	1.00	
Lane Grp Cap(c), veh/h	288	257	558	564	245	1981
V/C Ratio(X)	0.22	0.08	0.44	0.45	0.38	0.22
Avail Cap(c_a), veh/h	810	721	2155	2181	756	4309
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.9	11.6	8.9	8.9	12.8	3.6
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.8	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	1.1	1.1	0.5	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.0	11.7	9.7	9.7	13.2	3.7
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	84		498			523
Approach Delay, s/veh	11.9		9.7			5.3
Approach LOS	B		A			A
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	8.0	14.9		9.8		22.9
Change Period (Y+Rc), s	3.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	14.0	40.0		15.0		40.0
Max Q Clear Time (g_c+I1), s	3.5	5.7		3.0		4.0
Green Ext Time (p_c), s	0.1	4.8		0.1		4.5
Intersection Summary						
HCM 6th Ctrl Delay			7.8			
HCM 6th LOS			A			
Notes						
User approved pedestrian interval to be less than phase max green.						

HCM 6th Signalized Intersection Summary

2: Valley View Rd & San Pablo Dam Rd

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	370	23	9	603	407	20	5	7	143	22	108
Future Volume (veh/h)	149	370	23	9	603	407	20	5	7	143	22	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	157	389	21	9	635	0	21	5	1	151	23	23
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	205	1748	94	9	1422		217	39	4	375	33	238
Arrive On Green	0.12	0.51	0.51	0.01	0.40	0.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1767	3400	183	1767	3526	1572	437	259	27	1429	218	1566
Grp Volume(v), veh/h	157	201	209	9	635	0	27	0	0	174	0	23
Grp Sat Flow(s),veh/h/ln	1767	1763	1820	1767	1763	1572	723	0	0	1647	0	1566
Q Serve(g_s), s	3.7	2.7	2.7	0.2	5.6	0.0	0.1	0.0	0.0	0.0	0.0	0.5
Cycle Q Clear(g_c), s	3.7	2.7	2.7	0.2	5.6	0.0	4.0	0.0	0.0	3.9	0.0	0.5
Prop In Lane	1.00		0.10	1.00		1.00	0.78		0.04	0.87		1.00
Lane Grp Cap(c), veh/h	205	906	936	9	1422		260	0	0	408	0	238
V/C Ratio(X)	0.77	0.22	0.22	0.97	0.45		0.10	0.00	0.00	0.43	0.00	0.10
Avail Cap(c_a), veh/h	1244	2481	2561	1244	4962		1046	0	0	1204	0	1102
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.3	5.7	5.7	21.2	9.3	0.0	15.7	0.0	0.0	17.0	0.0	15.6
Incr Delay (d2), s/veh	2.2	0.3	0.3	75.1	0.5	0.0	0.1	0.0	0.0	0.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.6	0.6	0.3	1.5	0.0	0.2	0.0	0.0	1.4	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.5	5.9	5.9	96.3	9.7	0.0	15.7	0.0	0.0	17.3	0.0	15.6
LnGrp LOS	C	A	A	F	A		B	A	A	B	A	B
Approach Vol, veh/h	567			644			27			197		
Approach Delay, s/veh	10.0			10.9			15.7			17.1		
Approach LOS	A			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.2	27.9		10.5	8.9	23.2		10.5				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	30.0	60.0		30.0	30.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.2	4.7		6.0	5.7	7.6		5.9				
Green Ext Time (p_c), s	0.0	5.2		0.1	0.2	9.6		0.6				

Intersection Summary

HCM 6th Ctrl Delay 11.5

HCM 6th LOS B

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

3: La Colina Rd/Appian Way & San Pablo Dam Rd

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	609	819	35	16	721	167	34	20	7	136	19	235
Future Volume (veh/h)	609	819	35	16	721	167	34	20	7	136	19	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	615	827	34	16	728	158	34	20	3	137	19	81
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	651	2412	99	19	1493	324	59	35	5	166	23	465
Arrive On Green	0.19	0.70	0.70	0.01	0.52	0.52	0.06	0.06	0.06	0.11	0.11	0.11
Sat Flow, veh/h	3428	3448	142	1767	2868	622	1063	625	94	1561	216	1568
Grp Volume(v), veh/h	615	423	438	16	447	439	57	0	0	156	0	81
Grp Sat Flow(s),veh/h/ln	1714	1763	1827	1767	1763	1727	1782	0	0	1777	0	1568
Q Serve(g_s), s	24.3	13.0	13.0	1.2	22.3	22.4	4.3	0.0	0.0	11.8	0.0	5.3
Cycle Q Clear(g_c), s	24.3	13.0	13.0	1.2	22.3	22.4	4.3	0.0	0.0	11.8	0.0	5.3
Prop In Lane	1.00		0.08	1.00		0.36	0.60		0.05	0.88		1.00
Lane Grp Cap(c), veh/h	651	1233	1278	19	917	899	99	0	0	189	0	465
V/C Ratio(X)	0.95	0.34	0.34	0.84	0.49	0.49	0.57	0.00	0.00	0.83	0.00	0.17
Avail Cap(c_a), veh/h	651	1233	1278	155	917	899	306	0	0	389	0	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.8	8.1	8.1	67.6	21.1	21.1	63.1	0.0	0.0	60.0	0.0	35.8
Incr Delay (d2), s/veh	22.5	0.8	0.7	28.4	1.9	1.9	1.9	0.0	0.0	3.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	5.1	5.3	0.7	9.8	9.6	2.0	0.0	0.0	5.5	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.3	8.9	8.9	96.0	23.0	23.0	65.0	0.0	0.0	63.4	0.0	35.9
LnGrp LOS	E	A	A	F	C	C	E	A	A	E	A	D
Approach Vol, veh/h	1476			902			57			237		
Approach Delay, s/veh	37.4			24.3			65.0			54.0		
Approach LOS	D			C			E			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	101.3		11.6	30.0	76.8		18.6				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	12.0	54.0		23.5	26.0	40.0		30.0				
Max Q Clear Time (g_c+l1), s	3.2	15.0		6.3	26.3	24.4		13.8				
Green Ext Time (p_c), s	0.0	10.2		0.1	0.0	7.2		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			35.0									
HCM 6th LOS			D									
Notes												

HCM 6th Signalized Intersection Summary

4: San Pablo Dam Rd & El Portal Dr

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	1077	16	6	566	419	12	13	2	374	18	67
Future Volume (veh/h)	161	1077	16	6	566	419	12	13	2	374	18	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	164	1099	16	6	578	356	12	13	0	447	0	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	187	2492	36	6	1242	765	21	22	0	508	267	0
Arrive On Green	0.11	0.70	0.70	0.00	0.60	0.60	0.02	0.02	0.00	0.14	0.00	0.00
Sat Flow, veh/h	1767	3556	52	1767	2075	1278	870	942	0	3534	1856	0
Grp Volume(v), veh/h	164	545	570	6	491	443	25	0	0	447	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1845	1767	1763	1590	1812	0	0	1767	1856	0
Q Serve(g_s), s	12.5	18.3	18.3	0.5	21.2	21.2	1.9	0.0	0.0	17.0	0.0	0.0
Cycle Q Clear(g_c), s	12.5	18.3	18.3	0.5	21.2	21.2	1.9	0.0	0.0	17.0	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.80	0.48		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	187	1236	1293	6	1055	952	43	0	0	508	267	0
V/C Ratio(X)	0.88	0.44	0.44	0.92	0.47	0.47	0.58	0.00	0.00	0.88	0.00	0.00
Avail Cap(c_a), veh/h	193	1236	1293	193	1055	952	377	0	0	748	393	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	60.4	8.9	8.9	68.2	15.3	15.3	66.2	0.0	0.0	57.5	0.0	0.0
Incr Delay (d2), s/veh	31.3	1.1	1.1	80.6	1.5	1.6	4.5	0.0	0.0	6.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	7.3	7.6	0.4	9.0	8.2	0.9	0.0	0.0	8.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.7	10.0	10.0	148.8	16.8	16.9	70.7	0.0	0.0	63.5	0.0	0.0
LnGrp LOS	F	B	A	F	B	B	E	A	A	E	A	A
Approach Vol, veh/h	1279				940				25			
Approach Delay, s/veh	20.5				17.7				70.7			
Approach LOS	C				B				E			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.5	101.5		7.3	18.5	87.5		23.7				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	15.0	47.0		28.5	15.0	47.0		29.0				
Max Q Clear Time (g_c+I1), s	2.5	20.3		3.9	14.5	23.2		19.0				
Green Ext Time (p_c), s	0.0	12.4		0.0	0.0	9.8		0.7				
Intersection Summary												
HCM 6th Ctrl Delay	27.1											
HCM 6th LOS	C											
Notes												

HCM Signalized Intersection Capacity Analysis

5: I-80 EB Off Ramp/I-80 EB On Ramp & Amador St & San Pablo Dam Rd

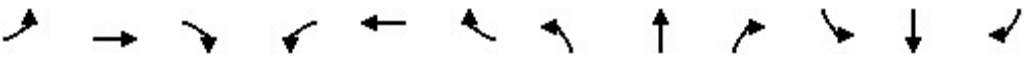
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	NBR2	NWL	NWR	NWR2
Lane Configurations												
Traffic Volume (vph)	259	320	26	647	35	206	0	416	6	52	209	503
Future Volume (vph)	259	320	26	647	35	206	0	416	6	52	209	503
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Lane Util. Factor		0.95		0.95	1.00	0.95	0.91	0.95		1.00		0.95
Frpb, ped/bikes		1.00		1.00	0.97	1.00	0.99	1.00		1.00		1.00
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00		1.00		1.00
Frt		0.99		1.00	0.85	1.00	0.86	0.85		0.87		0.85
Flt Protected		0.98		1.00	1.00	0.95	1.00	1.00		0.99		1.00
Satd. Flow (prot)		3405		3505	1527	1665	1425	1490		1595		1490
Flt Permitted		0.98		1.00	1.00	0.95	1.00	1.00		0.99		1.00
Satd. Flow (perm)		3405		3505	1527	1665	1425	1490		1595		1490
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	282	348	28	703	38	224	0	452	7	57	227	547
RTOR Reduction (vph)	0	0	0	0	29	0	0	0	0	49	0	277
Lane Group Flow (vph)	0	658	0	703	9	202	243	238	0	372	0	133
Confl. Peds. (#/hr)			2		2			1				
Confl. Bikes (#/hr)			2		1							
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA		NA	Perm	Split	NA	custom		Prot		Perm
Protected Phases	1 8	1 8		2		7	7	2 7		4		
Permitted Phases					2							4
Actuated Green, G (s)		57.8		36.6	36.6	30.9	30.9	67.5		25.1		25.1
Effective Green, g (s)		57.8		36.6	36.6	30.9	30.9	67.5		25.1		25.1
Actuated g/C Ratio		0.36		0.23	0.23	0.19	0.19	0.42		0.15		0.15
Clearance Time (s)				3.0	3.0	3.0	3.0			3.0		3.0
Vehicle Extension (s)				0.2	0.2	0.2	0.2			0.2		0.2
Lane Grp Cap (vph)		1211		789	344	316	271	619		246		230
v/s Ratio Prot		c0.19		c0.20		0.12	c0.17	0.16		c0.23		
v/s Ratio Perm					0.01							0.09
v/c Ratio		0.54		0.89	0.02	0.64	0.90	0.38		1.51		0.58
Uniform Delay, d1		41.8		61.0	49.0	60.6	64.2	33.0		68.7		63.7
Progression Factor		0.39		1.00	1.00	1.00	1.00	1.00		1.00		1.00
Incremental Delay, d2		0.2		12.0	0.0	3.1	28.6	0.1		250.3		2.2
Delay (s)		16.4		73.0	49.0	63.7	92.8	33.1		319.0		65.9
Level of Service		B		E	D	E	F	C		F		E
Approach Delay (s)		16.4		71.8			63.4			194.1		
Approach LOS		B		E			E			F		
Intersection Summary												
HCM 2000 Control Delay			92.2			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			162.4			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			84.6%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

6: I-80 WB On Ramp/I-80 WB Off Ramp & San Pablo Dam Rd

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↖↑					↘	↖	
Traffic Volume (vph)	0	616	406	337	502	0	0	0	0	48	3	482
Future Volume (vph)	0	616	406	337	502	0	0	0	0	48	3	482
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0					3.0	3.0	
Lane Util. Factor		0.95	1.00		0.95					1.00	1.00	
Frpb, ped/bikes		1.00	0.97		1.00					1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00					1.00	1.00	
Frt		1.00	0.85		1.00					1.00	0.85	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		3505	1523		3436					1752	1570	
Flt Permitted		1.00	1.00		0.55					0.95	1.00	
Satd. Flow (perm)		3505	1523		1915					1752	1570	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	629	414	344	512	0	0	0	0	49	3	492
RTOR Reduction (vph)	0	0	287	0	0	0	0	0	0	0	433	0
Lane Group Flow (vph)	0	629	127	0	856	0	0	0	0	49	62	0
Confl. Peds. (#/hr)			7			2						
Confl. Bikes (#/hr)					1							
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		1		2 7 4	1 2 7 4					8	8	
Permitted Phases			1									
Actuated Green, G (s)		35.2	35.2		133.8					19.6	19.6	
Effective Green, g (s)		35.2	35.2		133.8					19.6	19.6	
Actuated g/C Ratio		0.22	0.22		0.82					0.12	0.12	
Clearance Time (s)		3.0	3.0							3.0	3.0	
Vehicle Extension (s)		0.2	0.2							0.2	0.2	
Lane Grp Cap (vph)		759	330		2501					211	189	
v/s Ratio Prot		c0.18			c0.21					0.03	c0.04	
v/s Ratio Perm			0.08		0.07							
v/c Ratio		0.83	0.38		0.34					0.23	0.33	
Uniform Delay, d1		60.7	54.3		3.5					64.6	65.4	
Progression Factor		1.00	1.00		0.04					1.00	1.00	
Incremental Delay, d2		7.1	0.3		0.0					0.2	0.4	
Delay (s)		67.8	54.6		0.2					64.8	65.8	
Level of Service		E	D		A					E	E	
Approach Delay (s)		62.6			0.2			0.0			65.7	
Approach LOS		E			A			A			E	
Intersection Summary												
HCM 2000 Control Delay			41.4			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.47									
Actuated Cycle Length (s)			162.4			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			89.5%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

