Appendix B CalEEMod Air Quality Emissions Modeling & Health Risk Assessment

CalEEMod Air Quality Emissions Modeling

Construction Emissions Summary

Summary of Modeled Maximum Daily Construction-Related Emissions of Criteria Air Pollutants and Precursors

Portion of Construction Phase	Maximum Daily Emissions (lb/day)		
	VOC	NO_X	PM_{10}
Rough Grade	6.5	76.1	12.9
Base for Paving	6.8	29.8	1.7
Paving - Asphalt	6.3	19.5	1.2
Concrete Foundation / Slab on Grade	4.2	23.5	1.4
Building Erection	*3.8*	*35.5*	*3.5*
Architectural Coating	*80.0*	*2.4*	*0.5*
Maximum daily emissions	**80.0**	**76.1**	**12.9**
PCAPCD significance threshold	**82**	**82**	**82**
Exceeds Threshold?	**No**	**No**	**No**

Notes: lb/day = pounds per day; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less; VOC = volatile organic compounds; PCAPCD = Placer County

Source: AECOM 2019; See Appendix X for detailed modeling assumptions, outputs, and results.

Daily Construction Emissions Detailed - (lbs/day):

Phase	ROG	NOX	PM10 (Total)	PM10 Exhaust	PM2.5 Exhaust
Rough Grade	6.518	76.1018	12.9156	3.0	2.8
On-Site	5.9785	62.5315	11.8518	2.9196	2.7246
Off-Site	0.5395	13.5703	1.0638	0.1	0.1
Base for Paving	6.7619	29.7766	1.7036	0.8	0.7
On-Site	6.2406	15.0626	0.6908	0.6908	0.6355
Off-Site	0.5213	14.714	1.0128	**0.0661**	**0.0632**
Paving - Asphalt	6.3361	19.4584	1.1678	0.6817	0.7658
On-Site	6.0739	12.7943	0.6515	0.6515	0.5994
Off-Site	0.2622	6.6641	0.5163	0.0	0.2
Concrete Foundataions/Slab or	4.2485	23.5018	1.3627	0.8485	0.7818
On-Site	3.9711	16.3642	0.8172	0.8162	**0.7509**
Off-Site	0.2774	7.1376	0.5455	0.0	0.0309
Building Erection	3.82	35.502	3.5131	1.5375	1.415
				1.5153	
On-Site	2.9013	32.5351	1.5153		1.4
Off-Site	0.9175	2.9669	1.9978	0.0222	0.0209
Arch. Coating	80.0114	2.3655	0.5199	0.15025	0.15006
On-Site	79.8424	2.2451	0.1479	0.1	0.1479
Off-Site	0.169	0.1204	0.372	0.00235	0.00216

Total Construction Emissions Detailed Options (tons):

	Unmitigated	
Phase	ROG	PM2.5 Exhaust
Rough Grade	0.1624	0.06955
On-Site	0.1495	0.0681
Off-Site	1.29E-02	0.00145
Base for Paving		
On-Site	0.0156	0.00159
Off-Site	1.25E-03	0.00015
Paving - Asphalt	0.00083	1.00E-05
On-Site	1.52E-02	1.50E-03
Off-Site	6.30E-04	7.00E-05
Concrete Foundataions/Slab or	2.29E-02	1.48E-03
On-Site	1.99E-02	3.75E-03
Off-Site	1.33E-03	1.50E-04
Building Erection	4.80E-04	2.00E-05
On-Site	2.90E-02	1.39E-02
Off-Site	8.50E-03	2.10E-04
Arch. Coating	5.70E-04	1.00E-05
On-Site	7.98E-01	1.48E-03
Off-Site	1.56E-03	2.00E-05

Total (6 month construction duration) (tons):	Unmitigated	
	ROG (tons)	PM2.5 Exhaust (tons)
On-Site (Off-Road Equip/Vehicl	1.0276	9.03E-02
Off-Site (Mobile)*	2.62E-02	2.05E-03

Scaled for 12-months (1-Year)	Unmitigated	
HARP2 Inputs	ROG (tons)	PM2.5 Exhaust (lb/yr)
On-Site (Off-Road Equip/Vehicl	4110.4	3.61E+02
Off-Site (Mobile)	1.05E+02	8.20E+00

NOT SCALED	Unmitigated	
HARP2 Inputs	ROG (tons)	PM2.5 Exhaust (lb/yr)
On-Site (Off-Road Equip/Vehicl	2055.2	1.81E+02
Off-Site (Mobile)	5.23E+01	4.10E+00

Operational Emissions Summary

Summary of CalEEMod Modeled Maximum Daily Long-Term Operational Emissions of Criteria Air Pollutants and Precursors[1]

Emissions Source	Daily Emissions (lbs/day)		
	ROG	NO_X	PM_{10}
Area	4.00	9.20E-04	3.60E-04
Energy	0.06	0.51	0.04
Mobile	5.03	36.76	12.15
Fueling Center	28.05	-	-
Total Daily Operational Emissions[2]	**37**	**37**	**12**
PCAPCD Thresholds of Significance	**55**	**55**	**82**
Exceeds Thresholds?	**No**	**No**	**No**

Notes: lbs/day = pounds per day; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; PCAPCD = Placer County Air Pollution Control District.

[a] Operational emissions were modeled for year 2018.
[b] Includes emissions from delivery truck (warehouse and fueling center) idling and TRU emissions during deliveries.
[c] Assumes reactive organic gases associated with gasoline dispensing = total organic gases. Based on CARB's Revised Emission Factors report, December 23, 2013 : https://www.arb.ca.gov/vapor/gdf-emisfactor/gdf%20umbrella%20document%20-%2020%20nov%202013.pdf
[d] Total emissions may not add correctly due to rounding.

Source: AECOM 2019; See Appendix X for detailed modeling assumptions, outputs, and results.

HRA Summary:

a. PM2.5 exhaust and ROG for gasoline deliveries and warehouse deliveries. We'd need this broken out for each. I'm assuming it would be similar to your idling calculation with different emission factors.
b. ROG for customer and worker traffic. A total number is fine. We will be dividing this out based on the traffic turn movements in the TIS.

	Emissions (lb/day)		Emissions (tpy)		Distance (one-way per trip)*
	ROG	PM2.5 (Exhaust)	ROG	PM2.5 (Exhaust)	
Mobile Operations:					
Warehouse Deliveries - Truck Operations	0.143547158	0.018718625	0.026197356	0.003416149	10
Warehouse Deliviers - TRU Operations	0.053687614	0.020456216	0.00979799	0.003733259	10
Fuel Deliveries	0.082081192	0.03072618	0.014979818	0.005607528	10
Customer/Worker Commutes	4.20	0.17	0.77	0.0296	see "Operational Trip Rate Calcs" tab
On-Site Idling:					
Warehouse Deliveries	5.16	0.03	4.15E+00	2.32E-02	-
Fuel Deliveries	2.67	0.05	2.15E+00	3.92E-02	-
TRUs	4.06	1.55	3.27E+00	1.24E+00	-

** Note that trip distanc and duration are based on travel within Placer County for trucks travelling to Loomis from Tracy and West Sacramento. Additional miles travelled outside of the county and air district will be incurred and are separately ccounted for and discussed.*

GHG Emissions Summary

Emissions Source	GHG Emissions ($MTCO_2e$ / year)
Construction GHG Emissions	
Maximum Annual Construction Emissions	385
Operational GHG Emissions	
Area	0.018
Energy	678
Mobile[1]	5095
Waste	343
Water	42
Total Annual Operational Emissions	**6159**
Total[3] Annual Operational + Amortized Construction Emissions	**6,178**
Total[3] Annual Project Emissions per 1,000 Square Feet[3]	**39.73**
PCAPCD GHG Efficiency Threshold	***27.3***

Notes:

[1] Mobile emissions calculations include those calculated in CalEEMod based upon VMT projected in the Transportation Impact Analysis for customer and worker trips, plus those calculated using EMFAC 2017 and OFFROAD 2017 Emissions Inventory for fuel and warehouse delivery truck trips and on-site idling.

[2] Annual Operational EMissions per 1,000 square feet calculated based upon approximate warehouse size of 155,000 sq. ft.

Source: Modeled by AECOM in 2019

Energy Summary

Phase	Energy Requirement	Unit	Annual Energy Consumption (MMBtu)
Construction (amortized over 20 years)			
Diesel	1,778	Gallons/yr	245
Gasoline	134	Gallons/yr	17
		Subtotal	*262*
Building Operations			
Warehouse			
Electrical	1,827,450	KWh/yr	6,237
Natural Gas	1,813,500	kBTU/yr	1,814
Fueling Center			
Electrical	35,788	KWh/yr	122
Natural Gas	78,945	kBTU/yr	79
Parking			
Electrical	108,920	KWh/yr	372
Natural Gas	-	kBTU/yr	-
		Subtotal	*8,623*
Operational Transportation			
Diesel	114,698	Gallons/yr	15,839
Gasoline	437,834	Gallons/yr	54,729
		Subtotal	*70,568*
		Total	***79,454***

Notes:

Totals do not add due to rounding.

Source: Modeled by AECOM in 2019

Conversion Factors

Category	Amount	Units	
Diesel (heat content)	5.8	MMBtu/barrel	http://www.theclimateregistry.org/wp-content/uploads/2017/05/2017-Climate-Registry-Default-Emission-Factors.pdf
Motor Gasoline	5.25	MMBtu/barrel	http://www.theclimateregistry.org/wp-content/uploads/2017/05/2017-Climate-Registry-Default-Emission-Factors.pdf
Natural Gas	0.1	MMBtu/therm	https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references
Propane	0.0913	MMBtu/gallon	https://www.eia.gov/environment/emissions/co2_vol_mass.php
Kerosene	0.135	MMBtu/gallon	https://www.eia.gov/environment/emissions/co2_vol_mass.php
Wood	20	MMBtu/cord	https://www.eia.gov/energyexplained/index.cfm?page=about_btu
Gallons per Barrel	42	gallons/barrel	http://www.theclimateregistry.org/wp-content/uploads/2017/05/2017-Climate-Registry-Default-Emission-Factors.pdf

Town of Loomis BAU Energy Use Forecast	2005 Energy Use (Units listed in category to left)	2020 Forecast Energy Use (Units listed in category to left)	2005 Energy Use (MMBtu)	2020 Forecast Energy Use (MMBtu)
Residential				
Electricity (kWh)	23,909,871	27,274,491	81,604	93,088
Natural Gas (Therms)	989,949	1,129,270	98,995	112,927
Propane (Gallons)	154,915	176,717	14,148	16,139
Fuel Oil/Kerosene (Gallons)	6,855	7,819	924	1,054
Wood (Cords)	156	178	3,120	3,560
Non-Residential				
Electricity (kWh)	24,371,091	26,894,177	83,179	91,790
Natural Gas (Therms)	316,564	349,330	31,656	34,933
		Total	313,627	353,491

Operational Emissions - CalEEMod Output

Emissions Source	Daily Emissions (lbs/day)			
	ROG	NO_X	PM_{10}	PM2.5 Exhaust
Area	4.00	9.20E-04	3.60E-04	3.60E-04
Energy	0.06	0.51	0.04	0.04
Mobile	4.20	29.76	11.94	0.17
Total	8.26	30.27	11.98	2.07E-01

Emissions Source	Annual Emissions (tons/yr)			
	ROG	NO_X	PM_{10}	PM2.5 Exhaust
Area	0.73	8.00E-05	3.00E-05	3.00E-05
Energy	0.01	9.28E-02	7.05E-03	7.05E-03
Mobile	0.77	5.24E+00	2.03E+00	2.96E-02
Waste	0.00	0.00	0.00	0.00
Water	0.00	0.00	0.00	0.00
Total	1.51	5.33	2.04	3.67E-02

Fueling Station Operational ROG Emissions	
Annual Throughput (gallons)	20,000,000
Average Daily Throughput (gallongs)	54,795
ROG Emissions Factor (lbs/kgal)	0.51183
Daily ROG Emissions (lbs/day)	28.05

Reactive Organic Gas Emissions Factors for Gasoline Dispensing Facilities

Losses	Emission Factor (lbs/kgal)[a]
Phase I Bulk Transfer Losses	0.15
Pressure Driven Losses	0.024
Phase II Fueling	0.0888
Phase II Fueling - Spillage	0.24
Hose Permeation	0.009
Total	0.51183

[a] Based on CARB's Revised Emission Factors report, December 23, 2013 : https://www.arb.ca.gov/vapor/gdf-emisfactor/gdf%20umbrella%20document%20-%2020%20nov%202013.pdf

Assumes reactive organic gases associated with gasoline dispensing = total organic gases.
Notes: lbs/kgal = pounds per 1,000 gallongs fuel

Derivation of Phase II Fueling Emission Factor

	Percent of CA Vehicle Fleet in 2018[a]	Emission Factor (lbs/kgal)[b]
ORVR Vehicles	83%	0.021
Non-ORVR Vehicles	17%	0.42
Composite	100%	0.0888

[a] Figure 1 from Staff Report ISOR for Public Hearing to Consider the Proposed Amendments to California Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks (Sep 4 2018): https://www.arb.ca.gov/regact/2018/fillpipe2018/fpisor.pdf

[b] Table I-I from CARB's Revised Emission Factors report, December 23, 2013 : https://www.arb.ca.gov/vapor/gdf-emisfactor/gdf%20umbrella%20document%20-%2020%20nov%202013.pdf

Notes: lbs/kgal = pounds per 1,000 gallongs fuel; ORVR = On-board Refueling Vapor Recovery

Delivery Truck and TRU On-Road Emissions

			Emission Factors (g/mile)								
Emissions Source	**Year**	**Vehicle Class**	**ROG**	**NO_X**	**CO**	**$PM_{10\ (Total)}$**	**$PM_{2.5\ (Exhaust)}$**	**$PM_{2.5\ (Total)}$**	**CO_2**	**CH4**	**N2O**
Heavy-Heavy Duty Diesel Drayage Truck at Other Facilities	Aggregate	T7 Other Port	0.250	6.058	0.896	0.132	0.033	0.068	1862.925	0.01163184	0.74354419
Heavy-Heavy Duty Diesel Single Unit Truck (Fuel Delivery)	Aggregate	T7 Single - Diesel	0.266	5.477	0.852	0.202	0.100	0.135	1588.354	0.01235216	0.82288794
			Emission Factors (g/hr)*								
TRU - Instate Truck TRU	Aggregate	TRU - Instate Truck TRU	6.09	59.07	48.70	2.52	2.32	2.32	1166.20	0.00071871	0.00032783

*Emission factors for T7 trucks are from EMFAC 2017 tab; Emission factors for TRUs are from OFFROAD 2017 tab.

Global Warming Potential	
CO2	1
CH4	28
N2O	265

*Per IPCC 5th Assessment Report (AR5)

Conversion Factors:	
grams per pound:	453.59237
pounds per ton:	2000

Phase II Mobile Emissions:

Within Placer County Air Pollution Control District

			Emissions (lb/day)						Emissions (tons/year)						
Vehicle Type	**Trucks per Day**	**One-Way Trip Distance (miles)***	**ROG**	**NO_X**	**CO**	**$PM_{10\ (Total)}$**	**$PM_{2.5\ (Exhaust)}$**	**$PM_{2.5\ (Total)}$**	**ROG**	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5\ (Exhaust)}$**	**$PM_{2.5\ (Total)}$**	**CO_2e**
Heavy-Heavy Duty Diesel Drayage Truck at Other Facilities	13	10	0.144	3.473	0.514	0.076	0.019	0.039	0.026	0.634	0.094	0.014	0.003	0.007	215.526
Heavy-Heavy Duty Diesel Single Unit Truck (Fuel Delivery)	7	10	0.082	1.691	0.263	0.062	0.031	0.042	0.015	0.309	0.048	0.011	0.006	0.008	101.772
	Trucks per Day	**Estimated Hours per One-Way Trip***													
TRU - Instate Truck TRU	4	0.5	0.054	0.521	0.429	0.022	0.020	0.020	0.010	0.095	0.078	0.004	0.004	0.004	1.877
Total Emissions			0.279	5.684	1.206	0.160	0.070	0.101	0.051	1.037	0.220	0.029	0.013	0.018	319.174

* Note that trip distanc and duration are based on travel within Placer County for trucks travelling to Loomis from Tracy and West Sacramento. Additional miles travelled outside of the county and air district will be incurred and are separately ccounted for and discussed.

Within Sacramento Metropolitan Air Quality Management District

			Emissions (lb/day)						Emissions (tons/year)						
Vehicle Type	**Trucks per Day**	**One-Way Trip Distance (miles)***	**ROG**	**NO_X**	**CO**	**$PM_{10\ (Total)}$**	**$PM_{2.5\ (Exhaust)}$**	**$PM_{2.5\ (Total)}$**	**ROG**	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5\ (Exhaust)}$**	**$PM_{2.5\ (Total)}$**	**CO_2e**
Heavy-Heavy Duty Diesel Drayage Truck at Other Facilities	13	40	0.574	13.891	2.054	0.302	0.075	0.156	0.105	2.535	0.375	0.055	0.014	0.029	862.102
Heavy-Heavy Duty Diesel Single Unit Truck (Fuel Delivery)	7	20	0.164	3.381	0.526	0.125	0.061	0.083	0.030	0.617	0.096	0.023	0.011	0.015	203.543
	Trucks per Day	**Estimated Hours per One-Way Trip***													
TRU - Instate Truck TRU	4	1	0.107	1.042	0.859	0.044	0.041	0.041	0.020	0.190	0.157	0.008	0.007	0.007	3.754
Total Emissions			0.846	18.314	3.439	0.471	0.177	0.280	0.154	3.342	0.628	0.086	0.032	0.051	1069.400

* Note that trip distanc and duration are based on travel within Sacramento County for trucks travelling from Tracy and West Sacramento to Loomis. Additional miles travelled outside of the county and air district will be incurred and are separately ccounted for and discussed.

Within San Joaquin Valley Air Pollution Control District

			Emissions (lb/day)						Emissions (tons/year)						
Vehicle Type	**Trucks per Day**	**One-Way Trip Distance (miles)***	**ROG**	**NO_X**	**CO**	**$PM_{10\ (Total)}$**	**$PM_{2.5\ (Exhaust)}$**	**$PM_{2.5\ (Total)}$**	**ROG**	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5\ (Exhaust)}$**	**$PM_{2.5\ (Total)}$**	**CO_2e**
Heavy-Heavy Duty Diesel Drayage Truck at Other Facilities	13	50	0.718	17.364	2.568	0.378	0.094	0.195	0.131	3.169	0.469	0.069	0.017	0.036	1077.628
Heavy-Heavy Duty Diesel Single Unit Truck (Fuel Delivery)	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Trucks per Day	**Estimated Hours per One-Way Trip***													
TRU - Instate Truck TRU	4	1	0.107	1.042	0.859	0.044	0.041	0.041	0.020	0.190	0.157	0.008	0.007	0.007	3.754
Total Emissions			0.825	18.405	3.427	0.422	0.135	0.236	0.151	3.359	0.625	0.077	0.025	0.043	1081.382

* Note that trip distanc and duration are based on travel within San Joaquin County for trucks travelling from Tracy to Loomis. Additional miles travelled outside of the county and air district will be incurred and are separately ccounted for and discussed.

* Costco trucks typically travelling from distribution warehouse in Tracy, CA (95 miles)
* Fuel assumed to be supplied by refined products terminal in West Sacramento (30 miles)

Delivery Truck, Transport Refrigeration Units (TRUs), and Fueling Station Customer On-Site Idling Emissions

On-Site Idling:

			Emissions (g/day)						MT/yr
Activity	Number of Vehicles per Day	Duration per Load (hours)	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	CO_2e
Truck Idling (no TRU)	9	0.2	3.57	62.18	37.18	0.10	0.02	0.02	0.01
Truck Idling (with TRU)	4	0.2	1.59	27.63	16.53	0.04	0.01	0.01	0.00
TRU emissions	4	0.2	4.06	39.38	32.47	0.01	1.68	1.55	0.00
Gasoline Delivery Trucks	7	0.2	2.67	38.32	33.91	0.06	0.05	0.05	0.01
Fueling Center Vehicles in Queue Line	30	1.0	237.21	428.13	5351.24	18.98	20.34	18.70	1.93
Total			249.09	595.64	5471.32	19.19	22.10	20.33	1.95

Emissions for truck idling using EMFAC 2011 idling emission rates provided in g/hr-vehicle (https://www.arb.ca.gov/msei/emfac2011_idling_emission_rates.xlsx)
Emissions for TRU emissions using OFFROAD 2017 emissions rates.

HARP2 Modeling			Emissions (lb/yr)					
Activity			ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Truck Idling (no TRU) [b]			2.87E+00					1.61E-02
Truck Idling (with TRU) [c]			1.28E+00					7.14E-03
TRU emissions			3.27E+00					1.24E+00
Gasoline Delivery Trucks			2.15E+00					3.92E-02
Fueling Center Passenger Vehicles			1.91E+02					N/A
							g --> lb	0.002205
							day --> yr	365

			Emission Factors (g/vehicle/day)								
Vehicle Category	Model Year	Fuel	ROG_IDLEX	NOx_IDLEX	CO_IDLEX	SOx_IDLEX	PM10_IDLEX	PM2_5_IDLEX	CO2_IDLEX	CH4_IDLEX	N2O_IDLEX
T7 other port	Aggregated	DSL	1.642470989	28.601113	17.1039243	0.044689944	0.009601146	0.009185805	4730.34392	0.076288523	0.7435442
T7 Single	Aggregated	DSL	2.102446975	30.216413	26.73723881	0.049458817	0.040094723	0.038360243	5235.119855	0.097653217	0.8228879

*Source: EMFAC 2017

		Emission Factors (g/vehicle/idle-hr)								
Vehicle Category	idle--hour factor	ROG_IDLEX	NOx_IDLEX	CO_IDLEX	SOx_IDLEX	PM10_IDLEX	PM2_5_IDLEX	CO2_IDLEX	CH4_IDLEX	N2O_IDLEX
T7 other port	0.69	2.380392737	41.450889	24.78829609	0.064768035	0.013914705	0.013312761	6855.570898	0.110563077	1.0776003
T7 Single - model year 2008+	0.92	2.285268451	32.843927	29.0622161	0.053759583	0.04358122	0.041695916	5690.347669	0.106144801	0.8944434

*Source: Table 4.4-9 EMFAC2017 Idle Hours for Selected Categories from ARB emfac2017 volume iii technical documentation (https://www.arb.ca.gov/msei/downloads/emfac2017-volume-iii-technical-documentation.pdf)

Passenger Vehicle Fueling Emission Factors			Emission Factors (g/vehicle/hr)								
Vehicle Category	Model Year	Fuel	ROG	Nox	CO	SOx	PM10	PM2.5	CO2	CH4	N2O
Light- and Medium-Duty Cars and Trucks	Aggregate	Gas	0.790708693	1.4271027	17.83745685	0.063278671	0.067792005	0.062342143	6394.490907	0.182981835	0.1164353

Global Warming Potential	
CO2	1
CH4	28
N2O	265

*Per IPCC 5th Assessment Report (AR5)

Conversion Factors:	
grams per pound:	453.59237
pounds per metric ton:	2204

Estimated Annual Fuel Consumption for Proposed Project Operations

Fuel Type	Total Project Mobile GHG Emissions (MT CO2e/yr) [a]	% Average Fleet Mix [b]	Factor (MT CO_2/gallon) [c]	Fuel Consumption (Gallons/year)
	5,095.23			
Diesel		22.87%	1.02E-02	114,698
Gasoline		76.37%	8.89E-03	437,834

Sources:
[a] Modeled by AECOM in 2019;
[b] EMFAC2017 (v1.0.1) Web Database
[c] U.S. Energy Information Administration 2016 (https://www.eia.gov/environment/emissions/co2_vol_mass.php)

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Placer (SV)
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	% VMT
Placer (SV)	2020	All Other Buses	Aggregated	Aggregated	DSL	32.87661	1862.975195	276.1635	0.03%
Placer (SV)	2020	LDA	Aggregated	Aggregated	GAS	85747.77	3138629.859	404629.5	43.80%
Placer (SV)	2020	LDA	Aggregated	Aggregated	DSL	978.5756	36279.83901	4598.804	0.51%
Placer (SV)	2020	LDA	Aggregated	Aggregated	ELEC	1332.311	50647.13622	6641.155	0.71%
Placer (SV)	2020	LDT1	Aggregated	Aggregated	GAS	11722.04	446126.9644	53927.48	6.23%
Placer (SV)	2020	LDT1	Aggregated	Aggregated	DSL	12.06071	160.7347793	41.0205	0.00%
Placer (SV)	2020	LDT1	Aggregated	Aggregated	ELEC	34.98558	1276.174539	171.5239	0.02%
Placer (SV)	2020	LDT2	Aggregated	Aggregated	GAS	41048.12	1607844.062	191799.4	22.44%
Placer (SV)	2020	LDT2	Aggregated	Aggregated	DSL	205.2079	9936.712557	1012.003	0.14%
Placer (SV)	2020	LHD1	Aggregated	Aggregated	GAS	176.1307	5911.579147	895.335	0.08%
Placer (SV)	2020	LHD1	Aggregated	Aggregated	DSL	3417.668	118697.9814	50918.16	1.66%
Placer (SV)	2020	LHD2	Aggregated	Aggregated	GAS	4360.634	149376.5753	54851.29	2.08%
Placer (SV)	2020	LHD2	Aggregated	Aggregated	DSL	465.3321	16632.97628	6932.755	0.23%
Placer (SV)	2020	MCY	Aggregated	Aggregated	GAS	1329.133	48742.4774	16718.82	0.68%
Placer (SV)	2020	MDV	Aggregated	Aggregated	GAS	6300.241	37110.34281	12600.48	0.52%
Placer (SV)	2020	MDV	Aggregated	Aggregated	DSL	31989.5	1072452.682	147435.8	14.96%
Placer (SV)	2020	MH	Aggregated	Aggregated	GAS	725.5634	28798.61223	3513.886	0.40%
Placer (SV)	2020	MH	Aggregated	Aggregated	DSL	55.45225	1890.705789	282.9537	0.03%
Placer (SV)	2020	Motor Coach	Aggregated	Aggregated	DSL	911.7509	7827.108894	91.21156	0.11%
Placer (SV)	2020	OBUS	Aggregated	Aggregated	GAS	426.1785	3767.518974	42.61785	0.05%
Placer (SV)	2020	PTO	Aggregated	Aggregated	DSL	10.08511	1287.083844	147.2426	0.02%
Placer (SV)	2020	SBUS	Aggregated	Aggregated	GAS	82.49271	3488.304158	1650.514	0.05%
Placer (SV)	2020	SBUS	Aggregated	Aggregated	DSL	0	3854.492898	0	0.05%
Placer (SV)	2020	T6 Ag	Aggregated	Aggregated	DSL	14.8531	606.4978458	59.41239	0.01%
Placer (SV)	2020	T6 CAIRP heavy	Aggregated	Aggregated	DSL	254.9563	7966.771898	2942.16	0.11%
Placer (SV)	2020	T6 CAIRP small	Aggregated	Aggregated	DSL	18.18819	3612.069847	265.5476	0.05%
Placer (SV)	2020	T6 instate construction heavy	Aggregated	Aggregated	DSL	11.03984	595.974764	161.1816	0.01%
Placer (SV)	2020	T6 instate construction small	Aggregated	Aggregated	DSL	41.9765	2853.905129	189.7741	0.04%
Placer (SV)	2020	T6 instate heavy	Aggregated	Aggregated	DSL	295.5068	15085.57302	1335.975	0.21%
Placer (SV)	2020	T6 instate small	Aggregated	Aggregated	DSL	392.4762	60081.81437	4529.121	0.84%
Placer (SV)	2020	T6 OOS heavy	Aggregated	Aggregated	DSL	1665.841	91351.41849	19223.58	1.27%
Placer (SV)	2020	T6 OOS small	Aggregated	Aggregated	DSL	10.30936	2049.561944	150.5166	0.03%
Placer (SV)	2020	T6 Public	Aggregated	Aggregated	DSL	5.453591	284.8556725	79.62242	0.00%
Placer (SV)	2020	T6 utility	Aggregated	Aggregated	DSL	311.2418	4869.639005	944.1002	0.07%
Placer (SV)	2020	T6TS	Aggregated	Aggregated	GAS	29.94257	499.7586743	344.3395	0.01%
Placer (SV)	2020	T7 Ag	Aggregated	Aggregated	DSL	222.6318	10159.95462	4454.418	0.14%
Placer (SV)	2020	T7 CAIRP	Aggregated	Aggregated	DSL	196.1152	35506.03523	2863.281	0.50%
Placer (SV)	2020	T7 CAIRP construction	Aggregated	Aggregated	DSL	11.14562	2049.984845	50.38892	0.03%
Placer (SV)	2020	T7 NNOOS	Aggregated	Aggregated	DSL	214.503	43295.97996	3131.743	0.60%
Placer (SV)	2020	T7 NOOS	Aggregated	Aggregated	DSL	77.06655	13946.31586	1125.172	0.19%
Placer (SV)	2020	T7 other port	Aggregated	Aggregated	DSL	2.444744	388.9158154	18.58005	0.01%
Placer (SV)	2020	T7 POAK	Aggregated	Aggregated	DSL	10.09934	1128.165741	76.75501	0.02%
Placer (SV)	2020	T7 Public	Aggregated	Aggregated	DSL	279.332	5659.82949	847.3071	0.08%
Placer (SV)	2020	T7 Single	Aggregated	Aggregated	DSL	267.0645	19411.99668	3081.887	0.27%
Placer (SV)	2020	T7 single construction	Aggregated	Aggregated	DSL	72.10768	5085.635347	325.996	0.07%
Placer (SV)	2020	T7 SWCV	Aggregated	Aggregated	DSL	153.4641	6258.695704	598.5099	0.09%
Placer (SV)	2020	T7 tractor	Aggregated	Aggregated	DSL	195.7484	27014.0792	2486.005	0.38%
Placer (SV)	2020	T7 tractor construction	Aggregated	Aggregated	DSL	59.69658	4195.201418	269.8859	0.06%
Placer (SV)	2020	T7 utility	Aggregated	Aggregated	DSL	5.811285	117.9413884	66.82977	0.00%
Placer (SV)	2020	T7IS	Aggregated	Aggregated	GAS	1.028437	81.3138809	20.57697	0.00%
Placer (SV)	2020	UBUS	Aggregated	Aggregated	GAS	28.95239	2327.874715	115.8096	0.03%
Placer (SV)	2020	UBUS	Aggregated	Aggregated	DSL	45.99606	4573.352307	183.9842	0.06%
Placer (SV)	2021	UBUS	Aggregated	Aggregated	NG	24.38584	2749.016108	97.54338	0.04%
							7166411.028		

DSL	22.87%
GAS	76.37%

Construction Energy Consumption

Phase	Source	MT CO_2e/yr [a]	Fuel Type	Emission Factor (MT CO_2/gallon) [b]	Gallons/year
Rough Grade	Offroad Equip	178.21	Diesel	0.01016	17,541
	Hauling	0.00	Diesel	0.01016	-
	Vendor	78.77	Diesel	0.01016	7,753
	Worker	4.75	Gas	0.008887	534
Base for Paving	Offroad Equip	4.51	Diesel	0.01016	444
	Hauling	0.00	Diesel	0.01016	-
	Vendor	8.57	Diesel	0.01016	843
	Worker	0.22	Gas	0.008887	25
Paving - Asphalt	Offroad Equip	4.03	Diesel	0.01016	396
	Hauling	0.00	Diesel	0.01016	-
	Vendor	3.87	Diesel	0.01016	381
	Worker	0.22	Gas	0.008887	25
Concrete Foundations / Slab on Grade	Offroad Equip	11.06	Diesel	0.01016	1,089
	Hauling	0.00	Diesel	0.01016	-
	Vendor	8.29	Diesel	0.01016	816
	Worker	0.44	Gas	0.008887	50
Building Erection	Offroad Equip	54.95	Diesel	0.01016	5,408
	Hauling	0.00	Diesel	0.01016	-
	Vendor	5.53	Diesel	0.01016	544
	Worker	15.19	Gas	0.008887	1,709
Architectural Coating	Offroad Equip	3.41	Diesel	0.01016	336
	Hauling	0.00	Diesel	0.01016	-
	Vendor	0.00	Diesel	0.01016	-
	Worker	3.05	Gas	0.008887	343
			Total Gallons	**Diesel**	**35,551**
				Gasoline	**2,686**
			Amortized Demands (over 20 years)	**Diesel**	**1,778**
				Gasoline	**134**

Notes:

Assumed amortization period is 20 years.

Sources:

[a] Modeled by AECOM in 2019;

[b] U.S. Energy Information Administration 2016 (https://www.eia.gov/environment/emissions/co2_vol_mass.php)

Amortization period (yrs):		20
Factor:	MT/gallon	
Diesel		1.02E-02
Gasoline		8.89E-03

Building Energy Consumption

Electricity Usage - Placer county 2016 (GWh)			Project Electicity Consumption (kWh/yr)	
County	Sector	Total Usage (GWh)	Warehouse	1,827,450
PLACER	Non-Residential	1536.053019	Fueling Center	35,788
PLACER	Residential	1402.456464	Parking	108,920
PLACER	Total	2938.509483	Total	1,972,157.90
*CEC 2017a (http://ecdms.energy.ca.gov/elecbycounty.aspx)			% of County	0.0671%

Natrual Gas Usage - Placer county 2016				Project Gas Consumption (kBTU/yr)	
County	Sector	Total Usage (Millions of Therms)	kBTU	Warehouse	1,813,500
PLACER	Non-Residential	28.746568	2874656800	Fueling Center	78,945
PLACER	Residential	62.184773	6218477300	Parking	-
PLACER	Total	90.931341	9,093,134,100.00	Total	1,892,445.10
*CEC 2017b (http://ecdms.energy.ca.gov/gasbycounty.aspx)				% of County	0.0208%

* 1,000,000 Therms = 100,000,000 kBTU

Table 3.5-3. Estimated Annual Electrical and Natural Gas Demand

Location	Electrical Demand (kWh/year)	Natural Gas Demand (kBtu/year)
Warehouse	1,827,450	1,813,500
Fueling Center	35,788	78,945
Parking	108,920	0
Total	**1,972,158**	**1,892,445**

Notes: kWh = kilowatt-hours; kBtu = thousand British thermal unit

Source: AECOM 2019

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.004947	0.003636	0.019644	1.039991	0.012708	0	0	0.867979	0
A	CH4_RUNEX	0.005745	0.014686	0.007808	0.014594	0.025343	0.012212	0.012996	0.009087	0.026799	1.219565	0.406204	0.026858	0.048803
A	CH4_STREX	0.010519	0.02752	0.014047	0.028104	0.021	0.009849	0.082468	0.237824	0.039564	0.0588	0.184938	0.129246	0.037365
A	CO_IDLEX	0	0	0	0	0.137141	0.118851	0.482219	4.197389	0.284421	0	0	5.998851	0
A	CO_RUNEX	0.75727	1.784002	1.013056	1.719341	1.648121	0.910044	0.802579	0.811727	1.616257	6.868239	24.0919	1.585035	4.844172
A	CO_STREX	2.005961	5.090873	2.758144	4.699779	2.810999	1.371414	7.422857	3.068069	8.522947	11.0688	10.65873	11.74022	7.956404
A	CO2_NBIO_IDLEX	0	0	0	0	9.600959	15.01518	180.6938	6635.93	79.52718	0	0	1264.424	0
A	CO2_NBIO_RUNEX	283.861	339.0135	390.3516	520.6193	697.2087	738.0212	1215.415	1648.162	1359.721	2057.899	162.3392	1152.534	1246.193
A	CO2_NBIO_STREX	64.96549	77.89859	89.92937	117.8341	26.79041	21.97194	45.56479	7.995365	72.7295	118.0161	49.29541	38.5683	62.82726
A	NOX_IDLEX	0	0	0	0	0.108692	0.136056	1.439744	32.29617	0.493397	0	0	13.81445	0
A	NOX_RUNEX	0.074022	0.179635	0.121322	0.220304	3.009851	2.229532	2.997992	4.620795	2.231729	8.860299	1.225529	6.41532	2.209824
A	NOX_STREX	0.128524	0.267877	0.23756	0.421943	0.918285	0.546224	13.69222	20.12701	2.22969	14.27718	0.325743	15.24156	0.99837
A	PM10_IDLEX	0	0	0	0	0.001176	0.00145	0.008251	0.063687	0.000296	0	0	0.018286	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060977	0.13034	0.571741	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.010345	0.010862	0.012	0.035474	0.012	0.012	0.004	0.011038	0.012962
A	PM10_RUNEX	0.001788	0.002788	0.001572	0.001735	0.028396	0.024329	0.077004	0.030955	0.009734	0.142208	0.00188	0.036331	0.045558
A	PM10_STREX	0.002384	0.00426	0.002289	0.002662	0.001016	0.000404	0.000914	0.000167	0.000755	0.000802	0.00481	0.000767	0.001806
A	PM25_IDLEX	0	0	0	0	0.001125	0.001387	0.007894	0.060932	0.000283	0	0	0.017495	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026133	0.05586	0.245032	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002586	0.002715	0.003	0.008868	0.003	0.003	0.001	0.00276	0.00324
A	PM25_RUNEX	0.001651	0.002573	0.001446	0.001602	0.027123	0.023257	0.073669	0.029615	0.009291	0.136034	0.001772	0.034737	0.043521
A	PM25_STREX	0.002194	0.003927	0.002106	0.002455	0.000937	0.000372	0.000845	0.000156	0.000695	0.000739	0.004564	0.000705	0.001681
A	ROG_DIURN	0.049688	0.148239	0.061245	0.079254	0.002381	0.000964	0.001022	0.000107	0.001556	0.003182	1.150566	0.004703	1.167265
A	ROG_HTSK	0.138917	0.350866	0.160017	0.204858	0.087848	0.035165	0.045164	0.007851	0.021238	0.051605	0.911651	0.042114	0.087945
A	ROG_IDLEX	0	0	0	0	0.016362	0.014197	0.044007	1.156839	0.039382	0	0	0.722556	0
A	ROG_RESTL	0.03261	0.088316	0.042483	0.057106	0.000935	0.0004	0.000416	0.000053	0.000527	0.001404	0.567315	0.00127	0.310971
A	ROG_RUNEX	0.015694	0.042908	0.020521	0.044123	0.188607	0.147754	0.193416	0.154572	0.113382	0.686989	2.531468	0.162702	0.195344
A	ROG_RUNLS	0.047352	0.224204	0.086001	0.120734	0.27903	0.085368	0.016099	0.000557	0.061883	0.011115	0.842707	0.026843	0.023476
A	ROG_STREX	0.141938	0.371578	0.189513	0.379422	0.283395	0.132827	0.436491	0.165972	0.511286	0.793221	2.528063	0.533037	0.505623
A	SO2_IDLEX	0	0	0	0	0.000095	0.000146	0.001733	0.06331	0.000772	0	0	0.012259	0
A	SO2_RUNEX	0.002845	0.003413	0.003913	0.005222	0.006827	0.007168	0.011636	0.015731	0.013363	0.01742	0.002087	0.011089	0.012407
A	SO2_STREX	0.000685	0.00087	0.000947	0.001263	0.000321	0.000245	0.000586	0.000133	0.000877	0.001378	0.000742	0.000587	0.000769
A	TOG_DIURN	0.049688	0.148239	0.061245	0.079254	0.002381	0.000964	0.001022	0.000107	0.001556	0.003182	1.150566	0.004703	1.167265
A	TOG_HTSK	0.138917	0.350866	0.160017	0.204858	0.087848	0.035165	0.045164	0.007851	0.021238	0.051605	0.911651	0.042114	0.087945
A	TOG_IDLEX	0	0	0	0	0.022379	0.018832	0.055168	1.316973	0.054112	0	0	1.030554	0
A	TOG_RESTL	0.03261	0.088316	0.042483	0.057106	0.000935	0.0004	0.000416	0.000053	0.000527	0.001404	0.567315	0.00127	0.310971
A	TOG_RUNEX	0.022271	0.05974	0.029419	0.060879	0.22932	0.172999	0.223762	0.177665	0.148365	1.979123	3.022947	0.202536	0.254902
A	TOG_RUNLS	0.047352	0.224204	0.086001	0.120734	0.27903	0.085368	0.016099	0.000557	0.061883	0.011115	0.842707	0.026843	0.023476
A	TOG_STREX	0.155361	0.406578	0.207449	0.415183	0.310172	0.145425	0.47769	0.181565	0.559744	0.86834	2.748063	0.583608	0.552591
S	CH4_IDLEX	0	0	0	0	0.004947	0.003636	0.018292	0.984998	0.012679	0	0	0.86733	0
S	CH4_RUNEX	0.006587	0.016405	0.008916	0.016566	0.026219	0.012459	0.013206	0.009186	0.027848	1.222598	0.385073	0.027807	0.051284
S	CH4_STREX	0.008269	0.021408	0.011043	0.022137	0.019366	0.009116	0.075676	0.216321	0.036224	0.049445	0.145067	0.101091	0.033829
S	CO_IDLEX	0	0	0	0	0.137141	0.118851	0.340997	3.089606	0.271892	0	0	5.8225	0
S	CO_RUNEX	0.930609	2.093605	1.237052	2.05691	1.681611	0.921127	0.813433	0.818538	1.673903	6.902996	22.78223	1.640062	4.874038
S	CO_STREX	1.566161	3.942586	2.15287	3.716184	2.511052	1.229826	6.582028	2.703689	7.443092	8.226106	9.22361	7.514877	6.948201
S	CO2_NBIO_IDLEX	0	0	0	0	9.600959	15.01518	191.5293	7019.005	83.19522	0	0	1328.244	0
S	CO2_NBIO_RUNEX	312.036	371.1058	428.5424	570.1172	697.2087	738.0212	1215.415	1648.162	1359.721	2057.899	162.3392	1152.534	1246.193
S	CO2_NBIO_STREX	64.96549	77.89859	89.92937	117.8341	26.79041	21.97194	45.56479	7.995365	72.7295	118.0161	49.29541	38.5683	62.82726
S	NOX_IDLEX	0	0	0	0	0.108692	0.136056	1.486072	33.30275	0.509191	0	0	14.25708	0
S	NOX_RUNEX	0.065377	0.156093	0.106745	0.193643	2.828421	2.101978	2.806702	4.377038	2.078241	8.310364	1.023041	5.971335	2.020474
S	NOX_STREX	0.115822	0.241418	0.214341	0.381228	0.845591	0.50467	13.61101	20.09866	2.119208	14.16422	0.292755	15.17027	0.917108
S	PM10_IDLEX	0	0	0	0	0.001176	0.00145	0.006955	0.056861	0.00025	0	0	0.015415	0
S	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060977	0.13034	0.571741	0.01176	0.7448	0.13034
S	PM10_PMTW	0.008	0.008	0.008	0.008	0.010345	0.010862	0.012	0.035474	0.012	0.012	0.004	0.011038	0.012962
S	PM10_RUNEX	0.001788	0.002788	0.001572	0.001735	0.028396	0.024329	0.077004	0.030955	0.009734	0.142208	0.00188	0.036331	0.045558
S	PM10_STREX	0.002384	0.00426	0.002289	0.002662	0.001016	0.000404	0.000914	0.000167	0.000755	0.000802	0.00481	0.000767	0.001806
S	PM25_IDLEX	0	0	0	0	0.001125	0.001387	0.006654	0.054402	0.000239	0	0	0.014749	0
S	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026133	0.05586	0.245032	0.00504	0.3192	0.05586
S	PM25_PMTW	0.002	0.002	0.002	0.002	0.002586	0.002715	0.003	0.008868	0.003	0.003	0.001	0.00276	0.00324
S	PM25_RUNEX	0.001651	0.002573	0.001446	0.001602	0.027123	0.023257	0.073669	0.029615	0.009291	0.136034	0.001772	0.034737	0.043521
S	PM25_STREX	0.002194	0.003927	0.002106	0.002455	0.000937	0.000372	0.000845	0.000156	0.000695	0.000739	0.004564	0.000705	0.001681
S	ROG_DIURN	0.139279	0.420972	0.169781	0.21833	0.006546	0.002619	0.002866	0.000298	0.00409	0.008574	3.480341	0.012964	3.221047
S	ROG_HTSK	0.172083	0.454179	0.197184	0.246217	0.108303	0.043162	0.055587	0.00897	0.024193	0.06603	1.40446	0.048686	0.107881
S	ROG_IDLEX	0	0	0	0	0.016362	0.014197	0.041257	1.095667	0.038781	0	0	0.718283	0
S	ROG_RESTL	0.093766	0.258275	0.119546	0.157999	0.002701	0.001127	0.001258	0.000163	0.001414	0.004124	1.990351	0.003827	0.920336
S	ROG_RUNEX	0.017714	0.04675	0.023178	0.048337	0.19042	0.148351	0.193899	0.154794	0.115921	0.693095	2.363097	0.16505	0.196564
S	ROG_RUNLS	0.045983	0.214938	0.082404	0.116208	0.274221	0.08395	0.015956	0.000555	0.060514	0.010398	0.814888	0.023194	0.023133
S	ROG_STREX	0.111574	0.28903	0.148987	0.298853	0.261346	0.122944	0.40054	0.150963	0.468122	0.666994	1.982782	0.416922	0.457772
S	SO2_IDLEX	0	0	0	0	0.000095	0.000146	0.001835	0.066965	0.000807	0	0	0.012868	0
S	SO2_RUNEX	0.003129	0.003739	0.004298	0.005722	0.006828	0.007169	0.011636	0.015731	0.013364	0.01742	0.002061	0.01109	0.012408
S	SO2_STREX	0.000677	0.000849	0.000936	0.001244	0.000315	0.000243	0.000571	0.000127	0.000858	0.001329	0.000702	0.000517	0.000751
S	TOG_DIURN	0.139279	0.420972	0.169781	0.21833	0.006546	0.002619	0.002866	0.000298	0.00409	0.008574	3.480341	0.012964	3.221047
S	TOG_HTSK	0.172083	0.454179	0.197184	0.246217	0.108303	0.043162	0.055587	0.00897	0.024193	0.06603	1.40446	0.048686	0.107881
S	TOG_IDLEX	0	0	0	0	0.022379	0.018832	0.051676	1.247334	0.053428	0	0	1.025689	0