7: I-80 EB Off Ramp/I-80 EB On Ramp & El Portal Dr

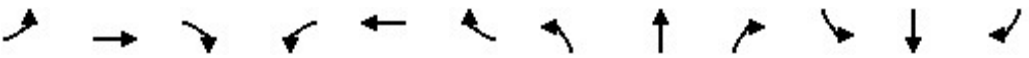
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					 							
Traffic Volume (veh/h)	351	511	0	0	491	227	275	4	137	0	0	0
Future Volume (veh/h)	351	511	0	0	491	227	275	4	137	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	362	527	0	0	506	190	284	4	28			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	391	1358	0	0	1164	435	323	5	291			
Arrive On Green	0.22	0.73	0.00	0.00	0.46	0.46	0.19	0.19	0.19			
Sat Flow, veh/h	1767	1856	0	0	2603	938	1744	25	1572			
Grp Volume(v), veh/h	362	527	0	0	355	341	288	0	28			
Grp Sat Flow(s),veh/h/ln	1767	1856	0	0	1763	1685	1768	0	1572			
Q Serve(g_s), s	20.1	10.6	0.0	0.0	13.5	13.6	15.9	0.0	1.5			
Cycle Q Clear(g_c), s	20.1	10.6	0.0	0.0	13.5	13.6	15.9	0.0	1.5			
Prop In Lane	1.00		0.00	0.00		0.56	0.99		1.00			
Lane Grp Cap(c), veh/h	391	1358	0	0	817	781	327	0	291			
V/C Ratio(X)	0.93	0.39	0.00	0.00	0.43	0.44	0.88	0.00	0.10			
Avail Cap(c_a), veh/h	583	1358	0	0	817	781	442	0	393			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.74	0.74	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	38.1	5.0	0.0	0.0	18.0	18.0	39.7	0.0	33.8			
Incr Delay (d2), s/veh	9.9	0.6	0.0	0.0	1.7	1.8	11.9	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.5	3.4	0.0	0.0	5.8	5.6	7.8	0.0	0.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.0	5.6	0.0	0.0	19.7	19.8	51.5	0.0	33.9			
LnGrp LOS	D	A	A	A	B	B	D	A	C			
Approach Vol, veh/h	889			696			316					
Approach Delay, s/veh	22.9			19.8			50.0					
Approach LOS	C			B			D					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	77.3			26.8			50.5			22.7		
Change Period (Y+Rc), s	4.1			* 4.7			4.1			4.2		
Max Green Setting (Gmax), s	66.7			* 33			27.7			25.0		
Max Q Clear Time (g_c+I1), s	12.6			22.1			15.6			17.9		
Green Ext Time (p_c), s	3.7			0.1			3.7			0.7		
Intersection Summary												
HCM 6th Ctrl Delay	26.2											
HCM 6th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

8: I-80 WB On Ramp/I-80 WB Off Ramp & El Portal Dr

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↗	↑						↖	↖
Traffic Volume (veh/h)	0	634	300	194	574	0	0	0	0	230	1	422
Future Volume (veh/h)	0	634	300	194	574	0	0	0	0	230	1	422
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	1856	1856
Adj Flow Rate, veh/h	0	660	204	202	598	0				240	1	160
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0				3	3	3
Cap, veh/h	0	570	477	731	1414	0				273	1	244
Arrive On Green	0.00	0.31	0.31	0.41	0.76	0.00				0.16	0.16	0.16
Sat Flow, veh/h	0	1856	1552	1767	1856	0				1760	7	1572
Grp Volume(v), veh/h	0	660	204	202	598	0				241	0	160
Grp Sat Flow(s),veh/h/ln	0	1856	1552	1767	1856	0				1768	0	1572
Q Serve(g_s), s	0.0	30.7	10.5	7.6	11.3	0.0				13.3	0.0	9.6
Cycle Q Clear(g_c), s	0.0	30.7	10.5	7.6	11.3	0.0				13.3	0.0	9.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	570	477	731	1414	0				274	0	244
V/C Ratio(X)	0.00	1.16	0.43	0.28	0.42	0.00				0.88	0.00	0.66
Avail Cap(c_a), veh/h	0	570	477	731	1414	0				442	0	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.86	0.86	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	34.7	27.6	19.4	4.2	0.0				41.3	0.0	39.7
Incr Delay (d2), s/veh	0.0	89.7	2.8	0.1	0.8	0.0				6.9	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	27.5	4.2	3.0	3.4	0.0				6.2	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	124.4	30.4	19.5	5.0	0.0				48.2	0.0	40.8
LnGrp LOS	A	F	C	B	A	A				D	A	D
Approach Vol, veh/h		864			800						401	
Approach Delay, s/veh		102.2			8.6						45.3	
Approach LOS		F			A						D	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	45.5	34.8		19.7		80.3						
Change Period (Y+Rc), s	4.1	* 4.1		* 4.2		4.1						
Max Green Setting (Gmax), s	30.0	* 31		* 25		66.7						
Max Q Clear Time (g_c+I1), s	9.6	32.7		15.3		13.3						
Green Ext Time (p_c), s	0.0	0.0		0.2		0.6						
Intersection Summary												
HCM 6th Ctrl Delay			54.9									
HCM 6th LOS			D									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

9: San Pablo Ave & 23rd Ave/Road 20

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	463	90	101	15	113	53	125	547	35	30	331	439
Future Volume (veh/h)	463	90	101	15	113	53	125	547	35	30	331	439
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	555	0	0	16	119	0	132	576	37	32	348	462
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	635	0		27	201		162	1487	95	41	1321	579
Arrive On Green	0.18	0.00	0.00	0.12	0.12	0.00	0.09	0.44	0.44	0.02	0.37	0.37
Sat Flow, veh/h	3534	0	1572	219	1626	1572	1767	3356	215	1767	3526	1545
Grp Volume(v), veh/h	555	0	0	135	0	0	132	302	311	32	348	462
Grp Sat Flow(s),veh/h/ln	1767	0	1572	1845	0	1572	1767	1763	1809	1767	1763	1545
Q Serve(g_s), s	15.9	0.0	0.0	7.2	0.0	0.0	7.6	12.0	12.0	1.9	7.1	27.7
Cycle Q Clear(g_c), s	15.9	0.0	0.0	7.2	0.0	0.0	7.6	12.0	12.0	1.9	7.1	27.7
Prop In Lane	1.00		1.00	0.12		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	635	0		228	0		162	781	801	41	1321	579
V/C Ratio(X)	0.87	0.00		0.59	0.00		0.82	0.39	0.39	0.78	0.26	0.80
Avail Cap(c_a), veh/h	680	0		888	0		340	1018	1044	170	2036	892
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	0.0	0.0	43.1	0.0	0.0	46.3	19.5	19.5	50.5	22.5	29.0
Incr Delay (d2), s/veh	11.0	0.0	0.0	0.9	0.0	0.0	3.8	0.7	0.7	11.2	0.2	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	0.0	3.4	0.0	0.0	3.5	4.9	5.0	0.9	2.9	10.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.5	0.0	0.0	44.0	0.0	0.0	50.1	20.1	20.1	61.7	22.8	34.6
LnGrp LOS	D	A		D	A		D	C	C	E	C	C
Approach Vol, veh/h	555			135			745			842		
Approach Delay, s/veh	52.5			44.0			25.4			30.7		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.4	52.0		24.7	15.5	44.9		18.8				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	10.0	60.0		20.0	20.0	60.0		50.0				
Max Q Clear Time (g_c+I1), s	3.9	14.0		17.9	9.6	29.7		9.2				
Green Ext Time (p_c), s	0.0	8.6		0.3	0.1	9.2		0.5				

Intersection Summary

HCM 6th Ctrl Delay 35.1

HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

10: El Portal Dr & Road 20

PM Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	53	242	175	545	534	49
Future Volume (veh/h)	53	242	175	545	534	49
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	67	0	222	690	676	53
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	86		249	3110	2505	1114
Arrive On Green	0.05	0.00	0.14	0.88	0.71	0.71
Sat Flow, veh/h	1767	1572	1767	3618	3618	1568
Grp Volume(v), veh/h	67	0	222	690	676	53
Grp Sat Flow(s),veh/h/ln	1767	1572	1767	1763	1763	1568
Q Serve(g_s), s	4.9	0.0	16.0	3.7	8.9	1.3
Cycle Q Clear(g_c), s	4.9	0.0	16.0	3.7	8.9	1.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	86		249	3110	2505	1114
V/C Ratio(X)	0.78		0.89	0.22	0.27	0.05
Avail Cap(c_a), veh/h	394		435	3110	2505	1114
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.1	0.0	54.9	1.1	6.7	5.6
Incr Delay (d2), s/veh	5.6	0.0	5.4	0.2	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	7.5	0.6	3.3	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	66.8	0.0	60.3	1.3	7.0	5.7
LnGrp LOS	E		E	A	A	A
Approach Vol, veh/h	67			912	729	
Approach Delay, s/veh	66.8			15.6	6.9	
Approach LOS	E			B	A	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	22.3	97.4			119.7	10.3
Change Period (Y+Rc), s	4.0	5.0			5.0	4.0
Max Green Setting (Gmax), s	32.0	56.0			92.0	29.0
Max Q Clear Time (g_c+I1), s	18.0	10.9			5.7	6.9
Green Ext Time (p_c), s	0.3	8.4			8.2	0.1
Intersection Summary						
HCM 6th Ctrl Delay			13.9			
HCM 6th LOS			B			
Notes						
User approved pedestrian interval to be less than phase max green.						
User approved ignoring U-Turning movement.						
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.						

HCM 6th AWSC
11: Fourdham St & Rollingwood Dr

PM Peak Hour

Intersection

Intersection Delay, s/veh 10

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	222	47	14	6	29	20	10	87	3	12	72	88
Future Vol, veh/h	222	47	14	6	29	20	10	87	3	12	72	88
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	234	49	15	6	31	21	11	92	3	13	76	93
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.1	8.3	9	9.2
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	78%	11%	7%
Vol Thru, %	87%	17%	53%	42%
Vol Right, %	3%	5%	36%	51%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	283	55	172
LT Vol	10	222	6	12
Through Vol	87	47	29	72
RT Vol	3	14	20	88
Lane Flow Rate	105	298	58	181
Geometry Grp	1	1	1	1
Degree of Util (X)	0.148	0.4	0.078	0.235
Departure Headway (Hd)	5.056	4.832	4.821	4.672
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	704	742	736	764
Service Time	3.121	2.887	2.893	2.729
HCM Lane V/C Ratio	0.149	0.402	0.079	0.237
HCM Control Delay	9	11.1	8.3	9.2
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.5	1.9	0.3	0.9

HCM 6th Signalized Intersection Summary

12: El Portal Dr & Glenlock St

PM Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	121	10	0	818	831	167
Future Volume (veh/h)	121	10	0	818	831	167
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	0	1856	1856	1856
Adj Flow Rate, veh/h	126	6	0	852	866	168
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	0	3	3	3
Cap, veh/h	156	7	0	1485	1208	234
Arrive On Green	0.09	0.09	0.00	0.80	0.80	0.80
Sat Flow, veh/h	1665	79	0	1856	1510	293
Grp Volume(v), veh/h	133	0	0	852	0	1034
Grp Sat Flow(s),veh/h/ln	1758	0	0	1856	0	1802
Q Serve(g_s), s	7.0	0.0	0.0	16.1	0.0	25.5
Cycle Q Clear(g_c), s	7.0	0.0	0.0	16.1	0.0	25.5
Prop In Lane	0.95	0.05	0.00			0.16
Lane Grp Cap(c), veh/h	164	0	0	1485	0	1442
V/C Ratio(X)	0.81	0.00	0.00	0.57	0.00	0.72
Avail Cap(c_a), veh/h	313	0	0	1485	0	1442
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.2	0.0	0.0	3.5	0.0	4.4
Incr Delay (d2), s/veh	3.6	0.0	0.0	1.6	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	4.1	0.0	6.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.8	0.0	0.0	5.1	0.0	7.5
LnGrp LOS	D	A	A	A	A	A
Approach Vol, veh/h	133			852	1034	
Approach Delay, s/veh	45.8			5.1	7.5	
Approach LOS	D			A	A	
Timer - Assigned Phs	2			4		6
Phs Duration (G+Y+Rc), s	82.1			12.9		82.1
Change Period (Y+Rc), s	6.1			4.0		6.1
Max Green Setting (Gmax), s	68.0			16.9		68.0
Max Q Clear Time (g_c+I1), s	18.1			9.0		27.5
Green Ext Time (p_c), s	22.2			0.1		26.8
Intersection Summary						
HCM 6th Ctrl Delay			9.0			
HCM 6th LOS			A			

HCM 6th TWSC
13: San Pablo Dam Rd & D Avila Way

PM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	526	794	2	2	10
Future Vol, veh/h	11	526	794	2	2	10
Conflicting Peds, #/hr	4	0	0	4	3	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	12	591	892	2	2	11

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	898	0	-	0	1220
Stage 1	-	-	-	-	897
Stage 2	-	-	-	-	323
Critical Hdwy	4.16	-	-	-	6.86
Critical Hdwy Stg 1	-	-	-	-	5.86
Critical Hdwy Stg 2	-	-	-	-	5.86
Follow-up Hdwy	2.23	-	-	-	3.53
Pot Cap-1 Maneuver	746	-	-	-	171
Stage 1	-	-	-	-	356
Stage 2	-	-	-	-	703
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	743	-	-	-	167
Mov Cap-2 Maneuver	-	-	-	-	167
Stage 1	-	-	-	-	349
Stage 2	-	-	-	-	700

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	743	-	-	-	549
HCM Lane V/C Ratio	0.017	-	-	-	0.02
HCM Control Delay (s)	9.9	-	-	-	11.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

HCM 6th Signalized Intersection Summary

14: Valley View Rd & Morningside Dr

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↷		↰	↷		↰	↷	
Traffic Volume (veh/h)	0	0	0	26	1	105	29	630	28	97	345	138
Future Volume (veh/h)	0	0	0	26	1	105	29	630	28	97	345	138
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.84	1.00		0.99	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h				32	1	28	36	778	33	120	426	144
Peak Hour Factor				0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %				3	3	3	3	3	3	3	3	3
Cap, veh/h				683	18	499	67	1125	48	153	965	322
Arrive On Green				0.39	0.39	0.39	0.04	0.33	0.33	0.09	0.38	0.38
Sat Flow, veh/h				1767	46	1290	1767	3444	146	1767	2570	858
Grp Volume(v), veh/h				32	0	29	36	398	413	120	291	279
Grp Sat Flow(s),veh/h/ln				1767	0	1336	1767	1763	1827	1767	1763	1665
Q Serve(g_s), s				0.7	0.0	0.8	1.2	11.5	11.5	3.9	7.2	7.4
Cycle Q Clear(g_c), s				0.7	0.0	0.8	1.2	11.5	11.5	3.9	7.2	7.4
Prop In Lane				1.00		0.97	1.00		0.08	1.00		0.52
Lane Grp Cap(c), veh/h				683	0	517	67	576	597	153	662	626
V/C Ratio(X)				0.05	0.00	0.06	0.54	0.69	0.69	0.78	0.44	0.45
Avail Cap(c_a), veh/h				1207	0	912	604	1204	1248	604	1204	1138
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				11.2	0.0	11.3	27.7	17.1	17.1	26.2	13.7	13.7
Incr Delay (d2), s/veh				0.0	0.0	0.0	2.5	1.5	1.4	3.3	0.5	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.2	0.0	0.2	0.5	4.4	4.5	1.7	2.6	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				11.2	0.0	11.3	30.1	18.6	18.6	29.5	14.1	14.2
LnGrp LOS				B	A	B	C	B	B	C	B	B
Approach Vol, veh/h					61			847			690	
Approach Delay, s/veh					11.2			19.1			16.8	
Approach LOS					B			B			B	
Timer - Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	8.6	23.3			5.7	26.2		26.6				
Change Period (Y+Rc), s	3.5	* 4.2			3.5	* 4.2		4.0				
Max Green Setting (Gmax), s	20.0	* 40			20.0	* 40		40.0				
Max Q Clear Time (g_c+I1), s	5.9	13.5			3.2	9.4		2.8				
Green Ext Time (p_c), s	0.0	5.6			0.0	3.9		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				17.8								
HCM 6th LOS				B								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