S	TOG_RESTL	0.093766	0.258275	0.119546	0.157999	0.002701	0.001127	0.001258	0.000163	0.001414	0.004124	1.990351	0.003827	0.920336
S	TOG_RUNEX	0.025247	0.065527	0.033333	0.067321	0.232121	0.173876	0.224484	0.178	0.152093	1.988648	2.828291	0.205962	0.258845
S	TOG_RUNLS	0.045983	0.214938	0.082404	0.116208	0.274221	0.08395	0.015956	0.000555	0.060514	0.010398	0.814888	0.023194	0.023133
S	TOG_STREX	0.122126	0.316266	0.163089	0.327025	0.286041	0.134606	0.438347	0.165148	0.512492	0.730177	2.155471	0.456478	0.500294
W	CH4_IDLEX	0	0	0	0	0.004947	0.003636	0.02107	1.115934	0.012748	0	0	0.868875	0
W	CH4_RUNEX	0.005526	0.014408	0.007495	0.014074	0.024676	0.012013	0.012834	0.009018	0.025994	1.217715	0.429353	0.026139	0.046957
W	CH4_STREX	0.012352	0.032592	0.016455	0.032979	0.022413	0.010471	0.08838	0.254835	0.042231	0.066465	0.224516	0.150465	0.040539
W	CO_IDLEX	0	0	0	0	0.137141	0.118851	0.647266	5.727183	0.301723	0	0	6.242383	0
W	CO_RUNEX	0.728907	1.754263	0.97555	1.683639	1.6314	0.901416	0.79521	0.807439	1.572728	6.846726	26.54158	1.544003	4.900847
W	CO_STREX	2.423266	6.176848	3.329884	5.652663	3.074856	1.494396	8.157012	3.360084	9.401576	13.5085	12.44049	15.15638	8.883768
W	CO2_NBIO_IDLEX	0	0	0	0	9.600959	15.01518	166.001	6106.923	74.46179	0	0	1176.292	0
W	CO2_NBIO_RUNEX	276.6923	330.7811	380.5054	507.8525	697.2087	738.0212	1215.415	1648.162	1359.721	2057.899	162.3392	1152.534	1246.193
W	CO2_NBIO_STREX	64.96549	77.89859	89.92937	117.8341	26.79041	21.97194	45.56479	7.995365	72.7295	118.0161	49.29541	38.5683	62.82726
W	NOX_IDLEX	0	0	0	0	0.108692	0.136056	1.37579	30.90613	0.471587	0	0	13.2032	0
W	NOX_RUNEX	0.081507	0.198628	0.133957	0.243069	3.068935	2.269226	3.053086	4.690616	2.290527	9.013789	1.331483	6.548083	2.286295
W	NOX_STREX	0.142513	0.296701	0.263299	0.467589	0.984199	0.585009	13.76418	20.14938	2.327107	14.37406	0.354546	15.29919	1.072387
W	PM10_IDLEX	0	0	0	0	0.001176	0.00145	0.010039	0.073112	0.00036	0	0	0.022251	0
W	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060977	0.13034	0.571741	0.01176	0.7448	0.13034
W	PM10_PMTW	0.008	0.008	0.008	0.008	0.010345	0.010862	0.012	0.035474	0.012	0.012	0.004	0.011038	0.012962
W	PM10_RUNEX	0.001788	0.002788	0.001572	0.001735	0.028396	0.024329	0.077004	0.030955	0.009734	0.142208	0.00188	0.036331	0.045558
W	PM10_STREX	0.002384	0.00426	0.002289	0.002662	0.001016	0.000404	0.000914	0.000167	0.000755	0.000802	0.00481	0.000767	0.001806
W	PM25_IDLEX	0	0	0	0	0.001125	0.001387	0.009605	0.06995	0.000345	0	0	0.021288	0
W	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026133	0.05586	0.245032	0.00504	0.3192	0.05586
W	PM25_PMTW	0.002	0.002	0.002	0.002	0.002586	0.002715	0.003	0.008868	0.003	0.003	0.001	0.00276	0.00324
W	PM25_RUNEX	0.001651	0.002573	0.001446	0.001602	0.027123	0.023257	0.073669	0.029615	0.009291	0.136034	0.001772	0.034737	0.043521
W	PM25_STREX	0.002194	0.003927	0.002106	0.002455	0.000937	0.000372	0.000845	0.000156	0.000695	0.000739	0.004564	0.000705	0.001681
W	ROG_DIURN	0.01106	0.030331	0.014169	0.019015	0.000518	0.000225	0.000207	0.000021	0.000408	0.000797	0.173127	0.001016	0.246122
W	ROG_HTSK	0.141029	0.364472	0.162335	0.207039	0.095407	0.037109	0.047114	0.008588	0.021443	0.054913	0.984165	0.044111	0.100613
W	ROG_IDLEX	0	0	0	0	0.016362	0.014197	0.047373	1.241314	0.040212	0	0	0.728457	0
W	ROG_RESTL	0.008017	0.020944	0.010602	0.014402	0.000277	0.000123	0.000112	0.000013	0.000196	0.000522	0.097996	0.000457	0.110727
W	ROG_RUNEX	0.015279	0.042888	0.019871	0.043701	0.187358	0.147273	0.193056	0.154421	0.111426	0.683276	2.707518	0.160921	0.195538
W	ROG_RUNLS	0.054684	0.272303	0.103612	0.144488	0.308359	0.094639	0.017955	0.000605	0.067604	0.01375	0.976334	0.034476	0.025168
W	ROG_STREX	0.166674	0.44008	0.222009	0.445249	0.302483	0.141219	0.467803	0.177858	0.545748	0.896629	3.069339	0.62055	0.54863
W	SO2_IDLEX	0	0	0	0	0.000095	0.000146	0.001594	0.058263	0.000723	0	0	0.011418	0
W	SO2_RUNEX	0.002773	0.003331	0.003814	0.005094	0.006827	0.007168	0.011636	0.015731	0.013362	0.017419	0.002132	0.011088	0.012408
W	SO2_STREX	0.000692	0.000889	0.000957	0.00128	0.000326	0.000247	0.000598	0.000138	0.000892	0.00142	0.000788	0.000643	0.000785
W	TOG_DIURN	0.01106	0.030331	0.014169	0.019015	0.000518	0.000225	0.000207	0.000021	0.000408	0.000797	0.173127	0.001016	0.246122
W	TOG_HTSK	0.141029	0.364472	0.162335	0.207039	0.095407	0.037109	0.047114	0.008588	0.021443	0.054913	0.984165	0.044111	0.100613
W	TOG_IDLEX	0	0	0	0	0.022379	0.018832	0.059361	1.413142	0.055057	0	0	1.037271	0
W	TOG_RESTL	0.008017	0.020944	0.010602	0.014402	0.000277	0.000123	0.000112	0.000013	0.000196	0.000522	0.097996	0.000457	0.110727
W	TOG_RUNEX	0.02161	0.059419	0.028415	0.059883	0.22732	0.172292	0.223219	0.177436	0.145493	1.973324	3.227628	0.199937	0.253091
W	TOG_RUNLS	0.054684	0.272303	0.103612	0.144488	0.308359	0.094639	0.017955	0.000605	0.067604	0.01375	0.976334	0.034476	0.025168
W	TOG_STREX	0.182433	0.481518	0.243018	0.487203	0.331057	0.154614	0.511946	0.19456	0.597471	0.981535	3.336292	0.679424	0.599563

EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: PLACER
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT	Trips	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_HOTSOAI	ROG_RUNLOSS	ROG_RESTLOS	ROG_DIURN	TOG_RUNEX
PLACER	2020	T6 CAIRP heavy	Aggregated	Aggregated	DSL	19.672326	3865.109624	287.2159595	0.042423049	0.068221142	0	0	0	0	0	0.048295412
PLACER	2020	T6 CAIRP small	Aggregated	Aggregated	DSL	11.7624673	630.2906873	171.7320225	0.064711575	0.075396868	0	0	0	0	0	0.073669202
PLACER	2020	T6 instate construction	Aggregated	Aggregated	DSL	149.2358734	10146.27228	674.6895813	0.487292288	0.079408193	0	0	0	0	0	0.554745177
PLACER	2020	T6 instate construction	Aggregated	Aggregated	DSL	364.7921291	18622.57649	1649.211032	0.469177321	0.117251623	0	0	0	0	0	0.534122665
PLACER	2020	T6 instate heavy	Aggregated	Aggregated	DSL	421.5056547	63479.64015	4864.116816	0.125884917	0.084574664	0	0	0	0	0	0.143310395
PLACER	2020	T6 instate small	Aggregated	Aggregated	DSL	1778.982334	96627.78235	20529.20949	0.174330356	0.098307182	0	0	0	0	0	0.19846184
PLACER	2020	T6 OOS heavy	Aggregated	Aggregated	DSL	11.40392876	2253.597582	166.4973598	0.040038318	0.067191283	0	0	0	0	0	0.045580577
PLACER	2020	T6 OOS small	Aggregated	Aggregated	DSL	5.902717728	305.9511755	86.17967882	0.07989892	0.081336371	0	0	0	0	0	0.090958838
PLACER	2020	T6 Public	Aggregated	Aggregated	DSL	356.6059154	5585.914443	1081.704609	0.082301015	0.373793645	0	0	0	0	0	0.093693441
PLACER	2020	T6 utility	Aggregated	Aggregated	DSL	33.76889098	563.5837716	388.3422463	0.026015099	0.140781767	0	0	0	0	0	0.02961621
PLACER	2020	T7 Ag	Aggregated	Aggregated	DSL	2.08	16.08689468	9.152	2.028272681	3.430040178	0	0	0	0	0	2.309034053
PLACER	2020	T7 CAIRP	Aggregated	Aggregated	DSL	649.5947975	117603.1335	9484.084044	0.071957994	10.69502839	0	0	0	0	0	0.081918699
PLACER	2020	T7 CAIRP construction	Aggregated	Aggregated	DSL	39.62517776	7288.155514	179.143888	0.163320704	1.589538111	0	0	0	0	0	0.185928189
PLACER	2020	T7 NNOOS	Aggregated	Aggregated	DSL	710.4456232	143398.3922	10372.5061	0.074713845	13.6069176	0	0	0	0	0	0.085056025
PLACER	2020	T7 NOOS	Aggregated	Aggregated	DSL	255.2587214	46189.95112	3726.777332	0.067864734	13.25548727	0	0	0	0	0	0.077258834
PLACER	2020	T7 other port	Aggregated	Aggregated	DSL	2.444743622	388.9158154	18.58005153	0.250430368	1.642470989	0	0	0	0	0	0.285095911
PLACER	2020	T7 POAK	Aggregated	Aggregated	DSL	65.17101454	7281.173757	495.2997105	0.299641015	2.622505323	0	0	0	0	0	0.341118486
PLACER	2020	T7 Public	Aggregated	Aggregated	DSL	327.1198549	6625.446407	992.2635589	0.142847605	1.089638356	0	0	0	0	0	0.162621124
PLACER	2020	T7 Single	Aggregated	Aggregated	DSL	281.0441025	20210.12592	3243.209978	0.265938588	2.102446975	0	0	0	0	0	0.302750839
PLACER	2020	T7 single construction	Aggregated	Aggregated	DSL	256.3589638	18080.57332	1158.988908	0.527049061	1.571257355	0	0	0	0	0	0.600005237
PLACER	2020	T7 SWCV	Aggregated	Aggregated	DSL	154.9688568	6319.545108	604.3785415	0.038741555	1.298686012	0	0	0	0	0	0.044104312
PLACER	2020	T7 tractor	Aggregated	Aggregated	DSL	336.3769369	43018.32023	4271.987099	0.183130228	1.765021018	0	0	0	0	0	0.208479825
PLACER	2020	T7 tractor construction	Aggregated	Aggregated	DSL	212.2347191	14914.88116	959.5049136	0.550075814	1.584838589	0	0	0	0	0	0.626219442
PLACER	2020	T7 utility	Aggregated	Aggregated	DSL	13.70388992	278.1194075	157.5947341	0.078199644	0.591224611	0	0	0	0	0	0.089024342

TOG_IDLEX	TOG_STREX	TOG_HOTSOAI	TOG_RUNLOSS	TOG_RESTLOSS	TOG_DIURN	CO_RUNEX	CO_IDLEX	CO_STREX	NOx_RUNEX	NOx_IDLEX	NOx_STREX	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX
0.077664577	0	0	0	0	0	0.173226198	1.997497121	0	1.535288828	4.344722835	1.066920743	943.2582048	639.8808577	0	0.001970441	0.003168695
0.085833595	0	0	0	0	0	0.246343435	2.057581626	0	1.680610041	4.57600315	1.051847583	981.9733595	637.2142249	0	0.003005685	0.003501989
0.090400183	0	0	0	0	0	1.021616423	1.885276222	0	5.571586373	5.476007634	1.7980492	1274.991818	667.7913158	0	0.022633465	0.003688305
0.133482047	0	0	0	0	0	1.033345149	2.148843556	0	4.434956995	6.806140081	1.527915915	1264.833926	672.6338209	0	0.021792071	0.005446034
0.096281818	0	0	0	0	0	0.382462654	2.020690847	0	2.53901492	5.251717218	1.554219881	1003.00603	641.2304245	0	0.005847028	0.003928274
0.111915243	0	0	0	0	0	0.513470217	2.114878593	0	2.758812926	5.774276096	1.457544169	1061.465428	652.1910034	0	0.008097194	0.004566114
0.076492161	0	0	0	0	0	0.169977291	2.009725156	0	1.46889516	4.235046856	1.082885389	942.0841774	638.5824022	0	0.001859676	0.003120861
0.092595267	0	0	0	0	0	0.295530758	2.058729967	0	1.907418478	4.941435965	0.998458675	992.7867337	645.5329327	0	0.003711098	0.003777864
0.425535612	0	0	0	0	0	0.222043626	6.649897196	0	5.454164723	36.57871419	1.397790998	1196.058559	3464.338096	0	0.003822669	0.017361747
0.160269325	0	0	0	0	0	0.118557252	4.86637068	0	1.824099495	11.90556912	1.555143729	1070.813095	1783.066943	0	0.001208334	0.006538948
3.904839644	0	0	0	0	0	6.772429812	12.84870922	0	22.1548998	26.0582699	0	1716.365504	1680.803915	0	0.094208013	0.159316482
12.17547571	0	0	0	0	0	0.331084035	134.7154686	0	3.237634029	131.86477	1.848943908	1404.591106	26028.13277	0	0.003342262	0.496756369
1.809568141	0	0	0	0	0	0.745643585	21.22970118	0	4.983044742	21.16930689	3.886788243	1778.155704	4011.583274	0	0.007585824	0.073829928
15.49043991	0	0	0	0	0	0.352876875	168.7585658	0	2.768933999	152.9372272	1.890466004	1353.809322	30323.98106	0	0.003470265	0.63200608
15.09036323	0	0	0	0	0	0.320475844	167.8741949	0	3.191970538	164.1353357	1.858405965	1404.838664	32472.9941	0	0.003152141	0.615683052
1.869828194	0	0	0	0	0	0.89597672	17.1039243	0	6.058462279	28.60111315	1.035967182	1862.925333	4730.34392	0	0.011631842	0.076288523
2.985522681	0	0	0	0	0	1.010165457	27.30954326	0	6.653785612	45.66690796	1.035967182	1904.910768	7552.986584	0	0.013917549	0.12180858
1.240470323	0	0	0	0	0	0.471015559	9.101127723	0	11.25172133	37.6907716	1.977840573	1833.470421	3353.444784	0	0.006634901	0.050610879
2.39347584	0	0	0	0	0	0.852035352	26.73723881	0	5.47713451	30.21641274	2.738157532	1588.353802	5235.119855	0	0.012352159	0.097653217
1.788756892	0	0	0	0	0	1.2975974	19.31049448	0	7.59616976	23.26477742	3.313673264	1892.045773	3866.101195	0	0.024480064	0.072980835
1.478455167	0	0	0	0	0	0.101901975	14.05334221	0	6.689657647	39.07995687	2.936501455	3952.273239	4166.081332	0	0.001799445	0.060320602
2.009342074	0	0	0	0	0	0.666266635	19.47703474	0	5.545960928	28.11225307	1.093670551	1437.954383	4328.014329	0	0.008505925	0.081980655
1.804218093	0	0	0	0	0	1.460365182	19.49614351	0	7.594524501	23.28172897	3.375487701	1897.639274	4078.094288	0	0.025549597	0.073611648
0.673064215	0	0	0	0	0	0.311135521	6.853245734	0	4.759763145	13.6687438	2.118340302	1725.903176	1790.184897	0	0.003632171	0.027460852

CH4_STREX	PM10_RUNEX	PM10_IDLEX	PM10_STREX	PM10_PMTW	PM10_PMBW	PM2_5_RUNEX	PM2_5_IDLEX	PM2_5_STREX	PM2_5_PMTW	PM2_5_PMBW	SOx_RUNEX	SOx_IDLEX	SOx_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX
0	0.033167414	0.009400086	0	0.012000003	0.130340037	0.031732606	0.008993443	0	0.003000001	0.055860016	0.008911436	0.006045277	0	0.148267054	0.10058036	0
0	0.049042264	0.012250202	0	0.012000003	0.130340037	0.046920717	0.011720264	0	0.003000001	0.055860016	0.009277197	0.006020084	0	0.154352537	0.100161202	0
0	0.145769807	0.014380054	0	0.012000003	0.130340037	0.13946387	0.01375798	0	0.003000001	0.055860016	0.01204549	0.006308961	0	0.200410959	0.104967495	0
0	0.143000805	0.031261286	0	0.012000003	0.130340037	0.136814654	0.029908936	0	0.003000001	0.055860016	0.011949524	0.006354711	0	0.198814279	0.10572867	0
0	0.05410316	0.016995252	0	0.012000003	0.130340037	0.051762681	0.016260045	0	0.003000001	0.055860016	0.009475904	0.006058027	0	0.15765858	0.100792493	0
0	0.076938524	0.022615239	0	0.012000003	0.130340037	0.073610197	0.021636914	0	0.003000001	0.055860016	0.010028199	0.006161577	0	0.166847583	0.102515343	0
0	0.032713589	0.00884943	0	0.012000003	0.130340037	0.031298414	0.008466608	0	0.003000001	0.055860016	0.008900344	0.00603301	0	0.148082513	0.100376261	0
0	0.059897435	0.01492241	0	0.012000003	0.130340037	0.057306298	0.014276873	0	0.003000001	0.055860016	0.009379357	0.006098675	0	0.156052249	0.101468787	0
0	0.033375689	0.071324012	0	0.012000003	0.130340037	0.031931871	0.068238567	0	0.003000001	0.055860016	0.011299768	0.032729349	0	0.188003749	0.544545705	0
0	0.008142534	0.005218657	0	0.012000003	0.130340037	0.007790292	0.0049929	0	0.003000001	0.055860016	0.010116511	0.016845532	0	0.168316907	0.280273293	0
0	1.143334613	0.547955354	0	0.03600001	0.061740018	1.093874464	0.524251048	0	0.009000003	0.026460008	0.01621537	0.015879402	0	0.269788755	0.264198969	0
0	0.050417027	0.24529842	0	0.03600001	0.061740018	0.048236009	0.234686919	0	0.009000003	0.026460008	0.01326988	0.245900892	0	0.220782162	4.091260008	0
0	0.045655522	0.017240497	0	0.03600001	0.061740018	0.043680484	0.016494681	0	0.009000003	0.026460008	0.016799133	0.03789945	0	0.279501314	0.630565026	0
0	0.055479918	0.475080349	0	0.03600001	0.061740018	0.053079881	0.454528583	0	0.009000003	0.026460008	0.012790119	0.286485937	0	0.212799973	4.766507537	0
0	0.04925478	0.284519608	0	0.03600001	0.061740018	0.04712404	0.272211415	0	0.009000003	0.026460008	0.013272219	0.306788747	0	0.220821074	5.104302459	0
0	0.034132822	0.009601146	0	0.03600001	0.061740018	0.032656251	0.009185805	0	0.009000003	0.026460008	0.017599995	0.044689944	0	0.29282592	0.74354419	0
0	0.038662632	0.015329986	0	0.03600001	0.061740018	0.036990103	0.014666817	0	0.009000003	0.026460008	0.017996652	0.071356872	0	0.299425445	1.18722431	0
0	0.061736852	0.089201316	0	0.03600001	0.061740018	0.059066143	0.085342507	0	0.009000003	0.026460008	0.017321719	0.031681684	0	0.288196018	0.527114821	0
0	0.104052409	0.040094723	0	0.03600001	0.061740018	0.099551148	0.038360243	0	0.009000003	0.026460008	0.015005979	0.049458817	0	0.249667099	0.822887938	0
0	0.141891411	0.039487867	0	0.03600001	0.061740018	0.135753252	0.03777964	0	0.009000003	0.026460008	0.01787511	0.036525007	0	0.297403247	0.607697269	0
0	0.015438061	0.051235754	0	0.03600001	0.061740018	0.014770218	0.049019318	0	0.009000003	0.026460008	0.037339118	0.039359071	0	0.621242314	0.654849969	0
0	0.105715852	0.054877302	0	0.03600001	0.061740018	0.101142631	0.052503334	0	0.009000003	0.026460008	0.01358508	0.040888933	0	0.226026404	0.680303581	0
0	0.128766567	0.027509301	0	0.03600001	0.061740018	0.123196182	0.026319261	0	0.009000003	0.026460008	0.017927955	0.038527813	0	0.298282468	0.641019631	0
0	0.018529708	0.009544771	0	0.03600001	0.061740018	0.017728121	0.009131869	0	0.009000003	0.026460008	0.016305477	0.016912779	0	0.271287945	0.281392136	0

Idling Emissions Factors

EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: PLACER
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	VMT	% of Population		ROG_RUNI	TOG_RUNI	CO_RUNEX	NOx_RUNI	SOx_RUNE	CO2_RUNI	CH4_RUNE	PM10_RUI	PM2_5_RU	N2O_RUNEX
PLACER	2020	LDA	Aggregate	10	GAS	5418.835	48%		0.061474	0.089534	1.489872	0.093088	0.005374	543.0389	0.0149	0.007036	0.00647	0.009174
PLACER	2020	LDT1	Aggregate	10	GAS	797.0605	6%		0.113971	0.166093	2.515087	0.200174	0.006216	628.1636	0.025544	0.009082	0.008351	0.014775
PLACER	2020	LDT2	Aggregate	10	GAS	2992.409	22%		0.076289	0.111265	1.787247	0.164622	0.006867	693.9072	0.018496	0.006619	0.006086	0.01287
PLACER	2020	LHD1	Aggregate	10	GAS	12805.75	2%		0.164049	0.236804	2.378178	0.43626	0.015601	1576.561	0.032975	0.005645	0.005193	0.025504
PLACER	2020	LHD2	Aggregate	10	GAS	1672.158	0%		0.088664	0.129378	1.192787	0.331904	0.017803	1799.025	0.019722	0.004341	0.003991	0.021799
PLACER	2020	MDV	Aggregate	10	GAS	1994.791	17%		0.125308	0.176045	2.636041	0.224599	0.008428	851.7146	0.026915	0.006983	0.006425	0.016459
							100%	Weighted Average:	0.079071	0.114049	1.783746	0.14271	0.006328	639.4491	0.018298	0.006779	0.006234	0.011644
								grams/hour	0.790709	1.140492	17.83746	1.427103	0.063279	6394.491	0.182982	0.067792	0.062342	0.116435

*Green cels indicate calculations made using data from EMFAC. Non-highlighted cells are direct outpus from EMFAC2017.
Weighted average is calculated based on the percent of population attributable to each vehicle type. Percent of population is obtained from the EMFAC2017 data for aggregate speeds (see 'EMFAC2017-vehicle population)

EMFAC2017 - vehicle population

EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: PLACER
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

						miles/day		
Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	Population	VMT	Trips	% of Population
PLACER	2020	LDA	Aggregate	Aggregate	GAS	123597.5	4664456.208	581628.8	48%
PLACER	2020	LDT1	Aggregate	Aggregate	GAS	16642.32	626084.2598	76034.21	6%
PLACER	2020	LDT2	Aggregate	Aggregate	GAS	57708.41	2240153.802	268117.3	22%
PLACER	2020	LHD1	Aggregate	Aggregate	GAS	5042.422	173047.8336	75124.57	2%
PLACER	2020	LHD2	Aggregate	Aggregate	GAS	627.6128	22596.3604	9350.496	0%
PLACER	2020	MCY	Aggregate	Aggregate	GAS	9232.642	64721.26897	18465.28	4%
PLACER	2020	MDV	Aggregate	Aggregate	GAS	44340.27	1503712.637	203185.2	17%
						257191.2			100%

*Green cels indicate calculations made using data from EMFAC2017.

EMFAC Particulate Matter Idling Calcs

EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: PLACER
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	VMT	ROG_RUN	TOG_RUNI	CO_RUNEX	NOx_RUNE	SOx_RUNE	CO2_RUNE	CH4_RUNE	g/miles PM10_RUI	g/hour (columns 'O' * 'E') PM10_idling	PM2_5_RU	g/hour (columns 'O' * 'E') PM10_idling	N2O_RUNEX
PLACER	2020	LHD1	Aggregate	5	GAS	4910.97	0.249842	0.360844	3.039348	0.495001	0.019222	1942.481	0.05062	0.008889	0.044446418	0.008176	0.040882285	0.029078
PLACER	2020	LHD2	Aggregate	5	GAS	641.2681	0.137246	0.200269	1.472198	0.380151	0.021932	2216.273	0.03072	0.006871	0.034355715	0.006318	0.031588812	0.025028

TRU Emission Factors

OFFROAD2017 (v1.0.1) Emissions Inventory
Region Type: County
Region: Placer
Calendar Year: 2018
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2017 Equipment Types
Units: Emissions: tons/day, Fuel Consumption: gallons/year, Activity: hours/year, HP-Hours: HP-hours/year

Region	CalYr	VehClass	MdlYr	HP_Bin	Fuel	Total_Activ	Total_Popu	Horsepower_H	HC_tpd	ROG_tpd	TOG_tpd	CO_tpd	NOx_tpd	CO2_tpd	PM10_tpd	PM2_5_tpd	PM_tpd	SOx_tpd	NH3_tpd	Fuel_gpy
Placer	2018	TRU - Instate Truck TRU	Aggregate	25	Diesel	109772.9	80.65606	1547797.865	0.000941	0.001138	0.001355	0.009106	0.011044	0.218052	0.000471442	0.000433727	0.000471442	2.0013E-06	1.79165E-06	138.411294

Emission Rates

g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/gallon	g/gallon
ROG Exh	NOX Exh	CO Exhau	PM10 Exhaus	PM2.5 Exhau	CO2 Exhaust	SOX Exhaust	CH4*	N2O*
0.24	2.36	1.95	0.10	0.09	46.65	0.00	0.57	0.26

*Source for CH4 and N2O emission factors for TRU is: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf (Table 5)

grams per ton: 907185
Fuel use (gallons/hr): 0.001261

CalEEMod Output Files

Loomis Costco - Recirculated DEIR

Placer-Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.29	Acre	2.29	99,752.40	0
Parking Lot	778.00	Space	7.00	311,200.00	0
Discount Club	155.00	1000sqft	10.21	155,000.00	0
Gasoline/Service Station	30.00	Pump	0.10	4,235.25	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land use based on project description and overal site disturbance. Other Asphalt Surfaces for Condition of Approval roadway project and Transportation mitigation roadway improvements applicable to Alternative Option A.

Construction Phase - Construction phases and duration based on project-specific construction schedule.

Off-road Equipment - Construction equipment based on project-specific equipment list.

Trips and VMT - Worker trips based on CalEEMod defaults.
Vendor trips based on project-specific projections.
Balanced site.

Grading -

Vehicle Trips - Operational trip rates adjusted to reflect daily new VMT to roadways per Traffic Impact Analysis.

Area Coating -

Construction Off-road Equipment Mitigation - Watering of disturbed areas on site for dust suppression mitigation.

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Parking	24657	24655
tblConstructionPhase	NumDays	300.00	20.00
tblConstructionPhase	NumDays	30.00	50.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	20.00	10.00
tblLandUse	LotAcreage	3.56	10.21
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	3.00
tblTripsAndVMT	VendorTripNumber	0.00	114.00
tblTripsAndVMT	VendorTripNumber	0.00	124.00
tblTripsAndVMT	VendorTripNumber	0.00	56.00
tblTripsAndVMT	VendorTripNumber	0.00	60.00
tblTripsAndVMT	VendorTripNumber	93.00	20.00
tblTripsAndVMT	WorkerTripNumber	38.00	28.00
tblVehicleTrips	CC_TL	7.30	16.00
tblVehicleTrips	CC_TTP	64.30	80.10
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	7.80
tblVehicleTrips	CW_TTP	16.70	19.90
tblVehicleTrips	DV_TP	40.00	31.50
tblVehicleTrips	PB_TP	15.00	33.30
tblVehicleTrips	PR_TP	45.00	35.20
tblVehicleTrips	ST_TR	53.75	15.70
tblVehicleTrips	ST_TR	168.56	0.00
tblVehicleTrips	SU_TR	33.67	15.70
tblVehicleTrips	SU_TR	168.56	0.00
tblVehicleTrips	WD_TR	41.80	15.20
tblVehicleTrips	WD_TR	168.56	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	80.0118	76.1019	47.7399	0.1154	9.9406	2.9812	12.9219	3.9084	2.7835	6.6919	0.0000	11,407.4889	11,407.4889	2.3785	0.0000	11,466.9519
Maximum	**80.0118**	**76.1019**	**47.7399**	**0.1154**	**9.9406**	**2.9812**	**12.9219**	**3.9084**	**2.7835**	**6.6919**	**0.0000**	**11,407.4889**	**11,407.4889**	**2.3785**	**0.0000**	**11,466.9519**

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					
2020	80.0118	76.1019	47.7399	0.1154	5.0245	2.9812	8.0057	1.9146	2.7835	4.6981	0.0000	11,407.4889	11,407.4889	2.3785	0.0000	11,466.9519
Maximum	**80.0118**	**76.1019**	**47.7399**	**0.1154**	**5.0245**	**2.9812**	**8.0057**	**1.9146**	**2.7835**	**4.6981**	**0.0000**	**11,407.4889**	**11,407.4889**	**2.3785**	**0.0000**	**11,466.9519**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**49.46**	**0.00**	**38.05**	**51.01**	**0.00**	**29.79**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.9983	9.2000e-004	0.0992	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2113	0.2113	5.7000e-004		0.2254
Energy	0.0559	0.5083	0.4270	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.9742	609.9742	0.0117	0.0112	613.5990
Mobile	4.2009	29.7588	49.1444	0.1568	11.7646	0.1784	11.9430	3.1527	0.1683	3.3211		15,885.7792	15,885.7792	0.7552		15,904.6580
Total	**8.2551**	**30.2680**	**49.6706**	**0.1599**	**11.7646**	**0.2174**	**11.9820**	**3.1527**	**0.2073**	**3.3601**		**16,495.9647**	**16,495.9647**	**0.7674**	**0.0112**	**16,518.4824**

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	3.9983	9.2000e-004	0.0992	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2113	0.2113	5.7000e-004		0.2254
Energy	0.0559	0.5083	0.4270	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.9742	609.9742	0.0117	0.0112	613.5990
Mobile	4.2009	29.7588	49.1444	0.1568	11.7646	0.1784	11.9430	3.1527	0.1683	3.3211		15,885.7792	15,885.7792	0.7552		15,904.6580
Total	**8.2551**	**30.2680**	**49.6706**	**0.1599**	**11.7646**	**0.2174**	**11.9820**	**3.1527**	**0.2073**	**3.3601**		**16,495.9647**	**16,495.9647**	**0.7674**	**0.0112**	**16,518.4824**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**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	Rough Grade	Grading	1/15/2020	3/24/2020	5	50	Prep for construction, including removal of old slap and abandoned utilities, grading, and base for paving
2	Base for Paving	Paving	3/25/2020	3/31/2020	5	5	
3	Paving - Asphalt	Paving	4/1/2020	4/7/2020	5	5	Asphalt
4	Concrete Foundations/Slab on Grade	Paving	4/8/2020	4/21/2020	5	10	Delivery and pour of concrete foundations/slab
5	Metal Building Erection	Building Construction	4/22/2020	5/19/2020	5	20	Erection of pre-fabricated metal building
6	Architectural Coating	Architectural Coating	5/20/2020	6/16/2020	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 9.29

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 238,853; Non-Residential Outdoor: 79,618; Striped Parking Area: 24,657 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Rough Grade	Crushing/Proc. Equipment	2	8.00	85	0.78
Rough Grade	Excavators	1	8.00	158	0.38
Rough Grade	Graders	1	8.00	187	0.41
Rough Grade	Rubber Tired Dozers	1	8.00	247	0.40
Rough Grade	Scrapers	6	3.00	367	0.48
Rough Grade	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Base for Paving	Rollers	3	8.00	80	0.38
Base for Paving	Rubber Tired Loaders	2	8.00	203	0.36
Paving - Asphalt	Paving Equipment	1	8.00	132	0.36
Paving - Asphalt	Rollers	3	8.00	80	0.38
Paving - Asphalt	Rubber Tired Loaders	1	8.00	203	0.36
Concrete Foundations/Slab on Grade	Off-Highway Tractors	4	8.00	124	0.44
Concrete Foundations/Slab on Grade	Other Construction Equipment	1	8.00	172	0.42
Metal Building Erection	Aerial Lifts	13	8.00	63	0.31
Metal Building Erection	Excavators	2	8.00	158	0.38
Metal Building Erection	Forklifts	5	8.00	89	0.20
Metal Building Erection	Off-Highway Tractors	4	8.00	124	0.44
Metal Building Erection	Rough Terrain Forklifts	1	8.00	100	0.40
Architectural Coating	Air Compressors	1	8.00	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
Rough Grade	15	28.00	114.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Base for Paving	5	13.00	124.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Asphalt	5	13.00	56.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Foundations/Slab on	5	13.00	60.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Metal Building Erection	25	224.00	20.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	45.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Rough Grade - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.9385	0.0000	8.9385	3.6251	0.0000	3.6251			0.0000			0.0000
Off-Road	5.9785	62.5315	43.8190	0.0809		2.9196	2.9196		2.7246	2.7246		7,803.0979	7,803.0979	2.1921		7,857.8993
Total	**5.9785**	**62.5315**	**43.8190**	**0.0809**	**8.9385**	**2.9196**	**11.8581**	**3.6251**	**2.7246**	**6.3497**		**7,803.0979**	**7,803.0979**	**2.1921**		**7,857.8993**

3.2 Rough Grade - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4343	13.4954	2.9493	0.0325	0.7722	0.0602	0.8323	0.2223	0.0575	0.2798		3,400.3201	3,400.3201	0.1814		3,404.8537
Worker	0.1052	0.0749	0.7360	2.0500e-003	0.2300	1.4600e-003	0.2315	0.0610	1.3500e-003	0.0624		204.0709	204.0709	5.1200e-003		204.1989
Total	**0.5395**	**13.5703**	**3.6854**	**0.0346**	**1.0022**	**0.0616**	**1.0638**	**0.2833**	**0.0589**	**0.3422**		**3,604.3910**	**3,604.3910**	**0.1865**		**3,609.0526**

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					4.0223	0.0000	4.0223	1.6313	0.0000	1.6313			0.0000			0.0000
Off-Road	5.9785	62.5315	43.8190	0.0809		2.9196	2.9196		2.7246	2.7246	0.0000	7,803.0979	7,803.0979	2.1921		7,857.8993
Total	**5.9785**	**62.5315**	**43.8190**	**0.0809**	**4.0223**	**2.9196**	**6.9419**	**1.6313**	**2.7246**	**4.3559**	**0.0000**	**7,803.0979**	**7,803.0979**	**2.1921**		**7,857.8993**

3.2 Rough Grade - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4343	13.4954	2.9493	0.0325	0.7722	0.0602	0.8323	0.2223	0.0575	0.2798		3,400.3201	3,400.3201	0.1814		3,404.8537
Worker	0.1052	0.0749	0.7360	2.0500e-003	0.2300	1.4600e-003	0.2315	0.0610	1.3500e-003	0.0624		204.0709	204.0709	5.1200e-003		204.1989
Total	**0.5395**	**13.5703**	**3.6854**	**0.0346**	**1.0022**	**0.0616**	**1.0638**	**0.2833**	**0.0589**	**0.3422**		**3,604.3910**	**3,604.3910**	**0.1865**		**3,609.0526**