15: Sobrante Ave & Valley View Rd

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	538	13	98	706	10	16	29	207	4	10	25
Future Volume (veh/h)	34	538	13	98	706	10	16	29	207	4	10	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	38	604	0	110	793	10	18	33	109	4	11	2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	44	1273		142	1485	19	24	44	146	6	15	3
Arrive On Green	0.02	0.36	0.00	0.08	0.42	0.42	0.13	0.13	0.13	0.01	0.01	0.01
Sat Flow, veh/h	1767	3618	0	1767	3565	45	185	339	1119	422	1161	211
Grp Volume(v), veh/h	38	604	0	110	392	411	160	0	0	17	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	0	1767	1763	1847	1642	0	0	1795	0	0
Q Serve(g_s), s	0.9	5.6	0.0	2.6	7.0	7.0	4.0	0.0	0.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	0.9	5.6	0.0	2.6	7.0	7.0	4.0	0.0	0.0	0.4	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.02	0.11		0.68	0.24		0.12
Lane Grp Cap(c), veh/h	44	1273		142	734	769	215	0	0	24	0	0
V/C Ratio(X)	0.86	0.47		0.77	0.53	0.53	0.75	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	838	4177		838	2089	2189	778	0	0	851	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.5	10.4	0.0	19.0	9.2	9.2	17.7	0.0	0.0	20.7	0.0	0.0
Incr Delay (d2), s/veh	16.2	0.4	0.0	3.4	0.9	0.8	1.9	0.0	0.0	14.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.7	0.0	1.0	2.1	2.2	1.4	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	10.8	0.0	22.4	10.1	10.1	19.6	0.0	0.0	35.1	0.0	0.0
LnGrp LOS	D	B		C	B	B	B	A	A	D	A	A
Approach Vol, veh/h	642			913			160			17		
Approach Delay, s/veh	12.3			11.6			19.6			35.1		
Approach LOS	B			B			B			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	20.7		4.6	5.1	23.1		9.5				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	20.0	50.0		20.0	20.0	50.0		20.0				
Max Q Clear Time (g_c+I1), s	4.6	7.6		2.4	2.9	9.0		6.0				
Green Ext Time (p_c), s	0.1	6.6		0.0	0.0	8.5		0.5				

Intersection Summary

HCM 6th Ctrl Delay 12.8

HCM 6th LOS B

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

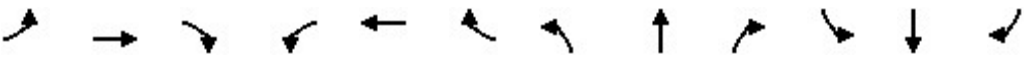
16: Appian Way & Allview Ave

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	0	8	0	0	1	16	1119	0	1	784	78
Future Volume (veh/h)	94	0	8	0	0	1	16	1119	0	1	784	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.94	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	99	0	0	0	0	1	17	1178	0	1	825	81
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	132	0	0	0	0	13	19	1292	0	2	1138	112
Arrive On Green	0.07	0.00	0.00	0.00	0.00	0.01	0.01	0.70	0.00	0.00	0.69	0.69
Sat Flow, veh/h	1767	0	0	0	0	1479	1767	1856	0	1767	1659	163
Grp Volume(v), veh/h	99	0	0	0	0	1	17	1178	0	1	0	906
Grp Sat Flow(s),veh/h/ln	1767	0	0	0	0	1479	1767	1856	0	1767	0	1822
Q Serve(g_s), s	4.4	0.0	0.0	0.0	0.0	0.1	0.8	42.0	0.0	0.0	0.0	24.7
Cycle Q Clear(g_c), s	4.4	0.0	0.0	0.0	0.0	0.1	0.8	42.0	0.0	0.0	0.0	24.7
Prop In Lane	1.00		0.00	0.00		1.00	1.00		0.00	1.00		0.09
Lane Grp Cap(c), veh/h	132	0	0	0	0	13	19	1292	0	2	0	1250
V/C Ratio(X)	0.75	0.00	0.00	0.00	0.00	0.08	0.88	0.91	0.00	0.45	0.00	0.73
Avail Cap(c_a), veh/h	667	0	0	0	0	558	667	1400	0	667	0	1375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.1	0.0	0.0	0.0	0.0	39.1	39.3	10.1	0.0	39.7	0.0	7.8
Incr Delay (d2), s/veh	3.2	0.0	0.0	0.0	0.0	1.0	33.9	9.2	0.0	45.0	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	0.0	0.0	0.0	0.5	14.9	0.0	0.0	0.0	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.2	0.0	0.0	0.0	0.0	40.1	73.2	19.2	0.0	84.7	0.0	9.8
LnGrp LOS	D	A	A	A	A	D	E	B	A	F	A	A
Approach Vol, veh/h		99			1			1195			907	
Approach Delay, s/veh		39.2			40.1			20.0			9.9	
Approach LOS		D			D			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.0	60.9		9.9	4.9	60.0		4.7				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	30.0	60.0		30.0	30.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.0	44.0		6.4	2.8	26.7		2.1				
Green Ext Time (p_c), s	0.0	11.4		0.3	0.0	12.2		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				16.7								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary 17: Appian Way & EB I-80 Off-Ramp/EB I-80 On-Ramp

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	25	98	0	0	0	0	853	1096	0	985	224
Future Volume (veh/h)	330	25	98	0	0	0	0	853	1096	0	985	224
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	351	0	26				0	727	965	0	995	0
Peak Hour Factor	0.99	0.99	0.99				0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	3	3	3				0	3	3	0	3	3
Cap, veh/h	444	0	198				0	1389	2354	0	2639	
Arrive On Green	0.13	0.00	0.13				0.00	0.75	0.75	0.00	1.00	0.00
Sat Flow, veh/h	3534	0	1572				0	1856	3145	0	3711	0
Grp Volume(v), veh/h	351	0	26				0	727	965	0	995	0
Grp Sat Flow(s),veh/h/ln	1767	0	1572				0	1856	1572	0	1763	0
Q Serve(g_s), s	6.7	0.0	1.0				0.0	11.3	7.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.7	0.0	1.0				0.0	11.3	7.8	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	444	0	198				0	1389	2354	0	2639	
V/C Ratio(X)	0.79	0.00	0.13				0.00	0.52	0.41	0.00	0.38	
Avail Cap(c_a), veh/h	1262	0	562				0	1389	2354	0	2639	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.00	0.49	0.00
Uniform Delay (d), s/veh	29.7	0.0	27.2				0.0	3.6	3.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.1				0.0	1.4	0.5	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.4				0.0	2.7	1.4	0.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	0.0	27.3				0.0	5.1	3.7	0.0	0.2	0.0
LnGrp LOS	C	A	C				A	A	A	A	A	
Approach Vol, veh/h	377						1692			995		
Approach Delay, s/veh	30.7						4.3			0.2		
Approach LOS	C						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	56.5			13.5			56.5					
Change Period (Y+Rc), s	4.1			* 4.7			4.1					
Max Green Setting (Gmax), s	36.2			* 25			36.2					
Max Q Clear Time (g_c+I1), s	13.3			8.7			2.0					
Green Ext Time (p_c), s	0.9			0.1			1.4					

Intersection Summary

HCM 6th Ctrl Delay	6.2
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary 18: Appian Way & WB I-80 On-Ramp/WB I-80 Off-Ramp

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	518	3	315	236	907	0	0	796	524
Future Volume (veh/h)	0	0	0	518	3	315	236	907	0	0	796	524
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				629	0	153	254	975	0	0	856	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				3	3	3	3	3	0	0	3	3
Cap, veh/h				673	0	299	276	2658	0	0	2014	
Arrive On Green				0.19	0.00	0.19	0.16	0.75	0.00	0.00	0.57	0.00
Sat Flow, veh/h				3534	0	1572	1767	3618	0	0	3711	0
Grp Volume(v), veh/h				629	0	153	254	975	0	0	856	0
Grp Sat Flow(s),veh/h/ln				1767	0	1572	1767	1763	0	0	1763	0
Q Serve(g_s), s				24.5	0.0	12.2	19.8	13.2	0.0	0.0	19.2	0.0
Cycle Q Clear(g_c), s				24.5	0.0	12.2	19.8	13.2	0.0	0.0	19.2	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				673	0	299	276	2658	0	0	2014	
V/C Ratio(X)				0.93	0.00	0.51	0.92	0.37	0.00	0.00	0.43	
Avail Cap(c_a), veh/h				1161	0	517	467	2658	0	0	2014	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.77	0.77	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				55.8	0.0	50.8	58.2	5.9	0.0	0.0	17.0	0.0
Incr Delay (d2), s/veh				5.1	0.0	0.5	7.6	0.3	0.0	0.0	0.7	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				11.3	0.0	4.9	9.4	4.5	0.0	0.0	7.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				60.9	0.0	51.3	65.8	6.2	0.0	0.0	17.7	0.0
LnGrp LOS				E	A	D	E	A	A	A	B	
Approach Vol, veh/h					782			1229			856	
Approach Delay, s/veh					59.1			18.5			17.7	
Approach LOS					E			B			B	
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	109.6			25.6			84.1			30.4		
Change Period (Y+Rc), s	4.1			3.7			4.1			3.7		
Max Green Setting (Gmax), s	86.2			37.0			45.5			46.0		
Max Q Clear Time (g_c+I1), s	15.2			21.8			21.2			26.5		
Green Ext Time (p_c), s	1.4			0.1			1.2			0.1		
Intersection Summary												
HCM 6th Ctrl Delay				29.3								
HCM 6th LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary

1: Valley View Rd & Amend Rd

AM Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	52	95	352	64	63	520
Future Volume (veh/h)	52	95	352	64	63	520
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	62	26	419	53	75	619
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	301	268	979	123	216	1920
Arrive On Green	0.17	0.17	0.31	0.31	0.12	0.54
Sat Flow, veh/h	1767	1572	3235	395	1767	3618
Grp Volume(v), veh/h	62	26	234	238	75	619
Grp Sat Flow(s),veh/h/ln	1767	1572	1763	1774	1767	1763
Q Serve(g_s), s	1.0	0.4	3.3	3.4	1.2	3.1
Cycle Q Clear(g_c), s	1.0	0.4	3.3	3.4	1.2	3.1
Prop In Lane	1.00	1.00		0.22	1.00	
Lane Grp Cap(c), veh/h	301	268	549	553	216	1920
V/C Ratio(X)	0.21	0.10	0.43	0.43	0.35	0.32
Avail Cap(c_a), veh/h	840	747	2233	2248	784	4466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	11.1	8.6	8.6	12.7	4.0
Incr Delay (d2), s/veh	0.1	0.1	0.7	0.8	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	1.0	1.0	0.4	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.4	11.1	9.4	9.4	13.1	4.1
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	88		472			694
Approach Delay, s/veh	11.3		9.4			5.1
Approach LOS	B		A			A
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	7.4	14.3		9.9		21.7
Change Period (Y+Rc), s	3.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	14.0	40.0		15.0		40.0
Max Q Clear Time (g_c+I1), s	3.2	5.4		3.0		5.1
Green Ext Time (p_c), s	0.1	4.5		0.1		6.8
Intersection Summary						
HCM 6th Ctrl Delay			7.1			
HCM 6th LOS			A			
Notes						
User approved pedestrian interval to be less than phase max green.						

HCM 6th Signalized Intersection Summary

2: Valley View Rd & San Pablo Dam Rd

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	497	12	6	296	108	37	20	7	311	11	253
Future Volume (veh/h)	202	497	12	6	296	108	37	20	7	311	11	253
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	222	546	12	7	325	0	41	22	6	342	12	110
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	280	1272	28	7	727		173	77	13	548	14	562
Arrive On Green	0.16	0.36	0.36	0.00	0.21	0.00	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1767	3527	77	1767	3526	1572	166	214	36	1139	40	1569
Grp Volume(v), veh/h	222	273	285	7	325	0	69	0	0	354	0	110
Grp Sat Flow(s),veh/h/ln	1767	1763	1842	1767	1763	1572	416	0	0	1179	0	1569
Q Serve(g_s), s	6.1	5.9	5.9	0.2	4.1	0.0	0.7	0.0	0.0	0.0	0.0	2.4
Cycle Q Clear(g_c), s	6.1	5.9	5.9	0.2	4.1	0.0	15.3	0.0	0.0	14.6	0.0	2.4
Prop In Lane	1.00		0.04	1.00		1.00	0.59		0.09	0.97		1.00
Lane Grp Cap(c), veh/h	280	636	664	7	727		263	0	0	563	0	562
V/C Ratio(X)	0.79	0.43	0.43	0.97	0.45		0.26	0.00	0.00	0.63	0.00	0.20
Avail Cap(c_a), veh/h	1048	2091	2184	1048	4181		598	0	0	886	0	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.5	12.2	12.2	25.2	17.6	0.0	12.6	0.0	0.0	15.1	0.0	11.2
Incr Delay (d2), s/veh	1.9	1.0	0.9	87.3	0.9	0.0	0.2	0.0	0.0	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	2.0	2.1	0.2	1.5	0.0	0.5	0.0	0.0	3.2	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	13.2	13.2	112.5	18.5	0.0	12.8	0.0	0.0	15.5	0.0	11.3
LnGrp LOS	C	B	B	F	B		B	A	A	B	A	B
Approach Vol, veh/h	780			332			69			464		
Approach Delay, s/veh	15.8			20.5			12.8			14.5		
Approach LOS	B			C			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.2	24.2		22.1	12.0	16.4		22.1				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	30.0	60.0		30.0	30.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.2	7.9		17.3	8.1	6.1		16.6				
Green Ext Time (p_c), s	0.0	7.4		0.1	0.3	4.3		1.4				