3.3 Base for Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3726	15.0626	8.9510	0.0204		0.6908	0.6908		0.6355	0.6355		1,972.5192	1,972.5192	0.6380		1,988.4680
Paving	4.8680					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**6.2406**	**15.0626**	**8.9510**	**0.0204**		**0.6908**	**0.6908**		**0.6355**	**0.6355**		**1,972.5192**	**1,972.5192**	**0.6380**		**1,988.4680**

3.3 Base for Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4724	14.6792	3.2080	0.0354	0.8399	0.0654	0.9053	0.2418	0.0626	0.3044		3,698.5937	3,698.5937	0.1973		3,703.5251
Worker	0.0488	0.0348	0.3417	9.5000e-004	0.1068	6.8000e-004	0.1075	0.0283	6.3000e-004	0.0290		94.7472	94.7472	2.3800e-003		94.8066
Total	**0.5213**	**14.7140**	**3.5498**	**0.0363**	**0.9467**	**0.0661**	**1.0128**	**0.2701**	**0.0632**	**0.3333**		**3,793.3410**	**3,793.3410**	**0.1996**		**3,798.3317**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3726	15.0626	8.9510	0.0204		0.6908	0.6908		0.6355	0.6355	0.0000	1,972.5192	1,972.5192	0.6380		1,988.4680
Paving	4.8680					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**6.2406**	**15.0626**	**8.9510**	**0.0204**		**0.6908**	**0.6908**		**0.6355**	**0.6355**	**0.0000**	**1,972.5192**	**1,972.5192**	**0.6380**		**1,988.4680**

3.3 Base for Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4724	14.6792	3.2080	0.0354	0.8399	0.0654	0.9053	0.2418	0.0626	0.3044		3,698.5937	3,698.5937	0.1973		3,703.5251
Worker	0.0488	0.0348	0.3417	9.5000e-004	0.1068	6.8000e-004	0.1075	0.0283	6.3000e-004	0.0290		94.7472	94.7472	2.3800e-003		94.8066
Total	**0.5213**	**14.7140**	**3.5498**	**0.0363**	**0.9467**	**0.0661**	**1.0128**	**0.2701**	**0.0632**	**0.3333**		**3,793.3410**	**3,793.3410**	**0.1996**		**3,798.3317**

3.4 Paving - Asphalt - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2060	12.7943	9.8500	0.0182		0.6515	0.6515		0.5994	0.5994		1,761.8874	1,761.8874	0.5698		1,776.1332
Paving	4.8680					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**6.0739**	**12.7943**	**9.8500**	**0.0182**		**0.6515**	**0.6515**		**0.5994**	**0.5994**		**1,761.8874**	**1,761.8874**	**0.5698**		**1,776.1332**

3.4 Paving - Asphalt - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2134	6.6293	1.4488	0.0160	0.3793	0.0296	0.4089	0.1092	0.0283	0.1375		1,670.3327	1,670.3327	0.0891		1,672.5597
Worker	0.0488	0.0348	0.3417	9.5000e-004	0.1068	6.8000e-004	0.1075	0.0283	6.3000e-004	0.0290		94.7472	94.7472	2.3800e-003		94.8066
Total	**0.2622**	**6.6641**	**1.7905**	**0.0169**	**0.4861**	**0.0302**	**0.5163**	**0.1375**	**0.0289**	**0.1664**		**1,765.0799**	**1,765.0799**	**0.0915**		**1,767.3663**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2060	12.7943	9.8500	0.0182		0.6515	0.6515		0.5994	0.5994	0.0000	1,761.8874	1,761.8874	0.5698		1,776.1332
Paving	4.8680					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**6.0739**	**12.7943**	**9.8500**	**0.0182**		**0.6515**	**0.6515**		**0.5994**	**0.5994**	**0.0000**	**1,761.8874**	**1,761.8874**	**0.5698**		**1,776.1332**

3.4 Paving - Asphalt - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2134	6.6293	1.4488	0.0160	0.3793	0.0296	0.4089	0.1092	0.0283	0.1375		1,670.3327	1,670.3327	0.0891		1,672.5597
Worker	0.0488	0.0348	0.3417	9.5000e-004	0.1068	6.8000e-004	0.1075	0.0283	6.3000e-004	0.0290		94.7472	94.7472	2.3800e-003		94.8066
Total	**0.2622**	**6.6641**	**1.7905**	**0.0169**	**0.4861**	**0.0302**	**0.5163**	**0.1375**	**0.0289**	**0.1664**		**1,765.0799**	**1,765.0799**	**0.0915**		**1,767.3663**

3.5 Concrete Foundations/Slab on Grade - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5371	16.3642	16.4973	0.0250		0.8162	0.8162		0.7509	0.7509		2,419.1062	2,419.1062	0.7824		2,438.6659
Paving	2.4340					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.9711**	**16.3642**	**16.4973**	**0.0250**		**0.8162**	**0.8162**		**0.7509**	**0.7509**		**2,419.1062**	**2,419.1062**	**0.7824**		**2,438.6659**

3.5 Concrete Foundations/Slab on Grade - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2286	7.1029	1.5523	0.0171	0.4064	0.0317	0.4381	0.1170	0.0303	0.1473		1,789.6421	1,789.6421	0.0955		1,792.0283
Worker	0.0488	0.0348	0.3417	9.5000e-004	0.1068	6.8000e-004	0.1075	0.0283	6.3000e-004	0.0290		94.7472	94.7472	2.3800e-003		94.8066
Total	**0.2774**	**7.1376**	**1.8940**	**0.0181**	**0.5132**	**0.0323**	**0.5455**	**0.1453**	**0.0309**	**0.1762**		**1,884.3894**	**1,884.3894**	**0.0978**		**1,886.8349**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5371	16.3642	16.4973	0.0250		0.8162	0.8162		0.7509	0.7509	0.0000	2,419.1062	2,419.1062	0.7824		2,438.6659
Paving	2.4340					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.9711**	**16.3642**	**16.4973**	**0.0250**		**0.8162**	**0.8162**		**0.7509**	**0.7509**	**0.0000**	**2,419.1062**	**2,419.1062**	**0.7824**		**2,438.6659**

3.5 Concrete Foundations/Slab on Grade - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2286	7.1029	1.5523	0.0171	0.4064	0.0317	0.4381	0.1170	0.0303	0.1473		1,789.6421	1,789.6421	0.0955		1,792.0283
Worker	0.0488	0.0348	0.3417	9.5000e-004	0.1068	6.8000e-004	0.1075	0.0283	6.3000e-004	0.0290		94.7472	94.7472	2.3800e-003		94.8066
Total	**0.2774**	**7.1376**	**1.8940**	**0.0181**	**0.5132**	**0.0323**	**0.5455**	**0.1453**	**0.0309**	**0.1762**		**1,884.3894**	**1,884.3894**	**0.0978**		**1,886.8349**

3.6 Metal Building Erection - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9013	32.5351	41.3343	0.0621		1.5153	1.5153		1.3941	1.3941		6,008.4317	6,008.4317	1.9433		6,057.0129
Total	**2.9013**	**32.5351**	**41.3343**	**0.0621**		**1.5153**	**1.5153**		**1.3941**	**1.3941**		**6,008.4317**	**6,008.4317**	**1.9433**		**6,057.0129**

3.6 Metal Building Erection - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0762	2.3676	0.5174	5.7000e-003	0.1355	0.0106	0.1460	0.0390	0.0101	0.0491		596.5474	596.5474	0.0318		597.3428
Worker	0.8413	0.5993	5.8882	0.0164	1.8401	0.0117	1.8518	0.4881	0.0108	0.4989		1,632.5675	1,632.5675	0.0409		1,633.5908
Total	**0.9175**	**2.9669**	**6.4056**	**0.0221**	**1.9756**	**0.0222**	**1.9978**	**0.5271**	**0.0209**	**0.5480**		**2,229.1148**	**2,229.1148**	**0.0728**		**2,230.9336**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9013	32.5351	41.3343	0.0621		1.5153	1.5153		1.3941	1.3941	0.0000	6,008.4317	6,008.4317	1.9433		6,057.0129
Total	**2.9013**	**32.5351**	**41.3343**	**0.0621**		**1.5153**	**1.5153**		**1.3941**	**1.3941**	**0.0000**	**6,008.4317**	**6,008.4317**	**1.9433**		**6,057.0129**

3.6 Metal Building Erection - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0762	2.3676	0.5174	5.7000e-003	0.1355	0.0106	0.1460	0.0390	0.0101	0.0491		596.5474	596.5474	0.0318		597.3428
Worker	0.8413	0.5993	5.8882	0.0164	1.8401	0.0117	1.8518	0.4881	0.0108	0.4989		1,632.5675	1,632.5675	0.0409		1,633.5908
Total	**0.9175**	**2.9669**	**6.4056**	**0.0221**	**1.9756**	**0.0222**	**1.9978**	**0.5271**	**0.0209**	**0.5480**		**2,229.1148**	**2,229.1148**	**0.0728**		**2,230.9336**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	79.5199					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3229	2.2451	2.4419	3.9600e-003		0.1479	0.1479		0.1479	0.1479		375.2641	375.2641	0.0291		375.9904
Total	**79.8428**	**2.2451**	**2.4419**	**3.9600e-003**		**0.1479**	**0.1479**		**0.1479**	**0.1479**		**375.2641**	**375.2641**	**0.0291**		**375.9904**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1690	0.1204	1.1829	3.2900e-003	0.3697	2.3500e-003	0.3720	0.0981	2.1600e-003	0.1002		327.9711	327.9711	8.2200e-003		328.1767
Total	**0.1690**	**0.1204**	**1.1829**	**3.2900e-003**	**0.3697**	**2.3500e-003**	**0.3720**	**0.0981**	**2.1600e-003**	**0.1002**		**327.9711**	**327.9711**	**8.2200e-003**		**328.1767**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	79.5199					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3229	2.2451	2.4419	3.9600e-003		0.1479	0.1479		0.1479	0.1479	0.0000	375.2641	375.2641	0.0291		375.9904
Total	**79.8428**	**2.2451**	**2.4419**	**3.9600e-003**		**0.1479**	**0.1479**		**0.1479**	**0.1479**	**0.0000**	**375.2641**	**375.2641**	**0.0291**		**375.9904**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1690	0.1204	1.1829	3.2900e-003	0.3697	2.3500e-003	0.3720	0.0981	2.1600e-003	0.1002		327.9711	327.9711	8.2200e-003		328.1767
Total	**0.1690**	**0.1204**	**1.1829**	**3.2900e-003**	**0.3697**	**2.3500e-003**	**0.3720**	**0.0981**	**2.1600e-003**	**0.1002**		**327.9711**	**327.9711**	**8.2200e-003**		**328.1767**

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	4.2009	29.7588	49.1444	0.1568	11.7646	0.1784	11.9430	3.1527	0.1683	3.3211		15,885.7792	15,885.7792	0.7552		15,904.6580
Unmitigated	4.2009	29.7588	49.1444	0.1568	11.7646	0.1784	11.9430	3.1527	0.1683	3.3211		15,885.7792	15,885.7792	0.7552		15,904.6580

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Discount Club	2,356.00	2,433.50	2433.50	5,386,385	5,386,385
Gasoline/Service Station	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	2,356.00	2,433.50	2,433.50	5,386,385	5,386,385

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
Discount Club	7.80	16.00	0.00	19.90	80.10	0.00	35.2	31.5	33.3
Gasoline/Service Station	9.50	7.30	7.30	2.00	79.00	19.00	14	27	59
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Discount Club	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333
Gasoline/Service Station	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333
Other Asphalt Surfaces	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333
Parking Lot	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures 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	0.0559	0.5083	0.4270	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.9742	609.9742	0.0117	0.0112	613.5990
NaturalGas Unmitigated	0.0559	0.5083	0.4270	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.9742	609.9742	0.0117	0.0112	613.5990

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					
Discount Club	4968.49	0.0536	0.4871	0.4092	2.9200e-003		0.0370	0.0370		0.0370	0.0370		584.5286	584.5286	0.0112	0.0107	588.0022
Gasoline/Service Station	216.288	2.3300e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4456	25.4456	4.9000e-004	4.7000e-004	25.5968
Other Asphalt Surfaces	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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0559**	**0.5083**	**0.4270**	**3.0500e-003**		**0.0386**	**0.0386**		**0.0386**	**0.0386**		**609.9742**	**609.9742**	**0.0117**	**0.0112**	**613.5990**

5.2 Energy by Land Use - NaturalGas

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					
Discount Club	4.96849	0.0536	0.4871	0.4092	2.9200e-003		0.0370	0.0370		0.0370	0.0370		584.5286	584.5286	0.0112	0.0107	588.0022
Gasoline/Service Station	0.216288	2.3300e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4456	25.4456	4.9000e-004	4.7000e-004	25.5968
Other Asphalt Surfaces	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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0559**	**0.5083**	**0.4270**	**3.0500e-003**		**0.0386**	**0.0386**		**0.0386**	**0.0386**		**609.9742**	**609.9742**	**0.0117**	**0.0112**	**613.5990**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.9983	9.2000e-004	0.0992	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2113	0.2113	5.7000e-004		0.2254
Unmitigated	3.9983	9.2000e-004	0.0992	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2113	0.2113	5.7000e-004		0.2254

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	0.4357					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.5532					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.3300e-003	9.2000e-004	0.0992	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2113	0.2113	5.7000e-004		0.2254
Total	**3.9982**	**9.2000e-004**	**0.0992**	**1.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.6000e-004**	**3.6000e-004**		**0.2113**	**0.2113**	**5.7000e-004**		**0.2254**

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	0.4357					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.5532					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.3300e-003	9.2000e-004	0.0992	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2113	0.2113	5.7000e-004		0.2254
Total	**3.9982**	**9.2000e-004**	**0.0992**	**1.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.6000e-004**	**3.6000e-004**		**0.2113**	**0.2113**	**5.7000e-004**		**0.2254**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 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

Loomis Costco - Recirculated DEIR

Placer-Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.29	Acre	2.29	99,752.40	0
Parking Lot	778.00	Space	7.00	311,200.00	0
Discount Club	155.00	1000sqft	10.21	155,000.00	0
Gasoline/Service Station	30.00	Pump	0.10	4,235.25	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land use based on project description and overal site disturbance. Other Asphalt Surfaces for Condition of Approval roadway project and Transportation mitigation roadway improvements applicable to Alternative Option A.

Construction Phase - Construction phases and duration based on project-specific construction schedule.

Off-road Equipment - Construction equipment based on project-specific equipment list.

Trips and VMT - Worker trips based on CalEEMod defaults.
Vendor trips based on project-specific projections.
Balanced site.

Grading -

Vehicle Trips - Operational trip rates adjusted to reflect daily new VMT to roadways per Traffic Impact Analysis.

Area Coating -

Construction Off-road Equipment Mitigation - Watering of disturbed areas on site for dust suppression mitigation.

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Parking	24657	24655
tblConstructionPhase	NumDays	300.00	20.00
tblConstructionPhase	NumDays	30.00	50.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	20.00	10.00
tblLandUse	LotAcreage	3.56	10.21
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	3.00
tblTripsAndVMT	VendorTripNumber	0.00	114.00
tblTripsAndVMT	VendorTripNumber	0.00	124.00
tblTripsAndVMT	VendorTripNumber	0.00	56.00
tblTripsAndVMT	VendorTripNumber	0.00	60.00
tblTripsAndVMT	VendorTripNumber	93.00	20.00
tblTripsAndVMT	WorkerTripNumber	38.00	28.00
tblVehicleTrips	CC_TL	7.30	16.00
tblVehicleTrips	CC_TTP	64.30	80.10
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	7.80
tblVehicleTrips	CW_TTP	16.70	19.90
tblVehicleTrips	DV_TP	40.00	31.50
tblVehicleTrips	PB_TP	15.00	33.30
tblVehicleTrips	PR_TP	45.00	35.20
tblVehicleTrips	ST_TR	53.75	15.70
tblVehicleTrips	ST_TR	168.56	0.00
tblVehicleTrips	SU_TR	33.67	15.70
tblVehicleTrips	SU_TR	168.56	0.00
tblVehicleTrips	WD_TR	41.80	15.20
tblVehicleTrips	WD_TR	168.56	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	80.0176	75.9484	48.3342	0.1168	9.9406	2.9796	12.9203	3.9084	2.7820	6.6904	0.0000	11,550.6447	11,550.6447	2.3581	0.0000	11,609.5961
Maximum	**80.0176**	**75.9484**	**48.3342**	**0.1168**	**9.9406**	**2.9796**	**12.9203**	**3.9084**	**2.7820**	**6.6904**	**0.0000**	**11,550.6447**	**11,550.6447**	**2.3581**	**0.0000**	**11,609.5961**

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					
2020	80.0176	75.9484	48.3342	0.1168	5.0245	2.9796	8.0041	1.9146	2.7820	4.6966	0.0000	11,550.6447	11,550.6447	2.3581	0.0000	11,609.5961
Maximum	**80.0176**	**75.9484**	**48.3342**	**0.1168**	**5.0245**	**2.9796**	**8.0041**	**1.9146**	**2.7820**	**4.6966**	**0.0000**	**11,550.6447**	**11,550.6447**	**2.3581**	**0.0000**	**11,609.5961**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**49.46**	**0.00**	**38.05**	**51.01**	**0.00**	**29.80**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.9983	9.2000e-004	0.0992	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2113	0.2113	5.7000e-004		0.2254
Energy	0.0559	0.5083	0.4270	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.9742	609.9742	0.0117	0.0112	613.5990
Mobile	5.2126	28.6146	49.3592	0.1708	11.7646	0.1754	11.9400	3.1527	0.1655	3.3182		17,298.6012	17,298.6012	0.7195		17,316.5896
Total	**9.2667**	**29.1238**	**49.8853**	**0.1739**	**11.7646**	**0.2144**	**11.9790**	**3.1527**	**0.2045**	**3.3572**		**17,908.7867**	**17,908.7867**	**0.7318**	**0.0112**	**17,930.4140**

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	3.9983	9.2000e-004	0.0992	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2113	0.2113	5.7000e-004		0.2254
Energy	0.0559	0.5083	0.4270	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.9742	609.9742	0.0117	0.0112	613.5990
Mobile	5.2126	28.6146	49.3592	0.1708	11.7646	0.1754	11.9400	3.1527	0.1655	3.3182		17,298.6012	17,298.6012	0.7195		17,316.5896
Total	**9.2667**	**29.1238**	**49.8853**	**0.1739**	**11.7646**	**0.2144**	**11.9790**	**3.1527**	**0.2045**	**3.3572**		**17,908.7867**	**17,908.7867**	**0.7318**	**0.0112**	**17,930.4140**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**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	Rough Grade	Grading	1/15/2020	3/24/2020	5	50	Prep for construction, including removal of old slap and abandoned utilities, grading, and base for paving
2	Base for Paving	Paving	3/25/2020	3/31/2020	5	5	
3	Paving - Asphalt	Paving	4/1/2020	4/7/2020	5	5	Asphalt
4	Concrete Foundations/Slab on Grade	Paving	4/8/2020	4/21/2020	5	10	Delivery and pour of concrete foundations/slab
5	Metal Building Erection	Building Construction	4/22/2020	5/19/2020	5	20	Erection of pre-fabricated metal building
6	Architectural Coating	Architectural Coating	5/20/2020	6/16/2020	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 9.29

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 238,853; Non-Residential Outdoor: 79,618; Striped Parking Area: 24,657 (Architectural Coating – sqft)

OffRoad Equipment

Loomis Costco - Recirculated DEIR - Placer-Sacramento County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Rough Grade	Crushing/Proc. Equipment	2	8.00	85	0.78
Rough Grade	Excavators	1	8.00	158	0.38
Rough Grade	Graders	1	8.00	187	0.41
Rough Grade	Rubber Tired Dozers	1	8.00	247	0.40
Rough Grade	Scrapers	6	3.00	367	0.48
Rough Grade	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Base for Paving	Rollers	3	8.00	80	0.38
Base for Paving	Rubber Tired Loaders	2	8.00	203	0.36
Paving - Asphalt	Paving Equipment	1	8.00	132	0.36
Paving - Asphalt	Rollers	3	8.00	80	0.38
Paving - Asphalt	Rubber Tired Loaders	1	8.00	203	0.36
Concrete Foundations/Slab on Grade	Off-Highway Tractors	4	8.00	124	0.44
Concrete Foundations/Slab on Grade	Other Construction Equipment	1	8.00	172	0.42
Metal Building Erection	Aerial Lifts	13	8.00	63	0.31
Metal Building Erection	Excavators	2	8.00	158	0.38
Metal Building Erection	Forklifts	5	8.00	89	0.20
Metal Building Erection	Off-Highway Tractors	4	8.00	124	0.44
Metal Building Erection	Rough Terrain Forklifts	1	8.00	100	0.40
Architectural Coating	Air Compressors	1	8.00	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
Rough Grade	15	28.00	114.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Base for Paving	5	13.00	124.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Asphalt	5	13.00	56.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Foundations/Slab on	5	13.00	60.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Metal Building Erection	25	224.00	20.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	45.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Rough Grade - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.9385	0.0000	8.9385	3.6251	0.0000	3.6251			0.0000			0.0000
Off-Road	5.9785	62.5315	43.8190	0.0809		2.9196	2.9196		2.7246	2.7246		7,803.0979	7,803.0979	2.1921		7,857.8993
Total	**5.9785**	**62.5315**	**43.8190**	**0.0809**	**8.9385**	**2.9196**	**11.8581**	**3.6251**	**2.7246**	**6.3497**		**7,803.0979**	**7,803.0979**	**2.1921**		**7,857.8993**

3.2 Rough Grade - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4098	13.3571	2.4326	0.0336	0.7722	0.0585	0.8307	0.2223	0.0560	0.2783		3,518.3214	3,518.3214	0.1604		3,522.3305
Worker	0.1087	0.0598	0.8216	2.3000e-003	0.2300	1.4600e-003	0.2315	0.0610	1.3500e-003	0.0624		229.2255	229.2255	5.6300e-003		229.3662
Total	**0.5186**	**13.4169**	**3.2543**	**0.0359**	**1.0022**	**0.0600**	**1.0622**	**0.2833**	**0.0574**	**0.3407**		**3,747.5469**	**3,747.5469**	**0.1660**		**3,751.6968**

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					4.0223	0.0000	4.0223	1.6313	0.0000	1.6313			0.0000			0.0000
Off-Road	5.9785	62.5315	43.8190	0.0809		2.9196	2.9196		2.7246	2.7246	0.0000	7,803.0979	7,803.0979	2.1921		7,857.8993
Total	**5.9785**	**62.5315**	**43.8190**	**0.0809**	**4.0223**	**2.9196**	**6.9419**	**1.6313**	**2.7246**	**4.3559**	**0.0000**	**7,803.0979**	**7,803.0979**	**2.1921**		**7,857.8993**

3.2 Rough Grade - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4098	13.3571	2.4326	0.0336	0.7722	0.0585	0.8307	0.2223	0.0560	0.2783		3,518.3214	3,518.3214	0.1604		3,522.3305
Worker	0.1087	0.0598	0.8216	2.3000e-003	0.2300	1.4600e-003	0.2315	0.0610	1.3500e-003	0.0624		229.2255	229.2255	5.6300e-003		229.3662
Total	**0.5186**	**13.4169**	**3.2543**	**0.0359**	**1.0022**	**0.0600**	**1.0622**	**0.2833**	**0.0574**	**0.3407**		**3,747.5469**	**3,747.5469**	**0.1660**		**3,751.6968**

3.3 Base for Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3726	15.0626	8.9510	0.0204		0.6908	0.6908		0.6355	0.6355		1,972.5192	1,972.5192	0.6380		1,988.4680
Paving	4.8680					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**6.2406**	**15.0626**	**8.9510**	**0.0204**		**0.6908**	**0.6908**		**0.6355**	**0.6355**		**1,972.5192**	**1,972.5192**	**0.6380**		**1,988.4680**

3.3 Base for Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4458	14.5287	2.6460	0.0366	0.8399	0.0637	0.9036	0.2418	0.0609	0.3027		3,826.9461	3,826.9461	0.1744		3,831.3069
Worker	0.0505	0.0278	0.3815	1.0700e-003	0.1068	6.8000e-004	0.1075	0.0283	6.3000e-004	0.0290		106.4261	106.4261	2.6100e-003		106.4915
Total	**0.4963**	**14.5565**	**3.0275**	**0.0376**	**0.9467**	**0.0644**	**1.0110**	**0.2701**	**0.0615**	**0.3317**		**3,933.3722**	**3,933.3722**	**0.1770**		**3,937.7984**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3726	15.0626	8.9510	0.0204		0.6908	0.6908		0.6355	0.6355	0.0000	1,972.5192	1,972.5192	0.6380		1,988.4680
Paving	4.8680					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**6.2406**	**15.0626**	**8.9510**	**0.0204**		**0.6908**	**0.6908**		**0.6355**	**0.6355**	**0.0000**	**1,972.5192**	**1,972.5192**	**0.6380**		**1,988.4680**

3.3 Base for Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4458	14.5287	2.6460	0.0366	0.8399	0.0637	0.9036	0.2418	0.0609	0.3027		3,826.9461	3,826.9461	0.1744		3,831.3069
Worker	0.0505	0.0278	0.3815	1.0700e-003	0.1068	6.8000e-004	0.1075	0.0283	6.3000e-004	0.0290		106.4261	106.4261	2.6100e-003		106.4915
Total	**0.4963**	**14.5565**	**3.0275**	**0.0376**	**0.9467**	**0.0644**	**1.0110**	**0.2701**	**0.0615**	**0.3317**		**3,933.3722**	**3,933.3722**	**0.1770**		**3,937.7984**

3.4 Paving - Asphalt - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2060	12.7943	9.8500	0.0182		0.6515	0.6515		0.5994	0.5994		1,761.8874	1,761.8874	0.5698		1,776.1332
Paving	4.8680					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**6.0739**	**12.7943**	**9.8500**	**0.0182**		**0.6515**	**0.6515**		**0.5994**	**0.5994**		**1,761.8874**	**1,761.8874**	**0.5698**		**1,776.1332**

3.4 Paving - Asphalt - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2013	6.5614	1.1950	0.0165	0.3793	0.0288	0.4081	0.1092	0.0275	0.1367		1,728.2982	1,728.2982	0.0788		1,730.2676
Worker	0.0505	0.0278	0.3815	1.0700e-003	0.1068	6.8000e-004	0.1075	0.0283	6.3000e-004	0.0290		106.4261	106.4261	2.6100e-003		106.4915
Total	**0.2518**	**6.5891**	**1.5765**	**0.0176**	**0.4861**	**0.0294**	**0.5155**	**0.1375**	**0.0281**	**0.1657**		**1,834.7244**	**1,834.7244**	**0.0814**		**1,836.7591**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2060	12.7943	9.8500	0.0182		0.6515	0.6515		0.5994	0.5994	0.0000	1,761.8874	1,761.8874	0.5698		1,776.1332
Paving	4.8680					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**6.0739**	**12.7943**	**9.8500**	**0.0182**		**0.6515**	**0.6515**		**0.5994**	**0.5994**	**0.0000**	**1,761.8874**	**1,761.8874**	**0.5698**		**1,776.1332**

3.4 Paving - Asphalt - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2013	6.5614	1.1950	0.0165	0.3793	0.0288	0.4081	0.1092	0.0275	0.1367		1,728.2982	1,728.2982	0.0788		1,730.2676
Worker	0.0505	0.0278	0.3815	1.0700e-003	0.1068	6.8000e-004	0.1075	0.0283	6.3000e-004	0.0290		106.4261	106.4261	2.6100e-003		106.4915
Total	**0.2518**	**6.5891**	**1.5765**	**0.0176**	**0.4861**	**0.0294**	**0.5155**	**0.1375**	**0.0281**	**0.1657**		**1,834.7244**	**1,834.7244**	**0.0814**		**1,836.7591**

3.5 Concrete Foundations/Slab on Grade - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5371	16.3642	16.4973	0.0250		0.8162	0.8162		0.7509	0.7509		2,419.1062	2,419.1062	0.7824		2,438.6659
Paving	2.4340					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.9711**	**16.3642**	**16.4973**	**0.0250**		**0.8162**	**0.8162**		**0.7509**	**0.7509**		**2,419.1062**	**2,419.1062**	**0.7824**		**2,438.6659**

3.5 Concrete Foundations/Slab on Grade - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2157	7.0300	1.2803	0.0177	0.4064	0.0308	0.4372	0.1170	0.0295	0.1465		1,851.7481	1,851.7481	0.0844		1,853.8582
Worker	0.0505	0.0278	0.3815	1.0700e-003	0.1068	6.8000e-004	0.1075	0.0283	6.3000e-004	0.0290		106.4261	106.4261	2.6100e-003		106.4915
Total	**0.2662**	**7.0578**	**1.6618**	**0.0188**	**0.5132**	**0.0315**	**0.5447**	**0.1453**	**0.0301**	**0.1754**		**1,958.1742**	**1,958.1742**	**0.0870**		**1,960.3496**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5371	16.3642	16.4973	0.0250		0.8162	0.8162		0.7509	0.7509	0.0000	2,419.1062	2,419.1062	0.7824		2,438.6659
Paving	2.4340					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.9711**	**16.3642**	**16.4973**	**0.0250**		**0.8162**	**0.8162**		**0.7509**	**0.7509**	**0.0000**	**2,419.1062**	**2,419.1062**	**0.7824**		**2,438.6659**

3.5 Concrete Foundations/Slab on Grade - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2157	7.0300	1.2803	0.0177	0.4064	0.0308	0.4372	0.1170	0.0295	0.1465		1,851.7481	1,851.7481	0.0844		1,853.8582
Worker	0.0505	0.0278	0.3815	1.0700e-003	0.1068	6.8000e-004	0.1075	0.0283	6.3000e-004	0.0290		106.4261	106.4261	2.6100e-003		106.4915
Total	**0.2662**	**7.0578**	**1.6618**	**0.0188**	**0.5132**	**0.0315**	**0.5447**	**0.1453**	**0.0301**	**0.1754**		**1,958.1742**	**1,958.1742**	**0.0870**		**1,960.3496**

3.6 Metal Building Erection - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9013	32.5351	41.3343	0.0621		1.5153	1.5153		1.3941	1.3941		6,008.4317	6,008.4317	1.9433		6,057.0129
Total	**2.9013**	**32.5351**	**41.3343**	**0.0621**		**1.5153**	**1.5153**		**1.3941**	**1.3941**		**6,008.4317**	**6,008.4317**	**1.9433**		**6,057.0129**

3.6 Metal Building Erection - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0719	2.3434	0.4268	5.9000e-003	0.1355	0.0103	0.1457	0.0390	9.8200e-003	0.0488		617.2494	617.2494	0.0281		617.9527
Worker	0.8699	0.4783	6.5731	0.0184	1.8401	0.0117	1.8518	0.4881	0.0108	0.4989		1,833.8038	1,833.8038	0.0450		1,834.9298
Total	**0.9418**	**2.8216**	**6.9999**	**0.0243**	**1.9756**	**0.0220**	**1.9975**	**0.5271**	**0.0206**	**0.5477**		**2,451.0532**	**2,451.0532**	**0.0732**		**2,452.8825**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9013	32.5351	41.3343	0.0621		1.5153	1.5153		1.3941	1.3941	0.0000	6,008.4317	6,008.4317	1.9433		6,057.0129
Total	**2.9013**	**32.5351**	**41.3343**	**0.0621**		**1.5153**	**1.5153**		**1.3941**	**1.3941**	**0.0000**	**6,008.4317**	**6,008.4317**	**1.9433**		**6,057.0129**

3.6 Metal Building Erection - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0719	2.3434	0.4268	5.9000e-003	0.1355	0.0103	0.1457	0.0390	9.8200e-003	0.0488		617.2494	617.2494	0.0281		617.9527
Worker	0.8699	0.4783	6.5731	0.0184	1.8401	0.0117	1.8518	0.4881	0.0108	0.4989		1,833.8038	1,833.8038	0.0450		1,834.9298
Total	**0.9418**	**2.8216**	**6.9999**	**0.0243**	**1.9756**	**0.0220**	**1.9975**	**0.5271**	**0.0206**	**0.5477**		**2,451.0532**	**2,451.0532**	**0.0732**		**2,452.8825**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	79.5199					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3229	2.2451	2.4419	3.9600e-003		0.1479	0.1479		0.1479	0.1479		375.2641	375.2641	0.0291		375.9904
Total	**79.8428**	**2.2451**	**2.4419**	**3.9600e-003**		**0.1479**	**0.1479**		**0.1479**	**0.1479**		**375.2641**	**375.2641**	**0.0291**		**375.9904**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1748	0.0961	1.3205	3.7000e-003	0.3697	2.3500e-003	0.3720	0.0981	2.1600e-003	0.1002		368.3981	368.3981	9.0500e-003		368.6243
Total	**0.1748**	**0.0961**	**1.3205**	**3.7000e-003**	**0.3697**	**2.3500e-003**	**0.3720**	**0.0981**	**2.1600e-003**	**0.1002**		**368.3981**	**368.3981**	**9.0500e-003**		**368.6243**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	79.5199					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3229	2.2451	2.4419	3.9600e-003		0.1479	0.1479		0.1479	0.1479	0.0000	375.2641	375.2641	0.0291		375.9904
Total	**79.8428**	**2.2451**	**2.4419**	**3.9600e-003**		**0.1479**	**0.1479**		**0.1479**	**0.1479**	**0.0000**	**375.2641**	**375.2641**	**0.0291**		**375.9904**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1748	0.0961	1.3205	3.7000e-003	0.3697	2.3500e-003	0.3720	0.0981	2.1600e-003	0.1002		368.3981	368.3981	9.0500e-003		368.6243
Total	**0.1748**	**0.0961**	**1.3205**	**3.7000e-003**	**0.3697**	**2.3500e-003**	**0.3720**	**0.0981**	**2.1600e-003**	**0.1002**		**368.3981**	**368.3981**	**9.0500e-003**		**368.6243**

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	5.2126	28.6146	49.3592	0.1708	11.7646	0.1754	11.9400	3.1527	0.1655	3.3182		17,298.6012	17,298.6012	0.7195		17,316.5896
Unmitigated	5.2126	28.6146	49.3592	0.1708	11.7646	0.1754	11.9400	3.1527	0.1655	3.3182		17,298.6012	17,298.6012	0.7195		17,316.5896

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Discount Club	2,356.00	2,433.50	2433.50	5,386,385	5,386,385
Gasoline/Service Station	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	2,356.00	2,433.50	2,433.50	5,386,385	5,386,385

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
Discount Club	7.80	16.00	0.00	19.90	80.10	0.00	35.2	31.5	33.3
Gasoline/Service Station	9.50	7.30	7.30	2.00	79.00	19.00	14	27	59
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Discount Club	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333
Gasoline/Service Station	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333
Other Asphalt Surfaces	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333
Parking Lot	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures 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	0.0559	0.5083	0.4270	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.9742	609.9742	0.0117	0.0112	613.5990
NaturalGas Unmitigated	0.0559	0.5083	0.4270	3.0500e-003		0.0386	0.0386		0.0386	0.0386		609.9742	609.9742	0.0117	0.0112	613.5990

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					
Discount Club	4968.49	0.0536	0.4871	0.4092	2.9200e-003		0.0370	0.0370		0.0370	0.0370		584.5286	584.5286	0.0112	0.0107	588.0022
Gasoline/Service Station	216.288	2.3300e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4456	25.4456	4.9000e-004	4.7000e-004	25.5968
Other Asphalt Surfaces	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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0559**	**0.5083**	**0.4270**	**3.0500e-003**		**0.0386**	**0.0386**		**0.0386**	**0.0386**		**609.9742**	**609.9742**	**0.0117**	**0.0112**	**613.5990**

5.2 Energy by Land Use - NaturalGas

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					
Discount Club	4.96849	0.0536	0.4871	0.4092	2.9200e-003		0.0370	0.0370		0.0370	0.0370		584.5286	584.5286	0.0112	0.0107	588.0022
Gasoline/Service Station	0.216288	2.3300e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4456	25.4456	4.9000e-004	4.7000e-004	25.5968
Other Asphalt Surfaces	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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0559**	**0.5083**	**0.4270**	**3.0500e-003**		**0.0386**	**0.0386**		**0.0386**	**0.0386**		**609.9742**	**609.9742**	**0.0117**	**0.0112**	**613.5990**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.9983	9.2000e-004	0.0992	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2113	0.2113	5.7000e-004		0.2254
Unmitigated	3.9983	9.2000e-004	0.0992	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2113	0.2113	5.7000e-004		0.2254

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	0.4357					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.5532					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.3300e-003	9.2000e-004	0.0992	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2113	0.2113	5.7000e-004		0.2254
Total	**3.9982**	**9.2000e-004**	**0.0992**	**1.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.6000e-004**	**3.6000e-004**		**0.2113**	**0.2113**	**5.7000e-004**		**0.2254**

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	0.4357					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.5532					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.3300e-003	9.2000e-004	0.0992	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2113	0.2113	5.7000e-004		0.2254
Total	**3.9982**	**9.2000e-004**	**0.0992**	**1.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.6000e-004**	**3.6000e-004**		**0.2113**	**0.2113**	**5.7000e-004**		**0.2254**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 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

Loomis Costco - Recirculated DEIR

Placer-Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.29	Acre	2.29	99,752.40	0
Parking Lot	778.00	Space	7.00	311,200.00	0
Discount Club	155.00	1000sqft	10.21	155,000.00	0
Gasoline/Service Station	30.00	Pump	0.10	4,235.25	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land use based on project description and overal site disturbance. Other Asphalt Surfaces for Condition of Approval roadway project and Transportation mitigation roadway improvements applicable to Alternative Option A.

Construction Phase - Construction phases and duration based on project-specific construction schedule.

Off-road Equipment - Construction equipment based on project-specific equipment list.

Trips and VMT - Worker trips based on CalEEMod defaults.
Vendor trips based on project-specific projections.
Balanced site.

Grading -

Vehicle Trips - Operational trip rates adjusted to reflect daily new VMT to roadways per Traffic Impact Analysis.

Area Coating -

Construction Off-road Equipment Mitigation - Watering of disturbed areas on site for dust suppression mitigation.

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Parking	24657	24655
tblConstructionPhase	NumDays	300.00	20.00
tblConstructionPhase	NumDays	30.00	50.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	20.00	10.00
tblLandUse	LotAcreage	3.56	10.21
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	3.00
tblTripsAndVMT	VendorTripNumber	0.00	114.00
tblTripsAndVMT	VendorTripNumber	0.00	124.00
tblTripsAndVMT	VendorTripNumber	0.00	56.00
tblTripsAndVMT	VendorTripNumber	0.00	60.00
tblTripsAndVMT	VendorTripNumber	93.00	20.00
tblTripsAndVMT	WorkerTripNumber	38.00	28.00
tblVehicleTrips	CC_TL	7.30	16.00
tblVehicleTrips	CC_TTP	64.30	80.10
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	7.80
tblVehicleTrips	CW_TTP	16.70	19.90
tblVehicleTrips	DV_TP	40.00	31.50
tblVehicleTrips	PB_TP	15.00	33.30
tblVehicleTrips	PR_TP	45.00	35.20
tblVehicleTrips	ST_TR	53.75	15.70
tblVehicleTrips	ST_TR	168.56	0.00
tblVehicleTrips	SU_TR	33.67	15.70
tblVehicleTrips	SU_TR	168.56	0.00
tblVehicleTrips	WD_TR	41.80	15.20
tblVehicleTrips	WD_TR	168.56	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	1.0537	2.5231	1.8433	4.2700e-003	0.2759	0.0992	0.3751	0.1052	0.0924	0.1976	0.0000	383.0769	383.0769	0.0796	0.0000	385.0674
Maximum	**1.0537**	**2.5231**	**1.8433**	**4.2700e-003**	**0.2759**	**0.0992**	**0.3751**	**0.1052**	**0.0924**	**0.1976**	**0.0000**	**383.0769**	**383.0769**	**0.0796**	**0.0000**	**385.0674**

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					
2020	1.0537	2.5231	1.8433	4.2700e-003	0.1530	0.0992	0.2522	0.0553	0.0924	0.1478	0.0000	383.0766	383.0766	0.0796	0.0000	385.0671
Maximum	**1.0537**	**2.5231**	**1.8433**	**4.2700e-003**	**0.1530**	**0.0992**	**0.2522**	**0.0553**	**0.0924**	**0.1478**	**0.0000**	**383.0766**	**383.0766**	**0.0796**	**0.0000**	**385.0671**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**44.54**	**0.00**	**32.76**	**47.40**	**0.00**	**25.22**	**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)
1	1-15-2020	4-14-2020	2.2903	2.2903
2	4-15-2020	7-14-2020	1.2847	1.2847
		Highest	2.2903	2.2903

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	0.7288	8.0000e-005	8.9300e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0173	0.0173	5.0000e-005	0.0000	0.0184
Energy	0.0102	0.0928	0.0779	5.6000e-004		7.0500e-003	7.0500e-003		7.0500e-003	7.0500e-003	0.0000	674.7114	674.7114	0.0279	7.2200e-003	677.5596
Mobile	0.7685	5.2375	8.3209	0.0285	2.0022	0.0314	2.0336	0.5386	0.0296	0.5682	0.0000	2,620.3947	2,620.3947	0.1170	0.0000	2,623.3204
Waste						0.0000	0.0000		0.0000	0.0000	138.5982	0.0000	138.5982	8.1909	0.0000	343.3711
Water						0.0000	0.0000		0.0000	0.0000	3.7689	26.1136	29.8825	0.3883	9.3800e-003	42.3862
Total	**1.5075**	**5.3304**	**8.4077**	**0.0291**	**2.0022**	**0.0385**	**2.0407**	**0.5386**	**0.0367**	**0.5753**	**142.3671**	**3,321.2370**	**3,463.6040**	**8.7242**	**0.0166**	**3,686.6556**