Intersection Summary

HCM 6th Ctrl Delay 16.3

HCM 6th LOS B

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

3: La Colina Rd/Appian Way & San Pablo Dam Rd

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	910	19	15	944	137	24	4	26	157	11	385
Future Volume (veh/h)	221	910	19	15	944	137	24	4	26	157	11	385
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	240	989	20	16	1026	142	26	4	2	171	12	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	301	2447	49	19	1914	265	41	6	3	206	14	333
Arrive On Green	0.09	0.69	0.69	0.01	0.62	0.62	0.03	0.03	0.03	0.12	0.12	0.12
Sat Flow, veh/h	3428	3533	71	1767	3110	430	1431	220	110	1656	116	1569
Grp Volume(v), veh/h	240	493	516	16	581	587	32	0	0	183	0	113
Grp Sat Flow(s),veh/h/ln	1714	1763	1842	1767	1763	1777	1761	0	0	1773	0	1569
Q Serve(g_s), s	8.4	14.6	14.6	1.1	23.1	23.1	2.2	0.0	0.0	12.3	0.0	7.5
Cycle Q Clear(g_c), s	8.4	14.6	14.6	1.1	23.1	23.1	2.2	0.0	0.0	12.3	0.0	7.5
Prop In Lane	1.00		0.04	1.00		0.24	0.81		0.06	0.93		1.00
Lane Grp Cap(c), veh/h	301	1221	1275	19	1085	1094	51	0	0	221	0	333
V/C Ratio(X)	0.80	0.40	0.40	0.85	0.54	0.54	0.63	0.00	0.00	0.83	0.00	0.34
Avail Cap(c_a), veh/h	590	1221	1275	145	1085	1094	339	0	0	436	0	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.6	8.0	8.0	60.3	13.5	13.5	58.6	0.0	0.0	52.1	0.0	40.8
Incr Delay (d2), s/veh	1.8	1.0	1.0	30.0	1.9	1.9	4.7	0.0	0.0	3.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	5.7	5.9	0.7	9.6	9.7	1.1	0.0	0.0	5.6	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.4	9.0	9.0	90.3	15.4	15.4	63.3	0.0	0.0	55.2	0.0	41.0
LnGrp LOS	E	A	A	F	B	B	E	A	A	E	A	D
Approach Vol, veh/h	1249		1184				32		296			
Approach Delay, s/veh	18.1		16.4				63.3		49.8			
Approach LOS	B		B				E		D			
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.3	90.0	7.5		14.7	80.6	19.2					
Change Period (Y+Rc), s	4.0	5.5	4.0		4.0	5.5	4.0					
Max Green Setting (Gmax), s	10.0	41.0	23.5		21.0	30.0	30.0					
Max Q Clear Time (g_c+I1), s	3.1	16.6	4.2		10.4	25.1	14.3					
Green Ext Time (p_c), s	0.0	10.5	0.1		0.3	3.6	0.7					
Intersection Summary												
HCM 6th Ctrl Delay	21.3											
HCM 6th LOS	C											

HCM 6th Signalized Intersection Summary

4: San Pablo Dam Rd & El Portal Dr

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	544	15	9	776	454	10	6	2	587	31	89
Future Volume (veh/h)	71	544	15	9	776	454	10	6	2	587	31	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	76	579	15	10	826	429	11	6	0	728	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	97	2102	54	11	1226	631	34	19	0	786	413	0
Arrive On Green	0.05	0.60	0.60	0.01	0.55	0.55	0.03	0.03	0.00	0.22	0.00	0.00
Sat Flow, veh/h	1767	3511	91	1767	2228	1147	1163	634	0	3534	1856	0
Grp Volume(v), veh/h	76	291	303	10	652	603	17	0	0	728	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1839	1767	1763	1612	1797	0	0	1767	1856	0
Q Serve(g_s), s	5.2	9.7	9.7	0.7	32.2	32.8	1.1	0.0	0.0	24.6	0.0	0.0
Cycle Q Clear(g_c), s	5.2	9.7	9.7	0.7	32.2	32.8	1.1	0.0	0.0	24.6	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.71	0.65		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	97	1055	1101	11	970	887	52	0	0	786	413	0
V/C Ratio(X)	0.79	0.28	0.28	0.89	0.67	0.68	0.32	0.00	0.00	0.93	0.00	0.00
Avail Cap(c_a), veh/h	217	1055	1101	217	970	887	346	0	0	840	441	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	57.0	11.8	11.8	60.6	19.6	19.7	58.0	0.0	0.0	46.4	0.0	0.0
Incr Delay (d2), s/veh	5.2	0.6	0.6	51.6	3.7	4.2	1.3	0.0	0.0	14.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	4.0	4.2	0.5	14.0	13.1	0.5	0.0	0.0	12.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.2	12.4	12.4	112.2	23.3	23.9	59.4	0.0	0.0	61.4	0.0	0.0
LnGrp LOS	E	B	B	F	C	C	E	A	A	E	A	A
Approach Vol, veh/h	670				1265		17				728	
Approach Delay, s/veh	18.0				24.3		59.4				61.4	
Approach LOS	B				C		E				E	
Timer - Assigned Phs	1	2			4	5	6	8				
Phs Duration (G+Y+Rc), s	4.8	78.5			7.6	10.7	72.6	31.1				
Change Period (Y+Rc), s	4.0	5.5			4.0	4.0	5.5	4.0				
Max Green Setting (Gmax), s	15.0	37.0			23.5	15.0	37.0	29.0				
Max Q Clear Time (g_c+I1), s	2.7	11.7			3.1	7.2	34.8	26.6				
Green Ext Time (p_c), s	0.0	5.7			0.0	0.0	1.8	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	33.0											
HCM 6th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

HCM Signalized Intersection Capacity Analysis

5: I-80 EB Off Ramp/I-80 EB On Ramp & Amador St & San Pablo Dam Rd

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	NBR2	NWL	NWR	NWR2
Lane Configurations												
Traffic Volume (vph)	260	160	106	835	24	305	0	323	7	36	211	163
Future Volume (vph)	260	160	106	835	24	305	0	323	7	36	211	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Lane Util. Factor		0.95		0.95	1.00	0.95	0.91	0.95		1.00		0.95
Frpb, ped/bikes		0.99		1.00	0.98	1.00	1.00	1.00		1.00		1.00
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00		1.00		1.00
Frt		0.97		1.00	0.85	1.00	0.91	0.85		0.87		0.85
Flt Protected		0.98		1.00	1.00	0.95	0.98	1.00		0.99		1.00
Satd. Flow (prot)		3289		3505	1531	1665	1495	1490		1595		1490
Flt Permitted		0.98		1.00	1.00	0.95	0.98	1.00		0.99		1.00
Satd. Flow (perm)		3289		3505	1531	1665	1495	1490		1595		1490
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	277	170	113	888	26	324	0	344	7	38	224	173
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	52	0	132
Lane Group Flow (vph)	0	560	0	888	8	237	225	213	0	227	0	24
Confl. Peds. (#/hr)			6									
Confl. Bikes (#/hr)					3							
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA		NA	Perm	Split	NA	custom		Prot		Perm
Protected Phases	1 8	1 8		2		7	7	2 7		4		
Permitted Phases					2							4
Actuated Green, G (s)		43.2		46.8	46.8	25.5	25.5	72.3		23.1		23.1
Effective Green, g (s)		43.2		46.8	46.8	25.5	25.5	72.3		23.1		23.1
Actuated g/C Ratio		0.29		0.31	0.31	0.17	0.17	0.48		0.15		0.15
Clearance Time (s)				3.0	3.0	3.0	3.0			3.0		3.0
Vehicle Extension (s)				0.2	0.2	0.2	0.2			0.2		0.2
Lane Grp Cap (vph)		943		1089	475	281	253	715		244		228
v/s Ratio Prot		c0.17		c0.25		0.14	c0.15	0.14		c0.14		
v/s Ratio Perm					0.01							0.02
v/c Ratio		0.59		0.82	0.02	0.84	0.89	0.30		0.93		0.10
Uniform Delay, d1		46.2		47.9	36.0	60.6	61.2	23.8		63.0		54.9
Progression Factor		0.75		1.00	1.00	1.00	1.00	1.00		1.00		1.00
Incremental Delay, d2		0.3		4.6	0.0	19.3	28.5	0.1		38.9		0.1
Delay (s)		34.8		52.5	36.0	79.9	89.7	23.8		101.8		54.9
Level of Service		C		D	D	E	F	C		F		D
Approach Delay (s)		34.8		52.0			65.5			85.0		
Approach LOS		C		D			E			F		
Intersection Summary												
HCM 2000 Control Delay			57.3			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			150.6			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			82.3%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

6: I-80 WB On Ramp/I-80 WB Off Ramp & San Pablo Dam Rd

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑					↗	↗	
Traffic Volume (vph)	0	413	311	492	671	0	0	0	0	132	34	475
Future Volume (vph)	0	413	311	492	671	0	0	0	0	132	34	475
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0					3.0	3.0	
Lane Util. Factor		0.95	1.00		0.95					1.00	1.00	
Frpb, ped/bikes		1.00	0.96		1.00					1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00					1.00	1.00	
Frt		1.00	0.85		1.00					1.00	0.86	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		3505	1511		3425					1752	1586	
Flt Permitted		1.00	1.00		0.59					0.95	1.00	
Satd. Flow (perm)		3505	1511		2077					1752	1586	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	430	324	512	699	0	0	0	0	138	35	495
RTOR Reduction (vph)	0	0	281	0	0	0	0	0	0	0	315	0
Lane Group Flow (vph)	0	430	43	0	1212	0	0	0	0	138	215	0
Confl. Peds. (#/hr)			11	11								
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		1		2 7 4	1 2 7 4					8	8	
Permitted Phases			1									
Actuated Green, G (s)		20.1	20.1		121.5					20.1	20.1	
Effective Green, g (s)		20.1	20.1		121.5					20.1	20.1	
Actuated g/C Ratio		0.13	0.13		0.81					0.13	0.13	
Clearance Time (s)		3.0	3.0							3.0	3.0	
Vehicle Extension (s)		0.2	0.2							0.2	0.2	
Lane Grp Cap (vph)		467	201		2583					233	211	
v/s Ratio Prot		c0.12			c0.32					0.08	c0.14	
v/s Ratio Perm			0.03		0.06							
v/c Ratio		0.92	0.22		0.47					0.59	1.02	
Uniform Delay, d1		64.5	58.2		4.5					61.4	65.2	
Progression Factor		1.00	1.00		0.19					1.00	1.00	
Incremental Delay, d2		23.2	0.2		0.0					2.7	66.4	
Delay (s)		87.7	58.4		0.9					64.1	131.7	
Level of Service		F	E		A					E	F	
Approach Delay (s)		75.1			0.9			0.0			117.7	
Approach LOS		E			A			A			F	
Intersection Summary												
HCM 2000 Control Delay			51.8			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			150.6			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			94.4%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

7: I-80 EB Off Ramp/I-80 EB On Ramp & El Portal Dr

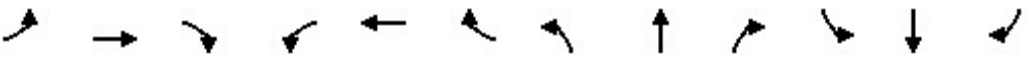
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					 								
Traffic Volume (veh/h)	347	625	0	0	454	174	303	2	202	0	0	0	
Future Volume (veh/h)	347	625	0	0	454	174	303	2	202	0	0	0	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Work Zone On Approach	No			No			No						
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856				
Adj Flow Rate, veh/h	351	631	0	0	459	140	306	2	44				
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99				
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3				
Cap, veh/h	373	1335	0	0	1227	371	346	2	310				
Arrive On Green	0.42	1.00	0.00	0.00	0.46	0.46	0.20	0.20	0.20				
Sat Flow, veh/h	1767	1856	0	0	2749	803	1756	11	1572				
Grp Volume(v), veh/h	351	631	0	0	303	296	308	0	44				
Grp Sat Flow(s),veh/h/ln	1767	1856	0	0	1763	1696	1768	0	1572				
Q Serve(g_s), s	19.1	0.0	0.0	0.0	11.2	11.4	16.9	0.0	2.3				
Cycle Q Clear(g_c), s	19.1	0.0	0.0	0.0	11.2	11.4	16.9	0.0	2.3				
Prop In Lane	1.00		0.00	0.00		0.47	0.99		1.00				
Lane Grp Cap(c), veh/h	373	1335	0	0	814	784	349	0	310				
V/C Ratio(X)	0.94	0.47	0.00	0.00	0.37	0.38	0.88	0.00	0.14				
Avail Cap(c_a), veh/h	406	1335	0	0	814	784	477	0	425				
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	0.68	0.68	0.00	0.00	1.00	1.00	1.00	0.00	1.00				
Uniform Delay (d), s/veh	28.3	0.0	0.0	0.0	17.5	17.5	39.0	0.0	33.1				
Incr Delay (d2), s/veh	21.8	0.8	0.0	0.0	1.3	1.4	11.2	0.0	0.1				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	8.0	0.3	0.0	0.0	4.8	4.7	8.2	0.0	0.9				
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	50.1	0.8	0.0	0.0	18.8	18.9	50.2	0.0	33.2				
LnGrp LOS	D	A	A	A	B	B	D	A	C				
Approach Vol, veh/h	982			599			352						
Approach Delay, s/veh	18.4			18.9			48.1						
Approach LOS	B			B			D						
Timer - Assigned Phs	2			5			6			8			
Phs Duration (G+Y+Rc), s	76.1			25.8			50.3			23.9			
Change Period (Y+Rc), s	4.1			* 4.7			4.1			4.2			
Max Green Setting (Gmax), s	64.7			* 23			36.7			27.0			
Max Q Clear Time (g_c+I1), s	2.0			21.1			13.4			18.9			
Green Ext Time (p_c), s	4.8			0.0			4.1			0.8			
Intersection Summary													
HCM 6th Ctrl Delay	24.0												
HCM 6th LOS	C												
Notes													

HCM 6th Signalized Intersection Summary

8: I-80 WB On Ramp/I-80 WB Off Ramp & El Portal Dr

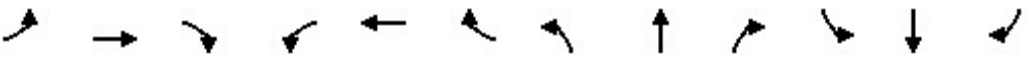
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑						↖	↗
Traffic Volume (veh/h)	0	694	291	186	575	0	0	0	0	279	12	399
Future Volume (veh/h)	0	694	291	186	575	0	0	0	0	279	12	399
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	1856	1856
Adj Flow Rate, veh/h	0	701	166	188	581	0				282	12	95
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99				0.99	0.99	0.99
Percent Heavy Veh, %	0	3	3	3	3	0				3	3	3
Cap, veh/h	0	1066	892	216	1361	0				311	13	288
Arrive On Green	0.00	0.57	0.57	0.24	1.00	0.00				0.18	0.18	0.18
Sat Flow, veh/h	0	1856	1553	1767	1856	0				1698	72	1572
Grp Volume(v), veh/h	0	701	166	188	581	0				294	0	95
Grp Sat Flow(s),veh/h/ln	0	1856	1553	1767	1856	0				1771	0	1572
Q Serve(g_s), s	0.0	25.8	5.1	10.2	0.0	0.0				16.3	0.0	5.3
Cycle Q Clear(g_c), s	0.0	25.8	5.1	10.2	0.0	0.0				16.3	0.0	5.3
Prop In Lane	0.00		1.00	1.00		0.00				0.96		1.00
Lane Grp Cap(c), veh/h	0	1066	892	216	1361	0				325	0	288
V/C Ratio(X)	0.00	0.66	0.19	0.87	0.43	0.00				0.91	0.00	0.33
Avail Cap(c_a), veh/h	0	1066	892	353	1361	0				354	0	314
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.91	0.91	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.6	10.1	37.0	0.0	0.0				40.0	0.0	35.5
Incr Delay (d2), s/veh	0.0	3.2	0.5	6.3	0.9	0.0				23.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.8	1.7	4.2	0.3	0.0				9.0	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.7	10.6	43.3	0.9	0.0				63.5	0.0	35.7
LnGrp LOS	A	B	B	D	A	A				E	A	D
Approach Vol, veh/h		867			769						389	
Approach Delay, s/veh		16.4			11.3						56.7	
Approach LOS		B			B						E	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	15.9	61.5		22.5		77.5						
Change Period (Y+Rc), s	3.7	4.1		* 4.2		4.1						
Max Green Setting (Gmax), s	20.0	47.7		* 20		71.7						
Max Q Clear Time (g_c+I1), s	12.2	27.8		18.3		2.0						
Green Ext Time (p_c), s	0.0	0.6		0.1		0.5						
Intersection Summary												
HCM 6th Ctrl Delay			22.2									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

9: San Pablo Ave & 23rd Ave/Road 20

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	304	203	80	38	182	70	84	288	75	46	405	457
Future Volume (veh/h)	304	203	80	38	182	70	84	288	75	46	405	457
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	270	291	0	40	194	0	89	306	80	49	431	486
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	301	316		54	262		112	1152	295	63	1373	590
Arrive On Green	0.17	0.17	0.00	0.17	0.17	0.00	0.06	0.42	0.42	0.04	0.39	0.39
Sat Flow, veh/h	1767	1856	1572	314	1525	1572	1767	2759	708	1767	3526	1514
Grp Volume(v), veh/h	270	291	0	234	0	0	89	193	193	49	431	486
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1840	0	1572	1767	1763	1704	1767	1763	1514
Q Serve(g_s), s	17.6	18.1	0.0	14.2	0.0	0.0	5.8	8.4	8.7	3.2	10.0	33.9
Cycle Q Clear(g_c), s	17.6	18.1	0.0	14.2	0.0	0.0	5.8	8.4	8.7	3.2	10.0	33.9
Prop In Lane	1.00		1.00	0.17		1.00	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	301	316		316	0		112	736	712	63	1373	590
V/C Ratio(X)	0.90	0.92		0.74	0.00		0.79	0.26	0.27	0.78	0.31	0.82
Avail Cap(c_a), veh/h	301	316		784	0		301	901	872	151	1803	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.7	47.9	0.0	46.1	0.0	0.0	54.2	22.4	22.4	56.1	24.9	32.2
Incr Delay (d2), s/veh	26.6	30.3	0.0	1.3	0.0	0.0	4.7	0.4	0.4	7.5	0.3	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	11.1	0.0	6.6	0.0	0.0	2.7	3.5	3.5	1.6	4.2	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.3	78.2	0.0	47.4	0.0	0.0	58.8	22.8	22.9	63.6	25.2	40.0
LnGrp LOS	E	E		D	A		E	C	C	E	C	D
Approach Vol, veh/h	561			234			475			966		
Approach Delay, s/veh	76.3			47.4			29.6			34.6		
Approach LOS	E			D			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	55.0		26.0	13.5	51.7		26.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	10.0	60.0		20.0	20.0	60.0		50.0				
Max Q Clear Time (g_c+I1), s	5.2	10.7		20.1	7.8	35.9		16.2				
Green Ext Time (p_c), s	0.0	5.0		0.0	0.1	9.8		1.0				

Intersection Summary

HCM 6th Ctrl Delay 45.3

HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

10: El Portal Dr & Road 20

AM Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	39	277	205	524	501	62
Future Volume (veh/h)	39	277	205	524	501	62
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	44	0	233	595	569	44
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	58		275	2956	2206	960
Arrive On Green	0.03	0.00	0.16	0.84	0.63	0.63
Sat Flow, veh/h	1767	1572	1767	3618	3618	1534
Grp Volume(v), veh/h	44	0	233	595	569	44
Grp Sat Flow(s),veh/h/ln	1767	1572	1767	1763	1763	1534
Q Serve(g_s), s	1.7	0.0	9.0	2.3	5.0	0.8
Cycle Q Clear(g_c), s	1.7	0.0	9.0	2.3	5.0	0.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	58		275	2956	2206	960
V/C Ratio(X)	0.76		0.85	0.20	0.26	0.05
Avail Cap(c_a), veh/h	631		303	2956	2206	960
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	0.0	28.7	1.1	5.8	5.0
Incr Delay (d2), s/veh	7.3	0.0	16.8	0.2	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	4.9	0.1	1.6	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.9	0.0	45.5	1.3	6.1	5.1
LnGrp LOS	D		D	A	A	A
Approach Vol, veh/h	44			828	613	
Approach Delay, s/veh	40.9			13.7	6.1	
Approach LOS	D			B	A	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	14.9	48.8			63.7	6.3
Change Period (Y+Rc), s	4.0	5.0			5.0	4.0
Max Green Setting (Gmax), s	12.0	20.0			36.0	25.0
Max Q Clear Time (g_c+I1), s	11.0	7.0			4.3	3.7
Green Ext Time (p_c), s	0.0	4.3			6.1	0.0
Intersection Summary						
HCM 6th Ctrl Delay			11.4			
HCM 6th LOS			B			
Notes						
User approved pedestrian interval to be less than phase max green.						
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.						

HCM 6th AWSC
11: Fourdham St & Rollingwood Dr

AM Peak Hour

Intersection

Intersection Delay, s/veh 10.7

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	149	22	10	2	41	27	7	119	6	31	108	187
Future Vol, veh/h	149	22	10	2	41	27	7	119	6	31	108	187
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	164	24	11	2	45	30	8	131	7	34	119	205
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.8	9	9.6	11.5
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	82%	3%	10%
Vol Thru, %	90%	12%	59%	33%
Vol Right, %	5%	6%	39%	57%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	132	181	70	326
LT Vol	7	149	2	31
Through Vol	119	22	41	108
RT Vol	6	10	27	187
Lane Flow Rate	145	199	77	358
Geometry Grp	1	1	1	1
Degree of Util (X)	0.206	0.302	0.114	0.454
Departure Headway (Hd)	5.219	5.469	5.327	4.559
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	692	660	676	781
Service Time	3.219	3.469	3.335	2.648
HCM Lane V/C Ratio	0.21	0.302	0.114	0.458
HCM Control Delay	9.6	10.8	9	11.5
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.8	1.3	0.4	2.4

HCM 6th Signalized Intersection Summary

12: El Portal Dr & Glenlock St

AM Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	144	7	0	832	875	98
Future Volume (veh/h)	144	7	0	832	875	98
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	0	1856	1856	1856
Adj Flow Rate, veh/h	148	5	0	858	902	98
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	0	3	3	3
Cap, veh/h	179	6	0	1472	1305	142
Arrive On Green	0.11	0.11	0.00	0.79	0.79	0.79
Sat Flow, veh/h	1692	57	0	1856	1645	179
Grp Volume(v), veh/h	154	0	0	858	0	1000
Grp Sat Flow(s),veh/h/ln	1761	0	0	1856	0	1823
Q Serve(g_s), s	8.6	0.0	0.0	17.8	0.0	25.1
Cycle Q Clear(g_c), s	8.6	0.0	0.0	17.8	0.0	25.1
Prop In Lane	0.96	0.03	0.00			0.10
Lane Grp Cap(c), veh/h	186	0	0	1472	0	1447
V/C Ratio(X)	0.83	0.00	0.00	0.58	0.00	0.69
Avail Cap(c_a), veh/h	333	0	0	1472	0	1447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.8	0.0	0.0	4.0	0.0	4.7
Incr Delay (d2), s/veh	3.6	0.0	0.0	1.7	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	0.0	4.9	0.0	6.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.4	0.0	0.0	5.7	0.0	7.5
LnGrp LOS	D	A	A	A	A	A
Approach Vol, veh/h	154			858	1000	
Approach Delay, s/veh	47.4			5.7	7.5	
Approach LOS	D			A	A	
Timer - Assigned Phs	2			4		6
Phs Duration (G+Y+Rc), s	85.4			14.6		85.4
Change Period (Y+Rc), s	6.1			4.0		6.1
Max Green Setting (Gmax), s	71.0			18.9		71.0
Max Q Clear Time (g_c+I1), s	19.8			10.6		27.1
Green Ext Time (p_c), s	22.7			0.1		26.9
Intersection Summary						
HCM 6th Ctrl Delay			9.7			
HCM 6th LOS			A			

HCM 6th TWSC
13: San Pablo Dam Rd & D Avila Way

AM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	719	596	0	0	10
Future Vol, veh/h	7	719	596	0	0	10
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	8	856	710	0	0	12

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	711	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.16	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.23	-	-
Pot Cap-1 Maneuver	878	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	877	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	877	-	-	-	637
HCM Lane V/C Ratio	0.01	-	-	-	0.019
HCM Control Delay (s)	9.1	-	-	-	10.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

HCM 6th Signalized Intersection Summary

14: Valley View Rd & Morningside Dr

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	42	23	78	42	628	59	56	500	371
Future Volume (veh/h)	0	0	0	42	23	78	42	628	59	56	500	371
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.92	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h				52	29	21	52	785	69	70	625	379
Peak Hour Factor				0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %				3	3	3	3	3	3	3	3	3
Cap, veh/h				453	247	179	93	1415	124	112	933	566
Arrive On Green				0.26	0.26	0.26	0.05	0.43	0.43	0.06	0.44	0.44
Sat Flow, veh/h				1767	963	697	1767	3277	288	1767	2106	1277
Grp Volume(v), veh/h				52	0	50	52	422	432	70	523	481
Grp Sat Flow(s),veh/h/ln				1767	0	1660	1767	1763	1803	1767	1763	1621
Q Serve(g_s), s				1.1	0.0	1.1	1.4	8.4	8.4	1.8	11.1	11.1
Cycle Q Clear(g_c), s				1.1	0.0	1.1	1.4	8.4	8.4	1.8	11.1	11.1
Prop In Lane				1.00		0.42	1.00		0.16	1.00		0.79
Lane Grp Cap(c), veh/h				453	0	426	93	761	778	112	781	718
V/C Ratio(X)				0.11	0.00	0.12	0.56	0.55	0.55	0.62	0.67	0.67
Avail Cap(c_a), veh/h				1498	0	1408	749	1495	1528	749	1495	1374
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				13.4	0.0	13.4	21.8	10.0	10.0	21.5	10.4	10.4
Incr Delay (d2), s/veh				0.0	0.0	0.0	2.0	0.6	0.6	2.1	1.0	1.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.4	0.0	0.4	0.6	2.7	2.7	0.7	3.5	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				13.5	0.0	13.5	23.8	10.6	10.6	23.6	11.4	11.5
LnGrp LOS				B	A	B	C	B	B	C	B	B
Approach Vol, veh/h					102			906			1074	
Approach Delay, s/veh					13.5			11.4			12.2	
Approach LOS					B			B			B	
Timer - Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	6.5	24.6			6.0	25.1		16.1				
Change Period (Y+Rc), s	3.5	* 4.2			3.5	* 4.2		4.0				
Max Green Setting (Gmax), s	20.0	* 40			20.0	* 40		40.0				
Max Q Clear Time (g_c+I1), s	3.8	10.4			3.4	13.1		3.1				
Green Ext Time (p_c), s	0.0	6.2			0.0	7.8		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				11.9								
HCM 6th LOS				B								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

15: Sobrante Ave & Valley View Rd

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	767	11	114	772	8	7	20	374	14	30	23
Future Volume (veh/h)	24	767	11	114	772	8	7	20	374	14	30	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	30	959	0	142	965	10	9	25	63	18	38	14
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	35	1585		183	1908	20	12	34	86	23	50	18
Arrive On Green	0.02	0.45	0.00	0.10	0.53	0.53	0.08	0.08	0.08	0.05	0.05	0.05
Sat Flow, veh/h	1767	3618	0	1767	3575	37	153	424	1069	455	960	354
Grp Volume(v), veh/h	30	959	0	142	476	499	97	0	0	70	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	0	1767	1763	1849	1646	0	0	1769	0	0
Q Serve(g_s), s	0.9	11.4	0.0	4.4	9.6	9.6	3.2	0.0	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	0.9	11.4	0.0	4.4	9.6	9.6	3.2	0.0	0.0	2.2	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.02	0.09		0.65	0.26		0.20
Lane Grp Cap(c), veh/h	35	1585		183	941	987	132	0	0	91	0	0
V/C Ratio(X)	0.86	0.60		0.77	0.51	0.51	0.73	0.00	0.00	0.77	0.00	0.00
Avail Cap(c_a), veh/h	635	3169		635	1585	1662	592	0	0	636	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	27.2	11.6	0.0	24.3	8.3	8.3	25.0	0.0	0.0	26.0	0.0	0.0
Incr Delay (d2), s/veh	19.5	0.5	0.0	2.6	0.6	0.6	2.9	0.0	0.0	5.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.7	0.0	1.8	2.8	3.0	1.3	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	12.1	0.0	26.9	8.9	8.9	27.9	0.0	0.0	31.0	0.0	0.0
LnGrp LOS	D	B		C	A	A	C	A	A	C	A	A
Approach Vol, veh/h	989			1117			97			70		
Approach Delay, s/veh	13.2			11.2			27.9			31.0		
Approach LOS	B			B			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	30.5		6.9	5.1	35.2		8.5				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	20.0	50.0		20.0	20.0	50.0		20.0				
Max Q Clear Time (g_c+I1), s	6.4	13.4		4.2	2.9	11.6		5.2				
Green Ext Time (p_c), s	0.1	11.6		0.2	0.0	11.0		0.2				

Intersection Summary

HCM 6th Ctrl Delay 13.4

HCM 6th LOS B

Notes

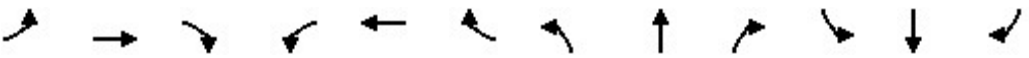
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

16: Appian Way & Allview Ave

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Traffic Volume (veh/h)	123	0	29	0	0	0	85	818	0	0	852	108
Future Volume (veh/h)	123	0	29	0	0	0	85	818	0	0	852	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	135	0	0	0	0	0	93	899	0	0	936	117
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	177	0	0	0	2	0	121	1441	0	2	1061	133
Arrive On Green	0.10	0.00	0.00	0.00	0.00	0.00	0.07	0.78	0.00	0.00	0.66	0.66
Sat Flow, veh/h	1758	0	0	0	1856	0	1767	1856	0	1767	1616	202
Grp Volume(v), veh/h	135	0	0	0	0	0	93	899	0	0	0	1053
Grp Sat Flow(s),veh/h/ln	1758	0	0	0	1856	0	1767	1856	0	1767	0	1818
Q Serve(g_s), s	5.8	0.0	0.0	0.0	0.0	0.0	4.0	16.3	0.0	0.0	0.0	36.6
Cycle Q Clear(g_c), s	5.8	0.0	0.0	0.0	0.0	0.0	4.0	16.3	0.0	0.0	0.0	36.6
Prop In Lane	1.00		0.00	0.00		0.00	1.00		0.00	1.00		0.11
Lane Grp Cap(c), veh/h	177	0	0	0	2	0	121	1441	0	2	0	1194
V/C Ratio(X)	0.76	0.00	0.00	0.00	0.00	0.00	0.77	0.62	0.00	0.00	0.00	0.88
Avail Cap(c_a), veh/h	682	0	0	0	719	0	685	1441	0	685	0	1410
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	33.9	0.0	0.0	0.0	0.0	0.0	35.5	3.8	0.0	0.0	0.0	10.9
Incr Delay (d2), s/veh	2.5	0.0	0.0	0.0	0.0	0.0	3.9	1.0	0.0	0.0	0.0	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	0.0	0.0	0.0	0.0	1.8	3.4	0.0	0.0	0.0	12.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.4	0.0	0.0	0.0	0.0	0.0	39.3	4.7	0.0	0.0	0.0	17.4
LnGrp LOS	D	A	A	A	A	A	D	A	A	A	A	B
Approach Vol, veh/h		135			0			992			1053	
Approach Delay, s/veh		36.4			0.0			8.0			17.4	
Approach LOS		D						A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	65.6		11.8	9.3	56.3		0.0				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	30.0	60.0		30.0	30.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	0.0	18.3		7.8	6.0	38.6		0.0				
Green Ext Time (p_c), s	0.0	12.8		0.5	0.1	12.2		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				14.3								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary