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	0.7288	8.0000e-005	8.9300e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0173	0.0173	5.0000e-005	0.0000	0.0184
Energy	0.0102	0.0928	0.0779	5.6000e-004		7.0500e-003	7.0500e-003		7.0500e-003	7.0500e-003	0.0000	674.7114	674.7114	0.0279	7.2200e-003	677.5596
Mobile	0.7685	5.2375	8.3209	0.0285	2.0022	0.0314	2.0336	0.5386	0.0296	0.5682	0.0000	2,620.3947	2,620.3947	0.1170	0.0000	2,623.3204
Waste						0.0000	0.0000		0.0000	0.0000	138.5982	0.0000	138.5982	8.1909	0.0000	343.3711
Water						0.0000	0.0000		0.0000	0.0000	3.7689	26.1136	29.8825	0.3883	9.3800e-003	42.3862
Total	**1.5075**	**5.3304**	**8.4077**	**0.0291**	**2.0022**	**0.0385**	**2.0407**	**0.5386**	**0.0367**	**0.5753**	**142.3671**	**3,321.2370**	**3,463.6040**	**8.7242**	**0.0166**	**3,686.6556**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**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	Rough Grade	Grading	1/15/2020	3/24/2020	5	50	Prep for construction, including removal of old slap and abandoned utilities, grading, and base for paving
2	Base for Paving	Paving	3/25/2020	3/31/2020	5	5	
3	Paving - Asphalt	Paving	4/1/2020	4/7/2020	5	5	Asphalt
4	Concrete Foundations/Slab on Grade	Paving	4/8/2020	4/21/2020	5	10	Delivery and pour of concrete foundations/slab
5	Metal Building Erection	Building Construction	4/22/2020	5/19/2020	5	20	Erection of pre-fabricated metal building
6	Architectural Coating	Architectural Coating	5/20/2020	6/16/2020	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 9.29

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 238,853; Non-Residential Outdoor: 79,618; Striped Parking Area: 24,657 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Rough Grade	Crushing/Proc. Equipment	2	8.00	85	0.78
Rough Grade	Excavators	1	8.00	158	0.38
Rough Grade	Graders	1	8.00	187	0.41
Rough Grade	Rubber Tired Dozers	1	8.00	247	0.40
Rough Grade	Scrapers	6	3.00	367	0.48
Rough Grade	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Base for Paving	Rollers	3	8.00	80	0.38
Base for Paving	Rubber Tired Loaders	2	8.00	203	0.36
Paving - Asphalt	Paving Equipment	1	8.00	132	0.36
Paving - Asphalt	Rollers	3	8.00	80	0.38
Paving - Asphalt	Rubber Tired Loaders	1	8.00	203	0.36
Concrete Foundations/Slab on Grade	Off-Highway Tractors	4	8.00	124	0.44
Concrete Foundations/Slab on Grade	Other Construction Equipment	1	8.00	172	0.42
Metal Building Erection	Aerial Lifts	13	8.00	63	0.31
Metal Building Erection	Excavators	2	8.00	158	0.38
Metal Building Erection	Forklifts	5	8.00	89	0.20
Metal Building Erection	Off-Highway Tractors	4	8.00	124	0.44
Metal Building Erection	Rough Terrain Forklifts	1	8.00	100	0.40
Architectural Coating	Air Compressors	1	8.00	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
Rough Grade	15	28.00	114.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Base for Paving	5	13.00	124.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Asphalt	5	13.00	56.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Foundations/Slab on	5	13.00	60.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Metal Building Erection	25	224.00	20.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	45.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Rough Grade - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2235	0.0000	0.2235	0.0906	0.0000	0.0906	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1495	1.5633	1.0955	2.0200e-003		0.0730	0.0730		0.0681	0.0681	0.0000	176.9713	176.9713	0.0497	0.0000	178.2142
Total	**0.1495**	**1.5633**	**1.0955**	**2.0200e-003**	**0.2235**	**0.0730**	**0.2965**	**0.0906**	**0.0681**	**0.1588**	**0.0000**	**176.9713**	**176.9713**	**0.0497**	**0.0000**	**178.2142**

3.2 Rough Grade - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0105	0.3390	0.0669	8.3000e-004	0.0186	1.4800e-003	0.0201	5.3900e-003	1.4200e-003	6.8000e-003	0.0000	78.6699	78.6699	3.8500e-003	0.0000	78.7662
Worker	2.4300e-003	1.7000e-003	0.0182	5.0000e-005	5.5000e-003	4.0000e-005	5.5300e-003	1.4600e-003	3.0000e-005	1.5000e-003	0.0000	4.7445	4.7445	1.2000e-004	0.0000	4.7475
Total	**0.0129**	**0.3407**	**0.0851**	**8.8000e-004**	**0.0241**	**1.5200e-003**	**0.0256**	**6.8500e-003**	**1.4500e-003**	**8.3000e-003**	**0.0000**	**83.4144**	**83.4144**	**3.9700e-003**	**0.0000**	**83.5136**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1006	0.0000	0.1006	0.0408	0.0000	0.0408	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1495	1.5633	1.0955	2.0200e-003		0.0730	0.0730		0.0681	0.0681	0.0000	176.9711	176.9711	0.0497	0.0000	178.2140
Total	**0.1495**	**1.5633**	**1.0955**	**2.0200e-003**	**0.1006**	**0.0730**	**0.1736**	**0.0408**	**0.0681**	**0.1089**	**0.0000**	**176.9711**	**176.9711**	**0.0497**	**0.0000**	**178.2140**

3.2 Rough Grade - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0105	0.3390	0.0669	8.3000e-004	0.0186	1.4800e-003	0.0201	5.3900e-003	1.4200e-003	6.8000e-003	0.0000	78.6699	78.6699	3.8500e-003	0.0000	78.7662
Worker	2.4300e-003	1.7000e-003	0.0182	5.0000e-005	5.5000e-003	4.0000e-005	5.5300e-003	1.4600e-003	3.0000e-005	1.5000e-003	0.0000	4.7445	4.7445	1.2000e-004	0.0000	4.7475
Total	**0.0129**	**0.3407**	**0.0851**	**8.8000e-004**	**0.0241**	**1.5200e-003**	**0.0256**	**6.8500e-003**	**1.4500e-003**	**8.3000e-003**	**0.0000**	**83.4144**	**83.4144**	**3.9700e-003**	**0.0000**	**83.5136**

3.3 Base for Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4300e-003	0.0377	0.0224	5.0000e-005		1.7300e-003	1.7300e-003		1.5900e-003	1.5900e-003	0.0000	4.4736	4.4736	1.4500e-003	0.0000	4.5098
Paving	0.0122					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0156**	**0.0377**	**0.0224**	**5.0000e-005**		**1.7300e-003**	**1.7300e-003**		**1.5900e-003**	**1.5900e-003**	**0.0000**	**4.4736**	**4.4736**	**1.4500e-003**	**0.0000**	**4.5098**

3.3 Base for Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1400e-003	0.0369	7.2800e-003	9.0000e-005	2.0200e-003	1.6000e-004	2.1800e-003	5.9000e-004	1.5000e-004	7.4000e-004	0.0000	8.5571	8.5571	4.2000e-004	0.0000	8.5676
Worker	1.1000e-004	8.0000e-005	8.4000e-004	0.0000	2.6000e-004	0.0000	2.6000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2203	0.2203	1.0000e-005	0.0000	0.2204
Total	**1.2500e-003**	**0.0370**	**8.1200e-003**	**9.0000e-005**	**2.2800e-003**	**1.6000e-004**	**2.4400e-003**	**6.6000e-004**	**1.5000e-004**	**8.1000e-004**	**0.0000**	**8.7774**	**8.7774**	**4.3000e-004**	**0.0000**	**8.7880**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4300e-003	0.0377	0.0224	5.0000e-005		1.7300e-003	1.7300e-003		1.5900e-003	1.5900e-003	0.0000	4.4736	4.4736	1.4500e-003	0.0000	4.5098
Paving	0.0122					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0156**	**0.0377**	**0.0224**	**5.0000e-005**		**1.7300e-003**	**1.7300e-003**		**1.5900e-003**	**1.5900e-003**	**0.0000**	**4.4736**	**4.4736**	**1.4500e-003**	**0.0000**	**4.5098**

3.3 Base for Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1400e-003	0.0369	7.2800e-003	9.0000e-005	2.0200e-003	1.6000e-004	2.1800e-003	5.9000e-004	1.5000e-004	7.4000e-004	0.0000	8.5571	8.5571	4.2000e-004	0.0000	8.5676
Worker	1.1000e-004	8.0000e-005	8.4000e-004	0.0000	2.6000e-004	0.0000	2.6000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2203	0.2203	1.0000e-005	0.0000	0.2204
Total	**1.2500e-003**	**0.0370**	**8.1200e-003**	**9.0000e-005**	**2.2800e-003**	**1.6000e-004**	**2.4400e-003**	**6.6000e-004**	**1.5000e-004**	**8.1000e-004**	**0.0000**	**8.7774**	**8.7774**	**4.3000e-004**	**0.0000**	**8.7880**

3.4 Paving - Asphalt - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.0100e-003	0.0320	0.0246	5.0000e-005		1.6300e-003	1.6300e-003		1.5000e-003	1.5000e-003	0.0000	3.9959	3.9959	1.2900e-003	0.0000	4.0282
Paving	0.0122					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0152**	**0.0320**	**0.0246**	**5.0000e-005**		**1.6300e-003**	**1.6300e-003**		**1.5000e-003**	**1.5000e-003**	**0.0000**	**3.9959**	**3.9959**	**1.2900e-003**	**0.0000**	**4.0282**

3.4 Paving - Asphalt - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2000e-004	0.0167	3.2900e-003	4.0000e-005	9.1000e-004	7.0000e-005	9.9000e-004	2.6000e-004	7.0000e-005	3.3000e-004	0.0000	3.8645	3.8645	1.9000e-004	0.0000	3.8692
Worker	1.1000e-004	8.0000e-005	8.4000e-004	0.0000	2.6000e-004	0.0000	2.6000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2203	0.2203	1.0000e-005	0.0000	0.2204
Total	**6.3000e-004**	**0.0167**	**4.1300e-003**	**4.0000e-005**	**1.1700e-003**	**7.0000e-005**	**1.2500e-003**	**3.3000e-004**	**7.0000e-005**	**4.0000e-004**	**0.0000**	**4.0848**	**4.0848**	**2.0000e-004**	**0.0000**	**4.0896**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.0100e-003	0.0320	0.0246	5.0000e-005		1.6300e-003	1.6300e-003		1.5000e-003	1.5000e-003	0.0000	3.9959	3.9959	1.2900e-003	0.0000	4.0282
Paving	0.0122					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0152**	**0.0320**	**0.0246**	**5.0000e-005**		**1.6300e-003**	**1.6300e-003**		**1.5000e-003**	**1.5000e-003**	**0.0000**	**3.9959**	**3.9959**	**1.2900e-003**	**0.0000**	**4.0282**

3.4 Paving - Asphalt - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2000e-004	0.0167	3.2900e-003	4.0000e-005	9.1000e-004	7.0000e-005	9.9000e-004	2.6000e-004	7.0000e-005	3.3000e-004	0.0000	3.8645	3.8645	1.9000e-004	0.0000	3.8692
Worker	1.1000e-004	8.0000e-005	8.4000e-004	0.0000	2.6000e-004	0.0000	2.6000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2203	0.2203	1.0000e-005	0.0000	0.2204
Total	**6.3000e-004**	**0.0167**	**4.1300e-003**	**4.0000e-005**	**1.1700e-003**	**7.0000e-005**	**1.2500e-003**	**3.3000e-004**	**7.0000e-005**	**4.0000e-004**	**0.0000**	**4.0848**	**4.0848**	**2.0000e-004**	**0.0000**	**4.0896**

3.5 Concrete Foundations/Slab on Grade - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.6900e-003	0.0818	0.0825	1.2000e-004		4.0800e-003	4.0800e-003		3.7500e-003	3.7500e-003	0.0000	10.9729	10.9729	3.5500e-003	0.0000	11.0616
Paving	0.0122					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0199**	**0.0818**	**0.0825**	**1.2000e-004**		**4.0800e-003**	**4.0800e-003**		**3.7500e-003**	**3.7500e-003**	**0.0000**	**10.9729**	**10.9729**	**3.5500e-003**	**0.0000**	**11.0616**

3.5 Concrete Foundations/Slab on Grade - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-003	0.0357	7.0400e-003	9.0000e-005	1.9600e-003	1.6000e-004	2.1100e-003	5.7000e-004	1.5000e-004	7.2000e-004	0.0000	8.2810	8.2810	4.1000e-004	0.0000	8.2912
Worker	2.3000e-004	1.6000e-004	1.6900e-003	0.0000	5.1000e-004	0.0000	5.1000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4406	0.4406	1.0000e-005	0.0000	0.4408
Total	**1.3300e-003**	**0.0359**	**8.7300e-003**	**9.0000e-005**	**2.4700e-003**	**1.6000e-004**	**2.6200e-003**	**7.1000e-004**	**1.5000e-004**	**8.6000e-004**	**0.0000**	**8.7216**	**8.7216**	**4.2000e-004**	**0.0000**	**8.7320**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.6900e-003	0.0818	0.0825	1.2000e-004		4.0800e-003	4.0800e-003		3.7500e-003	3.7500e-003	0.0000	10.9729	10.9729	3.5500e-003	0.0000	11.0616
Paving	0.0122					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0199**	**0.0818**	**0.0825**	**1.2000e-004**		**4.0800e-003**	**4.0800e-003**		**3.7500e-003**	**3.7500e-003**	**0.0000**	**10.9729**	**10.9729**	**3.5500e-003**	**0.0000**	**11.0616**

3.5 Concrete Foundations/Slab on Grade - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-003	0.0357	7.0400e-003	9.0000e-005	1.9600e-003	1.6000e-004	2.1100e-003	5.7000e-004	1.5000e-004	7.2000e-004	0.0000	8.2810	8.2810	4.1000e-004	0.0000	8.2912
Worker	2.3000e-004	1.6000e-004	1.6900e-003	0.0000	5.1000e-004	0.0000	5.1000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4406	0.4406	1.0000e-005	0.0000	0.4408
Total	**1.3300e-003**	**0.0359**	**8.7300e-003**	**9.0000e-005**	**2.4700e-003**	**1.6000e-004**	**2.6200e-003**	**7.1000e-004**	**1.5000e-004**	**8.6000e-004**	**0.0000**	**8.7216**	**8.7216**	**4.2000e-004**	**0.0000**	**8.7320**

3.6 Metal Building Erection - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0290	0.3254	0.4133	6.2000e-004		0.0152	0.0152		0.0139	0.0139	0.0000	54.5076	54.5076	0.0176	0.0000	54.9483
Total	**0.0290**	**0.3254**	**0.4133**	**6.2000e-004**		**0.0152**	**0.0152**		**0.0139**	**0.0139**	**0.0000**	**54.5076**	**54.5076**	**0.0176**	**0.0000**	**54.9483**

3.6 Metal Building Erection - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.4000e-004	0.0238	4.6900e-003	6.0000e-005	1.3100e-003	1.0000e-004	1.4100e-003	3.8000e-004	1.0000e-004	4.8000e-004	0.0000	5.5207	5.5207	2.7000e-004	0.0000	5.5275
Worker	7.7600e-003	5.4300e-003	0.0582	1.7000e-004	0.0176	1.2000e-004	0.0177	4.6800e-003	1.1000e-004	4.7900e-003	0.0000	15.1825	15.1825	3.7000e-004	0.0000	15.1918
Total	**8.5000e-003**	**0.0292**	**0.0628**	**2.3000e-004**	**0.0189**	**2.2000e-004**	**0.0191**	**5.0600e-003**	**2.1000e-004**	**5.2700e-003**	**0.0000**	**20.7032**	**20.7032**	**6.4000e-004**	**0.0000**	**20.7193**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0290	0.3254	0.4133	6.2000e-004		0.0152	0.0152		0.0139	0.0139	0.0000	54.5075	54.5075	0.0176	0.0000	54.9482
Total	**0.0290**	**0.3254**	**0.4133**	**6.2000e-004**		**0.0152**	**0.0152**		**0.0139**	**0.0139**	**0.0000**	**54.5075**	**54.5075**	**0.0176**	**0.0000**	**54.9482**

3.6 Metal Building Erection - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.4000e-004	0.0238	4.6900e-003	6.0000e-005	1.3100e-003	1.0000e-004	1.4100e-003	3.8000e-004	1.0000e-004	4.8000e-004	0.0000	5.5207	5.5207	2.7000e-004	0.0000	5.5275
Worker	7.7600e-003	5.4300e-003	0.0582	1.7000e-004	0.0176	1.2000e-004	0.0177	4.6800e-003	1.1000e-004	4.7900e-003	0.0000	15.1825	15.1825	3.7000e-004	0.0000	15.1918
Total	**8.5000e-003**	**0.0292**	**0.0628**	**2.3000e-004**	**0.0189**	**2.2000e-004**	**0.0191**	**5.0600e-003**	**2.1000e-004**	**5.2700e-003**	**0.0000**	**20.7032**	**20.7032**	**6.4000e-004**	**0.0000**	**20.7193**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7952					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2300e-003	0.0225	0.0244	4.0000e-005		1.4800e-003	1.4800e-003		1.4800e-003	1.4800e-003	0.0000	3.4043	3.4043	2.6000e-004	0.0000	3.4109
Total	**0.7984**	**0.0225**	**0.0244**	**4.0000e-005**		**1.4800e-003**	**1.4800e-003**		**1.4800e-003**	**1.4800e-003**	**0.0000**	**3.4043**	**3.4043**	**2.6000e-004**	**0.0000**	**3.4109**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5600e-003	1.0900e-003	0.0117	3.0000e-005	3.5300e-003	2.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	3.0501	3.0501	8.0000e-005	0.0000	3.0519
Total	**1.5600e-003**	**1.0900e-003**	**0.0117**	**3.0000e-005**	**3.5300e-003**	**2.0000e-005**	**3.5600e-003**	**9.4000e-004**	**2.0000e-005**	**9.6000e-004**	**0.0000**	**3.0501**	**3.0501**	**8.0000e-005**	**0.0000**	**3.0519**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7952					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2300e-003	0.0225	0.0244	4.0000e-005		1.4800e-003	1.4800e-003		1.4800e-003	1.4800e-003	0.0000	3.4043	3.4043	2.6000e-004	0.0000	3.4109
Total	**0.7984**	**0.0225**	**0.0244**	**4.0000e-005**		**1.4800e-003**	**1.4800e-003**		**1.4800e-003**	**1.4800e-003**	**0.0000**	**3.4043**	**3.4043**	**2.6000e-004**	**0.0000**	**3.4109**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5600e-003	1.0900e-003	0.0117	3.0000e-005	3.5300e-003	2.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	3.0501	3.0501	8.0000e-005	0.0000	3.0519
Total	**1.5600e-003**	**1.0900e-003**	**0.0117**	**3.0000e-005**	**3.5300e-003**	**2.0000e-005**	**3.5600e-003**	**9.4000e-004**	**2.0000e-005**	**9.6000e-004**	**0.0000**	**3.0501**	**3.0501**	**8.0000e-005**	**0.0000**	**3.0519**

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	0.7685	5.2375	8.3209	0.0285	2.0022	0.0314	2.0336	0.5386	0.0296	0.5682	0.0000	2,620.3947	2,620.3947	0.1170	0.0000	2,623.3204
Unmitigated	0.7685	5.2375	8.3209	0.0285	2.0022	0.0314	2.0336	0.5386	0.0296	0.5682	0.0000	2,620.3947	2,620.3947	0.1170	0.0000	2,623.3204

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Discount Club	2,356.00	2,433.50	2433.50	5,386,385	5,386,385
Gasoline/Service Station	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	2,356.00	2,433.50	2,433.50	5,386,385	5,386,385

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
Discount Club	7.80	16.00	0.00	19.90	80.10	0.00	35.2	31.5	33.3
Gasoline/Service Station	9.50	7.30	7.30	2.00	79.00	19.00	14	27	59
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Discount Club	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333
Gasoline/Service Station	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333
Other Asphalt Surfaces	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333
Parking Lot	0.489257	0.041257	0.220156	0.132626	0.025790	0.006586	0.027831	0.045583	0.001467	0.001229	0.006102	0.000783	0.001333