17: Appian Way & EB I-80 Off-Ramp/EB I-80 On-Ramp

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	459	4	138	0	0	0	0	548	519	0	1108	399
Future Volume (veh/h)	459	4	138	0	0	0	0	548	519	0	1108	399
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	544	0	71				0	719	341	0	1231	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				0	3	3	0	3	3
Cap, veh/h	640	0	285				0	2537	1074	0	2410	
Arrive On Green	0.18	0.00	0.18				0.00	0.68	0.68	0.00	1.00	0.00
Sat Flow, veh/h	3534	0	1572				0	3711	1571	0	3711	0
Grp Volume(v), veh/h	544	0	71				0	719	341	0	1231	0
Grp Sat Flow(s),veh/h/ln	1767	0	1572				0	1856	1571	0	1763	0
Q Serve(g_s), s	9.7	0.0	2.5				0.0	4.9	5.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.7	0.0	2.5				0.0	4.9	5.7	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	640	0	285				0	2537	1074	0	2410	
V/C Ratio(X)	0.85	0.00	0.25				0.00	0.28	0.32	0.00	0.51	
Avail Cap(c_a), veh/h	1087	0	484				0	2537	1074	0	2410	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.00	0.09	0.00
Uniform Delay (d), s/veh	25.8	0.0	22.8				0.0	4.0	4.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.2				0.0	0.3	0.8	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	0.9				0.0	1.3	1.4	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.0	0.0	23.0				0.0	4.3	4.9	0.0	0.1	0.0
LnGrp LOS	C	A	C				A	A	A	A	A	
Approach Vol, veh/h	615						1060			1231		
Approach Delay, s/veh	26.6						4.5			0.1		
Approach LOS	C						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	48.5			16.5			48.5					
Change Period (Y+Rc), s	4.1			* 4.7			4.1					
Max Green Setting (Gmax), s	36.2			* 20			36.2					
Max Q Clear Time (g_c+I1), s	7.7			11.7			2.0					
Green Ext Time (p_c), s	0.8			0.1			1.8					
Intersection Summary												
HCM 6th Ctrl Delay				7.3								
HCM 6th LOS				A								
Notes												
User approved volume balancing among the lanes for turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary

18: Appian Way & WB I-80 On-Ramp/WB I-80 Off-Ramp

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	558	10	385	188	827	0	0	944	713
Future Volume (veh/h)	0	0	0	558	10	385	188	827	0	0	944	713
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				742	0	211	216	951	0	0	1085	0
Peak Hour Factor				0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %				3	3	3	3	3	0	0	3	3
Cap, veh/h				788	0	350	240	2528	0	0	1948	
Arrive On Green				0.22	0.00	0.22	0.14	0.72	0.00	0.00	0.55	0.00
Sat Flow, veh/h				3534	0	1568	1767	3618	0	0	3711	0
Grp Volume(v), veh/h				742	0	211	216	951	0	0	1085	0
Grp Sat Flow(s),veh/h/ln				1767	0	1568	1767	1763	0	0	1763	0
Q Serve(g_s), s				26.8	0.0	15.7	15.6	13.6	0.0	0.0	25.9	0.0
Cycle Q Clear(g_c), s				26.8	0.0	15.7	15.6	13.6	0.0	0.0	25.9	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				788	0	350	240	2528	0	0	1948	
V/C Ratio(X)				0.94	0.00	0.60	0.90	0.38	0.00	0.00	0.56	
Avail Cap(c_a), veh/h				1087	0	483	353	2528	0	0	1948	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.87	0.87	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				49.7	0.0	45.4	55.3	7.1	0.0	0.0	18.8	0.0
Incr Delay (d2), s/veh				10.9	0.0	0.6	12.9	0.4	0.0	0.0	1.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				12.9	0.0	6.1	7.8	4.8	0.0	0.0	10.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				60.5	0.0	46.0	68.2	7.5	0.0	0.0	19.9	0.0
LnGrp LOS				E	A	D	E	A	A	A	B	
Approach Vol, veh/h					953			1167			1085	
Approach Delay, s/veh					57.3			18.7			19.9	
Approach LOS					E			B			B	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		97.3			21.4	75.9		32.7				
Change Period (Y+Rc), s		4.1			3.7	4.1		3.7				
Max Green Setting (Gmax), s		82.2			26.0	52.5		40.0				
Max Q Clear Time (g_c+I1), s		15.6			17.6	27.9		28.8				
Green Ext Time (p_c), s		1.3			0.0	1.6		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				30.6								
HCM 6th LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary

1: Valley View Rd & Amend Rd

PM Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	57	80	431	65	80	399
Future Volume (veh/h)	57	80	431	65	80	399
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	63	19	479	54	89	443
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	282	251	1058	119	238	2012
Arrive On Green	0.16	0.16	0.33	0.33	0.13	0.57
Sat Flow, veh/h	1767	1572	3288	359	1767	3618
Grp Volume(v), veh/h	63	19	263	270	89	443
Grp Sat Flow(s),veh/h/ln	1767	1572	1763	1791	1767	1763
Q Serve(g_s), s	1.0	0.3	3.9	4.0	1.5	2.1
Cycle Q Clear(g_c), s	1.0	0.3	3.9	4.0	1.5	2.1
Prop In Lane	1.00	1.00		0.20	1.00	
Lane Grp Cap(c), veh/h	282	251	584	593	238	2012
V/C Ratio(X)	0.22	0.08	0.45	0.45	0.37	0.22
Avail Cap(c_a), veh/h	794	707	2113	2147	741	4226
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	11.9	8.8	8.8	13.2	3.5
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.8	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	1.2	1.2	0.5	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.4	12.0	9.6	9.6	13.5	3.6
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	82		533			532
Approach Delay, s/veh	12.3		9.6			5.3
Approach LOS	B		A			A
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	8.0	15.6		9.8		23.5
Change Period (Y+Rc), s	3.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	14.0	40.0		15.0		40.0
Max Q Clear Time (g_c+I1), s	3.5	6.0		3.0		4.1
Green Ext Time (p_c), s	0.1	5.2		0.1		4.6
Intersection Summary						
HCM 6th Ctrl Delay			7.8			
HCM 6th LOS			A			
Notes						
User approved pedestrian interval to be less than phase max green.						

HCM 6th Signalized Intersection Summary

2: Valley View Rd & San Pablo Dam Rd

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	386	23	9	609	407	20	5	7	144	22	117
Future Volume (veh/h)	178	386	23	9	609	407	20	5	7	144	22	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	187	406	21	9	641	0	21	5	1	152	23	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	242	1800	93	9	1397		208	38	4	368	33	240
Arrive On Green	0.14	0.53	0.53	0.01	0.40	0.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1767	3408	176	1767	3526	1572	424	248	26	1416	214	1566
Grp Volume(v), veh/h	187	209	218	9	641	0	27	0	0	175	0	25
Grp Sat Flow(s),veh/h/ln	1767	1763	1821	1767	1763	1572	698	0	0	1630	0	1566
Q Serve(g_s), s	4.6	2.8	2.9	0.2	6.0	0.0	0.1	0.0	0.0	0.0	0.0	0.6
Cycle Q Clear(g_c), s	4.6	2.8	2.9	0.2	6.0	0.0	4.3	0.0	0.0	4.2	0.0	0.6
Prop In Lane	1.00		0.10	1.00		1.00	0.78		0.04	0.87		1.00
Lane Grp Cap(c), veh/h	242	931	962	9	1397		250	0	0	400	0	240
V/C Ratio(X)	0.77	0.22	0.23	0.97	0.46		0.11	0.00	0.00	0.44	0.00	0.10
Avail Cap(c_a), veh/h	1187	2367	2446	1187	4735		988	0	0	1148	0	1052
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.6	5.6	5.6	22.2	10.0	0.0	16.4	0.0	0.0	17.8	0.0	16.3
Incr Delay (d2), s/veh	2.0	0.3	0.3	74.5	0.5	0.0	0.1	0.0	0.0	0.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.7	0.7	0.3	1.7	0.0	0.2	0.0	0.0	1.5	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.6	5.9	5.9	96.7	10.5	0.0	16.5	0.0	0.0	18.1	0.0	16.3
LnGrp LOS	C	A	A	F	B		B	A	A	B	A	B
Approach Vol, veh/h	614			650			27			200		
Approach Delay, s/veh	10.4			11.6			16.5			17.9		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.2	29.6		10.8	10.1	23.7		10.8				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	30.0	60.0		30.0	30.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.2	4.9		6.3	6.6	8.0		6.2				
Green Ext Time (p_c), s	0.0	5.4		0.1	0.2	9.7		0.6				

Intersection Summary

HCM 6th Ctrl Delay 12.0

HCM 6th LOS B

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

3: La Colina Rd/Appian Way & San Pablo Dam Rd

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	609	827	35	16	752	167	34	20	7	136	19	235
Future Volume (veh/h)	609	827	35	16	752	167	34	20	7	136	19	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	615	835	34	16	760	158	34	20	3	137	19	81
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	651	2413	98	19	1506	313	59	35	5	166	23	465
Arrive On Green	0.19	0.70	0.70	0.01	0.52	0.52	0.06	0.06	0.06	0.11	0.11	0.11
Sat Flow, veh/h	3428	3450	140	1767	2893	601	1063	625	94	1561	216	1568
Grp Volume(v), veh/h	615	427	442	16	463	455	57	0	0	156	0	81
Grp Sat Flow(s),veh/h/ln	1714	1763	1827	1767	1763	1731	1782	0	0	1777	0	1568
Q Serve(g_s), s	24.3	13.1	13.1	1.2	23.4	23.4	4.3	0.0	0.0	11.8	0.0	5.3
Cycle Q Clear(g_c), s	24.3	13.1	13.1	1.2	23.4	23.4	4.3	0.0	0.0	11.8	0.0	5.3
Prop In Lane	1.00		0.08	1.00		0.35	0.60		0.05	0.88		1.00
Lane Grp Cap(c), veh/h	651	1233	1278	19	917	901	99	0	0	189	0	465
V/C Ratio(X)	0.95	0.35	0.35	0.84	0.50	0.50	0.57	0.00	0.00	0.83	0.00	0.17
Avail Cap(c_a), veh/h	651	1233	1278	155	917	901	306	0	0	389	0	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.8	8.2	8.2	67.6	21.4	21.4	63.1	0.0	0.0	60.0	0.0	35.8
Incr Delay (d2), s/veh	22.5	0.8	0.7	28.4	2.0	2.0	1.9	0.0	0.0	3.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	5.2	5.4	0.7	10.3	10.1	2.0	0.0	0.0	5.5	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.3	8.9	8.9	96.0	23.3	23.4	65.0	0.0	0.0	63.4	0.0	35.9
LnGrp LOS	E	A	A	F	C	C	E	A	A	E	A	D
Approach Vol, veh/h	1484			934			57			237		
Approach Delay, s/veh	37.2			24.6			65.0			54.0		
Approach LOS	D			C			E			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	101.3		11.6	30.0	76.8		18.6				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	12.0	54.0		23.5	26.0	40.0		30.0				
Max Q Clear Time (g_c+I1), s	3.2	15.1		6.3	26.3	25.4		13.8				
Green Ext Time (p_c), s	0.0	10.3		0.1	0.0	7.1		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			34.9									
HCM 6th LOS			C									
Notes												

HCM 6th Signalized Intersection Summary

4: San Pablo Dam Rd & El Portal Dr

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	1085	16	6	591	425	12	13	2	374	18	67
Future Volume (veh/h)	161	1085	16	6	591	425	12	13	2	374	18	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	164	1107	16	6	603	364	12	13	0	447	0	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	187	2493	36	6	1253	756	21	22	0	508	267	0
Arrive On Green	0.11	0.70	0.70	0.00	0.60	0.60	0.02	0.02	0.00	0.14	0.00	0.00
Sat Flow, veh/h	1767	3556	51	1767	2093	1263	870	942	0	3534	1856	0
Grp Volume(v), veh/h	164	549	574	6	508	459	25	0	0	447	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	1845	1767	1763	1593	1812	0	0	1767	1856	0
Q Serve(g_s), s	12.5	18.5	18.5	0.5	22.3	22.3	1.9	0.0	0.0	17.0	0.0	0.0
Cycle Q Clear(g_c), s	12.5	18.5	18.5	0.5	22.3	22.3	1.9	0.0	0.0	17.0	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.79	0.48		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	187	1236	1293	6	1055	954	43	0	0	508	267	0
V/C Ratio(X)	0.88	0.44	0.44	0.92	0.48	0.48	0.58	0.00	0.00	0.88	0.00	0.00
Avail Cap(c_a), veh/h	193	1236	1293	193	1055	954	377	0	0	748	393	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	60.4	8.9	8.9	68.2	15.5	15.5	66.2	0.0	0.0	57.5	0.0	0.0
Incr Delay (d2), s/veh	31.3	1.2	1.1	80.6	1.6	1.7	4.5	0.0	0.0	6.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	7.3	7.7	0.4	9.4	8.6	0.9	0.0	0.0	8.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.7	10.1	10.0	148.8	17.1	17.2	70.7	0.0	0.0	63.5	0.0	0.0
LnGrp LOS	F	B	B	F	B	B	E	A	A	E	A	A
Approach Vol, veh/h	1287				973				25			
Approach Delay, s/veh	20.4				18.0				70.7			
Approach LOS	C				B				E			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.5	101.5		7.3	18.5	87.5		23.7				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	15.0	47.0		28.5	15.0	47.0		29.0				
Max Q Clear Time (g_c+I1), s	2.5	20.5		3.9	14.5	24.3		19.0				
Green Ext Time (p_c), s	0.0	12.5		0.0	0.0	10.0		0.7				
Intersection Summary												
HCM 6th Ctrl Delay	27.1											
HCM 6th LOS	C											
Notes												

HCM Signalized Intersection Capacity Analysis

5: I-80 EB Off Ramp/I-80 EB On Ramp & Amador St & San Pablo Dam Rd

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	NBR2	NWL	NWR	NWR2
Lane Configurations												
Traffic Volume (vph)	259	320	26	672	35	206	0	424	6	52	209	503
Future Volume (vph)	259	320	26	672	35	206	0	424	6	52	209	503
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Lane Util. Factor		0.95		0.95	1.00	0.95	0.91	0.95		1.00		0.95
Frpb, ped/bikes		1.00		1.00	0.97	1.00	0.99	1.00		1.00		1.00
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00		1.00		1.00
Frt		0.99		1.00	0.85	1.00	0.86	0.85		0.87		0.85
Flt Protected		0.98		1.00	1.00	0.95	1.00	1.00		0.99		1.00
Satd. Flow (prot)		3405		3505	1527	1665	1425	1490		1595		1490
Flt Permitted		0.98		1.00	1.00	0.95	1.00	1.00		0.99		1.00
Satd. Flow (perm)		3405		3505	1527	1665	1425	1490		1595		1490
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	282	348	28	730	38	224	0	461	7	57	227	547
RTOR Reduction (vph)	0	0	0	0	29	0	0	0	0	49	0	274
Lane Group Flow (vph)	0	658	0	730	9	202	248	242	0	372	0	136
Confl. Peds. (#/hr)			2		2			1				
Confl. Bikes (#/hr)			2		1							
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Split	NA		NA	Perm	Split	NA	custom		Prot		Perm
Protected Phases	1 8	1 8		2		7	7	2 7		4		
Permitted Phases					2							4
Actuated Green, G (s)		57.8		37.6	37.6	31.5	31.5	69.1		25.1		25.1
Effective Green, g (s)		57.8		37.6	37.6	31.5	31.5	69.1		25.1		25.1
Actuated g/C Ratio		0.35		0.23	0.23	0.19	0.19	0.42		0.15		0.15
Clearance Time (s)				3.0	3.0	3.0	3.0			3.0		3.0
Vehicle Extension (s)				0.2	0.2	0.2	0.2			0.2		0.2
Lane Grp Cap (vph)		1200		803	350	319	273	627		244		228
v/s Ratio Prot		c0.19		c0.21		0.12	c0.17	0.16		c0.23		
v/s Ratio Perm					0.01							0.09
v/c Ratio		0.55		0.91	0.02	0.63	0.91	0.39		1.52		0.59
Uniform Delay, d1		42.6		61.5	49.0	60.9	64.8	32.8		69.5		64.7
Progression Factor		0.38		1.00	1.00	1.00	1.00	1.00		1.00		1.00
Incremental Delay, d2		0.2		13.8	0.0	3.0	30.7	0.1		255.6		2.8
Delay (s)		16.5		75.3	49.0	63.9	95.6	32.9		325.1		67.5
Level of Service		B		E	D	E	F	C		F		E
Approach Delay (s)		16.5		74.0			64.4			198.0		
Approach LOS		B		E			E			F		
Intersection Summary												
HCM 2000 Control Delay			93.9			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			164.0			Sum of lost time (s)			15.0			
Intersection Capacity Utilization			85.4%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

6: I-80 WB On Ramp/I-80 WB Off Ramp & San Pablo Dam Rd

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↖↑					↖	↗	
Traffic Volume (vph)	0	616	406	362	502	0	0	0	0	48	3	482
Future Volume (vph)	0	616	406	362	502	0	0	0	0	48	3	482
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0					3.0	3.0	
Lane Util. Factor		0.95	1.00		0.95					1.00	1.00	
Frpb, ped/bikes		1.00	0.97		1.00					1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00					1.00	1.00	
Frt		1.00	0.85		1.00					1.00	0.85	
Flt Protected		1.00	1.00		0.98					0.95	1.00	
Satd. Flow (prot)		3505	1523		3433					1752	1570	
Flt Permitted		1.00	1.00		0.55					0.95	1.00	
Satd. Flow (perm)		3505	1523		1930					1752	1570	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	629	414	369	512	0	0	0	0	49	3	492
RTOR Reduction (vph)	0	0	288	0	0	0	0	0	0	0	433	0
Lane Group Flow (vph)	0	629	126	0	881	0	0	0	0	49	62	0
Confl. Peds. (#/hr)			7			2						
Confl. Bikes (#/hr)					1							
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		1		2 7 4	1 2 7 4					8	8	
Permitted Phases			1									
Actuated Green, G (s)		35.1	35.1		135.3					19.7	19.7	
Effective Green, g (s)		35.1	35.1		135.3					19.7	19.7	
Actuated g/C Ratio		0.21	0.21		0.83					0.12	0.12	
Clearance Time (s)		3.0	3.0							3.0	3.0	
Vehicle Extension (s)		0.2	0.2							0.2	0.2	
Lane Grp Cap (vph)		750	325		2510					210	188	
v/s Ratio Prot		c0.18			c0.21					0.03	c0.04	
v/s Ratio Perm			0.08		0.08							
v/c Ratio		0.84	0.39		0.35					0.23	0.33	
Uniform Delay, d1		61.7	55.2		3.5					65.3	66.1	
Progression Factor		1.00	1.00		0.04					1.00	1.00	
Incremental Delay, d2		7.8	0.3		0.0					0.2	0.4	
Delay (s)		69.6	55.5		0.1					65.5	66.5	
Level of Service		E	E		A					E	E	
Approach Delay (s)		64.0			0.1			0.0			66.4	
Approach LOS		E			A			A			E	
Intersection Summary												
HCM 2000 Control Delay			41.7			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			164.0			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			90.3%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

7: I-80 EB Off Ramp/I-80 EB On Ramp & El Portal Dr

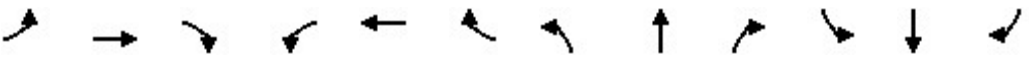
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					 							
Traffic Volume (veh/h)	351	511	0	0	496	227	275	4	137	0	0	0
Future Volume (veh/h)	351	511	0	0	496	227	275	4	137	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	362	527	0	0	511	191	284	4	28			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	391	1358	0	0	1165	433	323	5	291			
Arrive On Green	0.22	0.73	0.00	0.00	0.46	0.46	0.19	0.19	0.19			
Sat Flow, veh/h	1767	1856	0	0	2606	935	1744	25	1572			
Grp Volume(v), veh/h	362	527	0	0	358	344	288	0	28			
Grp Sat Flow(s),veh/h/ln	1767	1856	0	0	1763	1686	1768	0	1572			
Q Serve(g_s), s	20.1	10.6	0.0	0.0	13.7	13.8	15.9	0.0	1.5			
Cycle Q Clear(g_c), s	20.1	10.6	0.0	0.0	13.7	13.8	15.9	0.0	1.5			
Prop In Lane	1.00		0.00	0.00		0.55	0.99		1.00			
Lane Grp Cap(c), veh/h	391	1358	0	0	817	782	327	0	291			
V/C Ratio(X)	0.93	0.39	0.00	0.00	0.44	0.44	0.88	0.00	0.10			
Avail Cap(c_a), veh/h	583	1358	0	0	817	782	442	0	393			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.74	0.74	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	38.1	5.0	0.0	0.0	18.0	18.1	39.7	0.0	33.8			
Incr Delay (d2), s/veh	9.9	0.6	0.0	0.0	1.7	1.8	11.9	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.5	3.4	0.0	0.0	5.9	5.7	7.8	0.0	0.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.0	5.6	0.0	0.0	19.8	19.9	51.5	0.0	33.9			
LnGrp LOS	D	A	A	A	B	B	D	A	C			
Approach Vol, veh/h	889			702			316					
Approach Delay, s/veh	22.9			19.8			50.0					
Approach LOS	C			B			D					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	77.3			26.8			50.5			22.7		
Change Period (Y+Rc), s	4.1			* 4.7			4.1			4.2		
Max Green Setting (Gmax), s	66.7			* 33			27.7			25.0		
Max Q Clear Time (g_c+I1), s	12.6			22.1			15.8			17.9		
Green Ext Time (p_c), s	3.7			0.1			3.7			0.7		
Intersection Summary												
HCM 6th Ctrl Delay	26.2											
HCM 6th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

8: I-80 WB On Ramp/I-80 WB Off Ramp & El Portal Dr

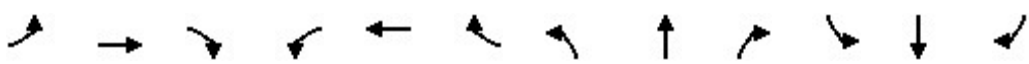
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑						↖	↗
Traffic Volume (veh/h)	0	634	300	194	579	0	0	0	0	230	1	422
Future Volume (veh/h)	0	634	300	194	579	0	0	0	0	230	1	422
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	1856	1856
Adj Flow Rate, veh/h	0	660	204	202	603	0				240	1	163
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0				3	3	3
Cap, veh/h	0	570	477	731	1414	0				273	1	244
Arrive On Green	0.00	0.31	0.31	0.41	0.76	0.00				0.16	0.16	0.16
Sat Flow, veh/h	0	1856	1552	1767	1856	0				1760	7	1572
Grp Volume(v), veh/h	0	660	204	202	603	0				241	0	163
Grp Sat Flow(s),veh/h/ln	0	1856	1552	1767	1856	0				1768	0	1572
Q Serve(g_s), s	0.0	30.7	10.5	7.6	11.5	0.0				13.3	0.0	9.8
Cycle Q Clear(g_c), s	0.0	30.7	10.5	7.6	11.5	0.0				13.3	0.0	9.8
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	570	477	731	1414	0				274	0	244
V/C Ratio(X)	0.00	1.16	0.43	0.28	0.43	0.00				0.88	0.00	0.67
Avail Cap(c_a), veh/h	0	570	477	731	1414	0				442	0	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.85	0.85	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	34.7	27.6	19.4	4.2	0.0				41.3	0.0	39.8
Incr Delay (d2), s/veh	0.0	89.7	2.8	0.1	0.8	0.0				6.9	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	27.5	4.2	3.0	3.5	0.0				6.2	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	124.4	30.4	19.5	5.0	0.0				48.2	0.0	41.0
LnGrp LOS	A	F	C	B	A	A				D	A	D
Approach Vol, veh/h		864			805						404	
Approach Delay, s/veh		102.2			8.6						45.3	
Approach LOS		F			A						D	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	45.5	34.8		19.7		80.3						
Change Period (Y+Rc), s	4.1	* 4.1		* 4.2		4.1						
Max Green Setting (Gmax), s	30.0	* 31		* 25		66.7						
Max Q Clear Time (g_c+I1), s	9.6	32.7		15.3		13.5						
Green Ext Time (p_c), s	0.0	0.0		0.2		0.6						
Intersection Summary												
HCM 6th Ctrl Delay			54.8									
HCM 6th LOS			D									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

9: San Pablo Ave & 23rd Ave/Road 20

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	463	90	101	15	118	53	125	547	35	30	331	439
Future Volume (veh/h)	463	90	101	15	118	53	125	547	35	30	331	439
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	555	0	0	16	124	0	132	576	37	32	348	462
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	633	0		26	205		162	1485	95	41	1319	578
Arrive On Green	0.18	0.00	0.00	0.13	0.13	0.00	0.09	0.44	0.44	0.02	0.37	0.37
Sat Flow, veh/h	3534	0	1572	211	1634	1572	1767	3356	215	1767	3526	1545
Grp Volume(v), veh/h	555	0	0	140	0	0	132	302	311	32	348	462
Grp Sat Flow(s),veh/h/ln	1767	0	1572	1845	0	1572	1767	1763	1809	1767	1763	1545
Q Serve(g_s), s	16.0	0.0	0.0	7.5	0.0	0.0	7.7	12.0	12.1	1.9	7.2	27.9
Cycle Q Clear(g_c), s	16.0	0.0	0.0	7.5	0.0	0.0	7.7	12.0	12.1	1.9	7.2	27.9
Prop In Lane	1.00		1.00	0.11		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	633	0		231	0		162	780	800	41	1319	578
V/C Ratio(X)	0.88	0.00		0.61	0.00		0.82	0.39	0.39	0.78	0.26	0.80
Avail Cap(c_a), veh/h	677	0		883	0		338	1013	1039	169	2025	888
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	0.0	0.0	43.2	0.0	0.0	46.6	19.6	19.6	50.7	22.7	29.2
Incr Delay (d2), s/veh	11.2	0.0	0.0	1.0	0.0	0.0	3.8	0.7	0.7	11.3	0.2	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	0.0	3.5	0.0	0.0	3.5	4.9	5.1	1.0	2.9	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.0	0.0	0.0	44.2	0.0	0.0	50.4	20.3	20.3	62.1	22.9	34.8
LnGrp LOS	D	A		D	A		D	C	C	E	C	C
Approach Vol, veh/h	555			140			745			842		
Approach Delay, s/veh	53.0			44.2			25.6			30.9		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.4	52.2		24.7	15.6	45.1		19.1				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	10.0	60.0		20.0	20.0	60.0		50.0				
Max Q Clear Time (g_c+I1), s	3.9	14.1		18.0	9.7	29.9		9.5				
Green Ext Time (p_c), s	0.0	8.6		0.3	0.1	9.2		0.6				

Intersection Summary

HCM 6th Ctrl Delay 35.4

HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

10: El Portal Dr & Road 20

PM Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	53	242	180	545	534	49
Future Volume (veh/h)	53	242	180	545	534	49
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	67	0	228	690	676	53
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	86		255	3110	2493	1109
Arrive On Green	0.05	0.00	0.14	0.88	0.71	0.71
Sat Flow, veh/h	1767	1572	1767	3618	3618	1568
Grp Volume(v), veh/h	67	0	228	690	676	53
Grp Sat Flow(s),veh/h/ln	1767	1572	1767	1763	1763	1568
Q Serve(g_s), s	4.9	0.0	16.5	3.7	9.0	1.3
Cycle Q Clear(g_c), s	4.9	0.0	16.5	3.7	9.0	1.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	86		255	3110	2493	1109
V/C Ratio(X)	0.78		0.90	0.22	0.27	0.05
Avail Cap(c_a), veh/h	394		435	3110	2493	1109
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.1	0.0	54.7	1.1	6.9	5.8
Incr Delay (d2), s/veh	5.6	0.0	6.6	0.2	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	7.7	0.6	3.3	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	66.8	0.0	61.3	1.3	7.2	5.8
LnGrp LOS	E		E	A	A	A
Approach Vol, veh/h	67			918	729	
Approach Delay, s/veh	66.8			16.2	7.1	
Approach LOS	E			B	A	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	22.7	96.9			119.7	10.3
Change Period (Y+Rc), s	4.0	5.0			5.0	4.0
Max Green Setting (Gmax), s	32.0	56.0			92.0	29.0
Max Q Clear Time (g_c+I1), s	18.5	11.0			5.7	6.9
Green Ext Time (p_c), s	0.3	8.4			8.2	0.1
Intersection Summary						
HCM 6th Ctrl Delay			14.3			
HCM 6th LOS			B			
Notes						
User approved pedestrian interval to be less than phase max green.						
User approved ignoring U-Turning movement.						
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.						

HCM 6th AWSC
11: Fourdham St & Rollingwood Dr

PM Peak Hour

Intersection

Intersection Delay, s/veh 10

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	222	47	14	6	29	20	10	87	3	12	72	88
Future Vol, veh/h	222	47	14	6	29	20	10	87	3	12	72	88
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	234	49	15	6	31	21	11	92	3	13	76	93
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.1	8.3	9	9.2
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	78%	11%	7%
Vol Thru, %	87%	17%	53%	42%
Vol Right, %	3%	5%	36%	51%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	283	55	172
LT Vol	10	222	6	12
Through Vol	87	47	29	72
RT Vol	3	14	20	88
Lane Flow Rate	105	298	58	181
Geometry Grp	1	1	1	1
Degree of Util (X)	0.148	0.4	0.078	0.235
Departure Headway (Hd)	5.056	4.832	4.821	4.672
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	704	742	736	764
Service Time	3.121	2.887	2.893	2.729
HCM Lane V/C Ratio	0.149	0.402	0.079	0.237
HCM Control Delay	9	11.1	8.3	9.2
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.5	1.9	0.3	0.9

HCM 6th Signalized Intersection Summary

12: El Portal Dr & Glenlock St

PM Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	121	10	0	818	836	167
Future Volume (veh/h)	121	10	0	818	836	167
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	0	1856	1856	1856
Adj Flow Rate, veh/h	126	6	0	852	871	168
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	0	3	3	3
Cap, veh/h	156	7	0	1485	1209	233
Arrive On Green	0.09	0.09	0.00	0.80	0.80	0.80
Sat Flow, veh/h	1665	79	0	1856	1511	291
Grp Volume(v), veh/h	133	0	0	852	0	1039
Grp Sat Flow(s),veh/h/ln	1758	0	0	1856	0	1803
Q Serve(g_s), s	7.0	0.0	0.0	16.1	0.0	25.8
Cycle Q Clear(g_c), s	7.0	0.0	0.0	16.1	0.0	25.8
Prop In Lane	0.95	0.05	0.00			0.16
Lane Grp Cap(c), veh/h	164	0	0	1485	0	1443
V/C Ratio(X)	0.81	0.00	0.00	0.57	0.00	0.72
Avail Cap(c_a), veh/h	313	0	0	1485	0	1443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.2	0.0	0.0	3.5	0.0	4.5
Incr Delay (d2), s/veh	3.6	0.0	0.0	1.6	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	4.1	0.0	6.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.8	0.0	0.0	5.1	0.0	7.6
LnGrp LOS	D	A	A	A	A	A
Approach Vol, veh/h	133			852	1039	
Approach Delay, s/veh	45.8			5.1	7.6	
Approach LOS	D			A	A	
Timer - Assigned Phs	2			4		6
Phs Duration (G+Y+Rc), s	82.1			12.9		82.1
Change Period (Y+Rc), s	6.1			4.0		6.1
Max Green Setting (Gmax), s	68.0			16.9		68.0
Max Q Clear Time (g_c+I1), s	18.1			9.0		27.8
Green Ext Time (p_c), s	22.2			0.1		26.8
Intersection Summary						
HCM 6th Ctrl Delay			9.1			
HCM 6th LOS			A			

HCM 6th TWSC
13: San Pablo Dam Rd & D Avila Way

PM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	571	810	2	2	10
Future Vol, veh/h	11	571	810	2	2	10
Conflicting Peds, #/hr	4	0	0	4	3	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	12	642	910	2	2	11
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	916	0	-	0	1263	461
Stage 1	-	-	-	-	915	-
Stage 2	-	-	-	-	348	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	734	-	-	-	160	545
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	731	-	-	-	156	542
Mov Cap-2 Maneuver	-	-	-	-	156	-
Stage 1	-	-	-	-	341	-
Stage 2	-	-	-	-	680	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.2	0		11.8		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	731	-	-	-	542	
HCM Lane V/C Ratio	0.017	-	-	-	0.021	
HCM Control Delay (s)	10	-	-	-	11.8	
HCM Lane LOS	B	-	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

HCM 6th Signalized Intersection Summary

14: Valley View Rd & Morningside Dr

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	26	1	105	29	662	28	97	353	138
Future Volume (veh/h)	0	0	0	26	1	105	29	662	28	97	353	138
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.84	1.00		0.99	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h				32	1	26	36	817	33	120	436	147
Peak Hour Factor				0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %				3	3	3	3	3	3	3	3	3
Cap, veh/h				673	19	488	66	1165	47	153	994	331
Arrive On Green				0.38	0.38	0.38	0.04	0.34	0.34	0.09	0.39	0.39
Sat Flow, veh/h				1767	49	1283	1767	3452	139	1767	2572	857
Grp Volume(v), veh/h				32	0	27	36	417	433	120	297	286
Grp Sat Flow(s),veh/h/ln				1767	0	1333	1767	1763	1828	1767	1763	1666
Q Serve(g_s), s				0.7	0.0	0.8	1.2	12.3	12.3	4.0	7.5	7.6
Cycle Q Clear(g_c), s				0.7	0.0	0.8	1.2	12.3	12.3	4.0	7.5	7.6
Prop In Lane				1.00		0.96	1.00		0.08	1.00		0.51
Lane Grp Cap(c), veh/h				673	0	507	66	595	617	153	682	644
V/C Ratio(X)				0.05	0.00	0.05	0.54	0.70	0.70	0.78	0.44	0.44
Avail Cap(c_a), veh/h				1179	0	889	590	1176	1220	590	1176	1112
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				11.7	0.0	11.7	28.3	17.2	17.2	26.8	13.6	13.6
Incr Delay (d2), s/veh				0.0	0.0	0.0	2.5	1.5	1.5	3.3	0.4	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.3	0.0	0.2	0.5	4.7	4.9	1.7	2.7	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				11.7	0.0	11.8	30.9	18.7	18.7	30.1	14.0	14.1
LnGrp LOS				B	A	B	C	B	B	C	B	B
Approach Vol, veh/h					59			886			703	
Approach Delay, s/veh					11.7			19.2			16.8	
Approach LOS					B			B			B	
Timer - Assigned Phs	1	2			5	6		8				
Phs Duration (G+Y+Rc), s	8.7	24.4			5.8	27.4		26.8				
Change Period (Y+Rc), s	3.5	* 4.2			3.5	* 4.2		4.0				
Max Green Setting (Gmax), s	20.0	* 40			20.0	* 40		40.0				
Max Q Clear Time (g_c+I1), s	6.0	14.3			3.2	9.6		2.8				
Green Ext Time (p_c), s	0.0	5.9			0.0	4.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				17.9								
HCM 6th LOS				B								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

15: Sobrante Ave & Valley View Rd

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	546	13	98	738	10	16	29	207	4	10	25
Future Volume (veh/h)	34	546	13	98	738	10	16	29	207	4	10	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	38	613	0	110	829	10	18	33	109	4	11	2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	44	1312		142	1525	18	24	44	146	6	15	3
Arrive On Green	0.03	0.37	0.00	0.08	0.43	0.43	0.13	0.13	0.13	0.01	0.01	0.01
Sat Flow, veh/h	1767	3618	0	1767	3567	43	185	339	1119	422	1161	211
Grp Volume(v), veh/h	38	613	0	110	410	429	160	0	0	17	0	0
Grp Sat Flow(s),veh/h/ln	1767	1763	0	1767	1763	1848	1642	0	0	1795	0	0
Q Serve(g_s), s	0.9	5.7	0.0	2.6	7.5	7.5	4.1	0.0	0.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	0.9	5.7	0.0	2.6	7.5	7.5	4.1	0.0	0.0	0.4	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.02	0.11		0.68	0.24		0.12
Lane Grp Cap(c), veh/h	44	1312		142	754	790	214	0	0	24	0	0
V/C Ratio(X)	0.86	0.47		0.77	0.54	0.54	0.75	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	816	4068		816	2034	2132	758	0	0	828	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.1	10.3	0.0	19.5	9.3	9.3	18.1	0.0	0.0	21.3	0.0	0.0
Incr Delay (d2), s/veh	16.0	0.4	0.0	3.4	0.9	0.8	2.0	0.0	0.0	14.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.7	0.0	1.1	2.2	2.3	1.4	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	10.7	0.0	22.9	10.1	10.1	20.1	0.0	0.0	35.5	0.0	0.0
LnGrp LOS	D	B		C	B	B	C	A	A	D	A	A
Approach Vol, veh/h	651			949			160			17		
Approach Delay, s/veh	12.2			11.6			20.1			35.5		
Approach LOS	B			B			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	21.6		4.6	5.1	24.0		9.7				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	20.0	50.0		20.0	20.0	50.0		20.0				
Max Q Clear Time (g_c+I1), s	4.6	7.7		2.4	2.9	9.5		6.1				
Green Ext Time (p_c), s	0.1	6.7		0.0	0.0	9.0		0.5				
Intersection Summary												
HCM 6th Ctrl Delay	12.8											
HCM 6th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary

16: Appian Way & Allview Ave

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Traffic Volume (veh/h)	94	0	8	0	0	1	16	1151	0	1	792	78
Future Volume (veh/h)	94	0	8	0	0	1	16	1151	0	1	792	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.94	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	99	0	0	0	0	1	17	1212	0	1	834	81
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	132	0	0	0	0	13	19	1302	0	2	1148	112
Arrive On Green	0.07	0.00	0.00	0.00	0.00	0.01	0.01	0.70	0.00	0.00	0.69	0.69
Sat Flow, veh/h	1767	0	0	0	0	1476	1767	1856	0	1767	1661	161
Grp Volume(v), veh/h	99	0	0	0	0	1	17	1212	0	1	0	915
Grp Sat Flow(s),veh/h/ln	1767	0	0	0	0	1476	1767	1856	0	1767	0	1823
Q Serve(g_s), s	4.5	0.0	0.0	0.0	0.0	0.1	0.8	45.8	0.0	0.0	0.0	25.4
Cycle Q Clear(g_c), s	4.5	0.0	0.0	0.0	0.0	0.1	0.8	45.8	0.0	0.0	0.0	25.4
Prop In Lane	1.00		0.00	0.00		1.00	1.00		0.00	1.00		0.09
Lane Grp Cap(c), veh/h	132	0	0	0	0	13	19	1302	0	2	0	1260
V/C Ratio(X)	0.75	0.00	0.00	0.00	0.00	0.08	0.88	0.93	0.00	0.46	0.00	0.73
Avail Cap(c_a), veh/h	651	0	0	0	0	544	651	1366	0	651	0	1342
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.0	0.0	0.0	0.0	0.0	40.1	40.2	10.5	0.0	40.7	0.0	7.8
Incr Delay (d2), s/veh	3.2	0.0	0.0	0.0	0.0	1.0	33.5	11.5	0.0	47.6	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	0.0	0.0	0.0	0.5	16.9	0.0	0.0	0.0	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	0.0	0.0	0.0	0.0	41.1	73.8	22.0	0.0	88.3	0.0	9.9
LnGrp LOS	D	A	A	A	A	D	E	C	A	F	A	A
Approach Vol, veh/h	99			1			1229			916		
Approach Delay, s/veh	40.2			41.1			22.7			10.0		
Approach LOS	D			D			C			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.0	62.7		10.1	4.9	61.8		4.7				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	30.0	60.0		30.0	30.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.0	47.8		6.5	2.8	27.4		2.1				
Green Ext Time (p_c), s	0.0	9.4		0.3	0.0	12.3		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	18.3											
HCM 6th LOS	B											

HCM 6th Signalized Intersection Summary 17: Appian Way & EB I-80 Off-Ramp/EB I-80 On-Ramp

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	25	98	0	0	0	0	862	1116	0	990	224
Future Volume (veh/h)	330	25	98	0	0	0	0	862	1116	0	990	224
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	352	0	27				0	739	979	0	1000	0
Peak Hour Factor	0.99	0.99	0.99				0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	3	3	3				0	3	3	0	3	3
Cap, veh/h	445	0	198				0	1389	2353	0	2638	
Arrive On Green	0.13	0.00	0.13				0.00	0.75	0.75	0.00	1.00	0.00
Sat Flow, veh/h	3534	0	1572				0	1856	3145	0	3711	0
Grp Volume(v), veh/h	352	0	27				0	739	979	0	1000	0
Grp Sat Flow(s),veh/h/ln	1767	0	1572				0	1856	1572	0	1763	0
Q Serve(g_s), s	6.8	0.0	1.1				0.0	11.7	8.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.8	0.0	1.1				0.0	11.7	8.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	445	0	198				0	1389	2353	0	2638	
V/C Ratio(X)	0.79	0.00	0.14				0.00	0.53	0.42	0.00	0.38	
Avail Cap(c_a), veh/h	1262	0	562				0	1389	2353	0	2638	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.00	0.49	0.00
Uniform Delay (d), s/veh	29.7	0.0	27.2				0.0	3.7	3.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.1				0.0	1.5	0.5	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.4				0.0	2.8	1.5	0.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	0.0	27.3				0.0	5.1	3.8	0.0	0.2	0.0
LnGrp LOS	C	A	C				A	A	A	A	A	
Approach Vol, veh/h	379						1718			1000		
Approach Delay, s/veh	30.6						4.4			0.2		
Approach LOS	C						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	56.5			13.5			56.5					
Change Period (Y+Rc), s	4.1			* 4.7			4.1					
Max Green Setting (Gmax), s	36.2			* 25			36.2					
Max Q Clear Time (g_c+I1), s	13.7			8.8			2.0					
Green Ext Time (p_c), s	1.0			0.1			1.4					
Intersection Summary												
HCM 6th Ctrl Delay	6.2											
HCM 6th LOS	A											
Notes												
User approved volume balancing among the lanes for turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary

18: Appian Way & WB I-80 On-Ramp/WB I-80 Off-Ramp

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	521	3	315	236	915	0	0	799	524
Future Volume (veh/h)	0	0	0	521	3	315	236	915	0	0	799	524
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				633	0	155	254	984	0	0	859	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				3	3	3	3	3	0	0	3	3
Cap, veh/h				677	0	301	276	2654	0	0	2010	
Arrive On Green				0.19	0.00	0.19	0.16	0.75	0.00	0.00	0.57	0.00
Sat Flow, veh/h				3534	0	1572	1767	3618	0	0	3711	0
Grp Volume(v), veh/h				633	0	155	254	984	0	0	859	0
Grp Sat Flow(s),veh/h/ln				1767	0	1572	1767	1763	0	0	1763	0
Q Serve(g_s), s				24.7	0.0	12.4	19.8	13.4	0.0	0.0	19.4	0.0
Cycle Q Clear(g_c), s				24.7	0.0	12.4	19.8	13.4	0.0	0.0	19.4	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				677	0	301	276	2654	0	0	2010	
V/C Ratio(X)				0.94	0.00	0.51	0.92	0.37	0.00	0.00	0.43	
Avail Cap(c_a), veh/h				1161	0	517	467	2654	0	0	2010	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.77	0.77	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				55.7	0.0	50.8	58.2	5.9	0.0	0.0	17.1	0.0
Incr Delay (d2), s/veh				5.3	0.0	0.5	7.6	0.3	0.0	0.0	0.7	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				11.4	0.0	4.9	9.4	4.6	0.0	0.0	7.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				61.0	0.0	51.3	65.8	6.2	0.0	0.0	17.8	0.0
LnGrp LOS				E	A	D	E	A	A	A	B	
Approach Vol, veh/h					788			1238			859	
Approach Delay, s/veh					59.1			18.5			17.8	
Approach LOS					E			B			B	
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	109.5			25.6			83.9			30.5		
Change Period (Y+Rc), s	4.1			3.7			4.1			3.7		
Max Green Setting (Gmax), s	86.2			37.0			45.5			46.0		
Max Q Clear Time (g_c+I1), s	15.4			21.8			21.4			26.7		
Green Ext Time (p_c), s	1.4			0.1			1.2			0.1		

Intersection Summary

HCM 6th Ctrl Delay 29.4

HCM 6th LOS C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.