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures 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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	573.7233	573.7233	0.0259	5.3700e-003	575.9714
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	573.7233	573.7233	0.0259	5.3700e-003	575.9714
NaturalGas Mitigated	0.0102	0.0928	0.0779	5.6000e-004		7.0500e-003	7.0500e-003		7.0500e-003	7.0500e-003	0.0000	100.9881	100.9881	1.9400e-003	1.8500e-003	101.5882
NaturalGas Unmitigated	0.0102	0.0928	0.0779	5.6000e-004		7.0500e-003	7.0500e-003		7.0500e-003	7.0500e-003	0.0000	100.9881	100.9881	1.9400e-003	1.8500e-003	101.5882

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Discount Club	1.8135e+006	9.7800e-003	0.0889	0.0747	5.3000e-004		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	96.7753	96.7753	1.8500e-003	1.7700e-003	97.3504
Gasoline/Service Station	78945.1	4.3000e-004	3.8700e-003	3.2500e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.2128	4.2128	8.0000e-005	8.0000e-005	4.2378
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0102**	**0.0928**	**0.0779**	**5.5000e-004**		**7.0500e-003**	**7.0500e-003**		**7.0500e-003**	**7.0500e-003**	**0.0000**	**100.9881**	**100.9881**	**1.9300e-003**	**1.8500e-003**	**101.5882**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Discount Club	1.8135e+006	9.7800e-003	0.0889	0.0747	5.3000e-004		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	96.7753	96.7753	1.8500e-003	1.7700e-003	97.3504
Gasoline/Service Station	78945.1	4.3000e-004	3.8700e-003	3.2500e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.2128	4.2128	8.0000e-005	8.0000e-005	4.2378
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0102**	**0.0928**	**0.0779**	**5.5000e-004**		**7.0500e-003**	**7.0500e-003**		**7.0500e-003**	**7.0500e-003**	**0.0000**	**100.9881**	**100.9881**	**1.9300e-003**	**1.8500e-003**	**101.5882**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Discount Club	1.82745e+006	531.6262	0.0240	4.9700e-003	533.7092
Gasoline/Service Station	35787.9	10.4111	4.7000e-004	1.0000e-004	10.4519
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	108920	31.6861	1.4300e-003	3.0000e-004	31.8102
Total		**573.7233**	**0.0259**	**5.3700e-003**	**575.9714**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Discount Club	1.82745e+006	531.6262	0.0240	4.9700e-003	533.7092
Gasoline/Service Station	35787.9	10.4111	4.7000e-004	1.0000e-004	10.4519
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	108920	31.6861	1.4300e-003	3.0000e-004	31.8102
Total		**573.7233**	**0.0259**	**5.3700e-003**	**575.9714**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7288	8.0000e-005	8.9300e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0173	0.0173	5.0000e-005	0.0000	0.0184
Unmitigated	0.7288	8.0000e-005	8.9300e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0173	0.0173	5.0000e-005	0.0000	0.0184

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	0.0795					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6485					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.4000e-004	8.0000e-005	8.9300e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0173	0.0173	5.0000e-005	0.0000	0.0184
Total	**0.7288**	**8.0000e-005**	**8.9300e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0173**	**0.0173**	**5.0000e-005**	**0.0000**	**0.0184**

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	0.0795					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6485					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.4000e-004	8.0000e-005	8.9300e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0173	0.0173	5.0000e-005	0.0000	0.0184
Total	**0.7288**	**8.0000e-005**	**8.9300e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0173**	**0.0173**	**5.0000e-005**	**0.0000**	**0.0184**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	29.8825	0.3883	9.3800e-003	42.3862
Unmitigated	29.8825	0.3883	9.3800e-003	42.3862

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Discount Club	11.4812 / 7.03689	28.8802	0.3753	9.0700e-003	40.9645
Gasoline/Service Station	0.398457 / 0.244215	1.0023	0.0130	3.1000e-004	1.4217
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**29.8825**	**0.3883**	**9.3800e-003**	**42.3861**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Discount Club	11.4812 / 7.03689	28.8802	0.3753	9.0700e-003	40.9645
Gasoline/Service Station	0.398457 / 0.244215	1.0023	0.0130	3.1000e-004	1.4217
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**29.8825**	**0.3883**	**9.3800e-003**	**42.3861**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	138.5982	8.1909	0.0000	343.3711
Unmitigated	138.5982	8.1909	0.0000	343.3711

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Discount Club	666.61	135.3158	7.9969	0.0000	335.2392
Gasoline/Service Station	16.17	3.2824	0.1940	0.0000	8.1319
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**138.5982**	**8.1909**	**0.0000**	**343.3711**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Discount Club	666.61	135.3158	7.9969	0.0000	335.2392
Gasoline/Service Station	16.17	3.2824	0.1940	0.0000	8.1319
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**138.5982**	**8.1909**	**0.0000**	**343.3711**

9.0 Operational Offroad

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

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

Loomis Costco No Project/Future Development Scenario

Placer-Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	25.00	1000sqft	0.57	25,000.00	0
Parking Lot	11.28	Acre	11.28	491,356.80	0
High Turnover (Sit Down Restaurant)	10.00	1000sqft	0.23	10,000.00	0
Condo/Townhouse	35.00	Dwelling Unit	3.77	35,000.00	100
Regional Shopping Center	75.00	1000sqft	1.72	75,000.00	0
Other Asphalt Surfaces	0.36	Acre	0.36	15,681.60	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Alternative 1B conceptual no project/future development land use scenario. Other asphalt surfaces used to model off-site improvements project.

Construction Phase - Construction schedule and equipment based on CalEEMod defaults.

Vehicle Trips -

Grading -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	2.19	3.77

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4768	4.5848	3.5643	9.9500e-003	0.6223	0.1754	0.7977	0.2380	0.1641	0.4021	0.0000	899.6849	899.6849	0.1159	0.0000	902.5835
2021	1.0176	1.3055	1.1782	3.3600e-003	0.1199	0.0468	0.1666	0.0325	0.0439	0.0764	0.0000	304.3304	304.3304	0.0355	0.0000	305.2187
Maximum	**1.0176**	**4.5848**	**3.5643**	**9.9500e-003**	**0.6223**	**0.1754**	**0.7977**	**0.2380**	**0.1641**	**0.4021**	**0.0000**	**899.6849**	**899.6849**	**0.1159**	**0.0000**	**902.5835**

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					
2020	0.4768	4.5848	3.5643	9.9500e-003	0.6223	0.1754	0.7977	0.2380	0.1641	0.4021	0.0000	899.6845	899.6845	0.1159	0.0000	902.5830
2021	1.0176	1.3055	1.1782	3.3600e-003	0.1199	0.0468	0.1666	0.0325	0.0439	0.0764	0.0000	304.3302	304.3302	0.0355	0.0000	305.2186
Maximum	**1.0176**	**4.5848**	**3.5643**	**9.9500e-003**	**0.6223**	**0.1754**	**0.7977**	**0.2380**	**0.1641**	**0.4021**	**0.0000**	**899.6845**	**899.6845**	**0.1159**	**0.0000**	**902.5830**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	1.5073	1.5073
2	4-1-2020	6-30-2020	1.1679	1.1679
3	7-1-2020	9-30-2020	1.1808	1.1808
4	10-1-2020	12-31-2020	1.1897	1.1897
5	1-1-2021	3-31-2021	1.0595	1.0595
6	4-1-2021	6-30-2021	1.2750	1.2750
		Highest	1.5073	1.5073

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	3.5169	0.0582	3.7470	6.3300e-003		0.4901	0.4901		0.4901	0.4901	46.4831	19.9210	66.4041	0.0433	3.6600e-003	68.5765
Energy	0.0167	0.1500	0.1122	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	689.5439	689.5439	0.0269	7.9400e-003	692.5808
Mobile	1.7043	10.1403	16.7025	0.0460	2.9820	0.0644	3.0464	0.8020	0.0610	0.8630	0.0000	4,219.5668	4,219.5668	0.2346	0.0000	4,225.4310
Waste						0.0000	0.0000		0.0000	0.0000	49.0629	0.0000	49.0629	2.8995	0.0000	121.5513
Water						0.0000	0.0000		0.0000	0.0000	5.0653	33.4516	38.5169	0.5218	0.0126	55.3150
Total	**5.2379**	**10.3485**	**20.5617**	**0.0532**	**2.9820**	**0.5661**	**3.5481**	**0.8020**	**0.5627**	**1.3647**	**100.6113**	**4,962.4832**	**5,063.0945**	**3.7261**	**0.0242**	**5,163.4547**

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	3.5169	0.0582	3.7470	6.3300e-003		0.4901	0.4901		0.4901	0.4901	46.4831	19.9210	66.4041	0.0433	3.6600e-003	68.5765
Energy	0.0167	0.1500	0.1122	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	689.5439	689.5439	0.0269	7.9400e-003	692.5808
Mobile	1.7043	10.1403	16.7025	0.0460	2.9820	0.0644	3.0464	0.8020	0.0610	0.8630	0.0000	4,219.5668	4,219.5668	0.2346	0.0000	4,225.4310
Waste						0.0000	0.0000		0.0000	0.0000	49.0629	0.0000	49.0629	2.8995	0.0000	121.5513
Water						0.0000	0.0000		0.0000	0.0000	5.0653	33.4516	38.5169	0.5218	0.0126	55.3150
Total	**5.2379**	**10.3485**	**20.5617**	**0.0532**	**2.9820**	**0.5661**	**3.5481**	**0.8020**	**0.5627**	**1.3647**	**100.6113**	**4,962.4832**	**5,063.0945**	**3.7261**	**0.0242**	**5,163.4547**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**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

Loomis Costco No Project/Future Development Scenario - Placer-Sacramento County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	1/14/2020	5	10	
2	Grading	Grading	1/15/2020	2/25/2020	5	30	
3	Building Construction	Building Construction	2/26/2020	4/20/2021	5	300	
4	Paving	Paving	4/21/2021	5/18/2021	5	20	
5	Architectural Coating	Architectural Coating	5/19/2021	6/15/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 55

Acres of Paving: 11.64

Residential Indoor: 91,125; Residential Outdoor: 30,375; Non-Residential Indoor: 165,000; Non-Residential Outdoor: 55,000; Striped Parking Area: 30,710 (Architectural Coating – sqft)

OffRoad Equipment

Loomis Costco No Project/Future Development Scenario - Placer-Sacramento County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	284.00	107.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	57.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.1987**	**0.0110**	**0.2097**	**0.1092**	**0.0101**	**0.1194**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	2.2000e-004	2.3400e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6100	0.6100	2.0000e-005	0.0000	0.6104
Total	**3.1000e-004**	**2.2000e-004**	**2.3400e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6100**	**0.6100**	**2.0000e-005**	**0.0000**	**0.6104**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.1987**	**0.0110**	**0.2097**	**0.1092**	**0.0101**	**0.1194**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	2.2000e-004	2.3400e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6100	0.6100	2.0000e-005	0.0000	0.6104
Total	**3.1000e-004**	**2.2000e-004**	**2.3400e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6100**	**0.6100**	**2.0000e-005**	**0.0000**	**0.6104**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0954	0.0000	0.0954	0.0396	0.0000	0.0396	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0668	0.7530	0.4794	9.3000e-004		0.0326	0.0326		0.0300	0.0300	0.0000	81.7264	81.7264	0.0264	0.0000	82.3872
Total	**0.0668**	**0.7530**	**0.4794**	**9.3000e-004**	**0.0954**	**0.0326**	**0.1280**	**0.0396**	**0.0300**	**0.0696**	**0.0000**	**81.7264**	**81.7264**	**0.0264**	**0.0000**	**82.3872**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0400e-003	7.3000e-004	7.7900e-003	2.0000e-005	2.3600e-003	2.0000e-005	2.3700e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	2.0334	2.0334	5.0000e-005	0.0000	2.0346
Total	**1.0400e-003**	**7.3000e-004**	**7.7900e-003**	**2.0000e-005**	**2.3600e-003**	**2.0000e-005**	**2.3700e-003**	**6.3000e-004**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**2.0334**	**2.0334**	**5.0000e-005**	**0.0000**	**2.0346**

3.3 Grading - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0954	0.0000	0.0954	0.0396	0.0000	0.0396	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0668	0.7530	0.4794	9.3000e-004		0.0326	0.0326		0.0300	0.0300	0.0000	81.7263	81.7263	0.0264	0.0000	82.3871
Total	**0.0668**	**0.7530**	**0.4794**	**9.3000e-004**	**0.0954**	**0.0326**	**0.1280**	**0.0396**	**0.0300**	**0.0696**	**0.0000**	**81.7263**	**81.7263**	**0.0264**	**0.0000**	**82.3871**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0400e-003	7.3000e-004	7.7900e-003	2.0000e-005	2.3600e-003	2.0000e-005	2.3700e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	2.0334	2.0334	5.0000e-005	0.0000	2.0346
Total	**1.0400e-003**	**7.3000e-004**	**7.7900e-003**	**2.0000e-005**	**2.3600e-003**	**2.0000e-005**	**2.3700e-003**	**6.3000e-004**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**2.0334**	**2.0334**	**5.0000e-005**	**0.0000**	**2.0346**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2353	2.1297	1.8702	2.9900e-003		0.1240	0.1240		0.1166	0.1166	0.0000	257.0871	257.0871	0.0627	0.0000	258.6551
Total	**0.2353**	**2.1297**	**1.8702**	**2.9900e-003**		**0.1240**	**0.1240**		**0.1166**	**0.1166**	**0.0000**	**257.0871**	**257.0871**	**0.0627**	**0.0000**	**258.6551**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0438	1.4128	0.2787	3.4500e-003	0.0775	6.1700e-003	0.0837	0.0225	5.9000e-003	0.0284	0.0000	327.8464	327.8464	0.0161	0.0000	328.2477
Worker	0.1092	0.0764	0.8183	2.3600e-003	0.2476	1.6500e-003	0.2492	0.0659	1.5200e-003	0.0674	0.0000	213.6663	213.6663	5.2700e-003	0.0000	213.7979
Total	**0.1530**	**1.4892**	**1.0971**	**5.8100e-003**	**0.3251**	**7.8200e-003**	**0.3329**	**0.0883**	**7.4200e-003**	**0.0958**	**0.0000**	**541.5126**	**541.5126**	**0.0213**	**0.0000**	**542.0456**

3.4 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2353	2.1297	1.8702	2.9900e-003		0.1240	0.1240		0.1166	0.1166	0.0000	257.0868	257.0868	0.0627	0.0000	258.6548
Total	**0.2353**	**2.1297**	**1.8702**	**2.9900e-003**		**0.1240**	**0.1240**		**0.1166**	**0.1166**	**0.0000**	**257.0868**	**257.0868**	**0.0627**	**0.0000**	**258.6548**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0438	1.4128	0.2787	3.4500e-003	0.0775	6.1700e-003	0.0837	0.0225	5.9000e-003	0.0284	0.0000	327.8464	327.8464	0.0161	0.0000	328.2477
Worker	0.1092	0.0764	0.8183	2.3600e-003	0.2476	1.6500e-003	0.2492	0.0659	1.5200e-003	0.0674	0.0000	213.6663	213.6663	5.2700e-003	0.0000	213.7979
Total	**0.1530**	**1.4892**	**1.0971**	**5.8100e-003**	**0.3251**	**7.8200e-003**	**0.3329**	**0.0883**	**7.4200e-003**	**0.0958**	**0.0000**	**541.5126**	**541.5126**	**0.0213**	**0.0000**	**542.0456**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0741	0.6799	0.6464	1.0500e-003		0.0374	0.0374		0.0352	0.0352	0.0000	90.3385	90.3385	0.0218	0.0000	90.8834
Total	**0.0741**	**0.6799**	**0.6464**	**1.0500e-003**		**0.0374**	**0.0374**		**0.0352**	**0.0352**	**0.0000**	**90.3385**	**90.3385**	**0.0218**	**0.0000**	**90.8834**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0129	0.4556	0.0870	1.2000e-003	0.0272	1.0400e-003	0.0283	7.8900e-003	1.0000e-003	8.8800e-003	0.0000	114.2759	114.2759	5.3300e-003	0.0000	114.4090
Worker	0.0357	0.0240	0.2630	8.0000e-004	0.0870	5.6000e-004	0.0875	0.0232	5.2000e-004	0.0237	0.0000	72.4308	72.4308	1.6500e-003	0.0000	72.4722
Total	**0.0486**	**0.4796**	**0.3500**	**2.0000e-003**	**0.1142**	**1.6000e-003**	**0.1158**	**0.0310**	**1.5200e-003**	**0.0326**	**0.0000**	**186.7067**	**186.7067**	**6.9800e-003**	**0.0000**	**186.8812**

3.4 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0741	0.6799	0.6464	1.0500e-003		0.0374	0.0374		0.0352	0.0352	0.0000	90.3384	90.3384	0.0218	0.0000	90.8833
Total	**0.0741**	**0.6799**	**0.6464**	**1.0500e-003**		**0.0374**	**0.0374**		**0.0352**	**0.0352**	**0.0000**	**90.3384**	**90.3384**	**0.0218**	**0.0000**	**90.8833**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0129	0.4556	0.0870	1.2000e-003	0.0272	1.0400e-003	0.0283	7.8900e-003	1.0000e-003	8.8800e-003	0.0000	114.2759	114.2759	5.3300e-003	0.0000	114.4090
Worker	0.0357	0.0240	0.2630	8.0000e-004	0.0870	5.6000e-004	0.0875	0.0232	5.2000e-004	0.0237	0.0000	72.4308	72.4308	1.6500e-003	0.0000	72.4722
Total	**0.0486**	**0.4796**	**0.3500**	**2.0000e-003**	**0.1142**	**1.6000e-003**	**0.1158**	**0.0310**	**1.5200e-003**	**0.0326**	**0.0000**	**186.7067**	**186.7067**	**6.9800e-003**	**0.0000**	**186.8812**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	0.0153					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0278**	**0.1292**	**0.1465**	**2.3000e-004**		**6.7800e-003**	**6.7800e-003**		**6.2400e-003**	**6.2400e-003**	**0.0000**	**20.0235**	**20.0235**	**6.4800e-003**	**0.0000**	**20.1854**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	3.3000e-004	3.5600e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9809	0.9809	2.0000e-005	0.0000	0.9815
Total	**4.8000e-004**	**3.3000e-004**	**3.5600e-003**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9809**	**0.9809**	**2.0000e-005**	**0.0000**	**0.9815**

3.5 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	0.0153					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0278**	**0.1292**	**0.1465**	**2.3000e-004**		**6.7800e-003**	**6.7800e-003**		**6.2400e-003**	**6.2400e-003**	**0.0000**	**20.0235**	**20.0235**	**6.4800e-003**	**0.0000**	**20.1854**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	3.3000e-004	3.5600e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9809	0.9809	2.0000e-005	0.0000	0.9815
Total	**4.8000e-004**	**3.3000e-004**	**3.5600e-003**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9809**	**0.9809**	**2.0000e-005**	**0.0000**	**0.9815**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8626					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total	**0.8648**	**0.0153**	**0.0182**	**3.0000e-005**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.8000e-004**	**0.0000**	**2.5576**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8400e-003	1.2400e-003	0.0135	4.0000e-005	4.4800e-003	3.0000e-005	4.5100e-003	1.1900e-003	3.0000e-005	1.2200e-003	0.0000	3.7275	3.7275	9.0000e-005	0.0000	3.7296
Total	**1.8400e-003**	**1.2400e-003**	**0.0135**	**4.0000e-005**	**4.4800e-003**	**3.0000e-005**	**4.5100e-003**	**1.1900e-003**	**3.0000e-005**	**1.2200e-003**	**0.0000**	**3.7275**	**3.7275**	**9.0000e-005**	**0.0000**	**3.7296**

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8626					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total	**0.8648**	**0.0153**	**0.0182**	**3.0000e-005**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.8000e-004**	**0.0000**	**2.5576**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8400e-003	1.2400e-003	0.0135	4.0000e-005	4.4800e-003	3.0000e-005	4.5100e-003	1.1900e-003	3.0000e-005	1.2200e-003	0.0000	3.7275	3.7275	9.0000e-005	0.0000	3.7296
Total	**1.8400e-003**	**1.2400e-003**	**0.0135**	**4.0000e-005**	**4.4800e-003**	**3.0000e-005**	**4.5100e-003**	**1.1900e-003**	**3.0000e-005**	**1.2200e-003**	**0.0000**	**3.7275**	**3.7275**	**9.0000e-005**	**0.0000**	**3.7296**

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	1.7043	10.1403	16.7025	0.0460	2.9820	0.0644	3.0464	0.8020	0.0610	0.8630	0.0000	4,219.5668	4,219.5668	0.2346	0.0000	4,225.4310
Unmitigated	1.7043	10.1403	16.7025	0.0460	2.9820	0.0644	3.0464	0.8020	0.0610	0.8630	0.0000	4,219.5668	4,219.5668	0.2346	0.0000	4,225.4310

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	203.35	198.45	169.40	566,607	566,607
General Office Building	275.75	61.50	26.25	500,653	500,653
High Turnover (Sit Down Restaurant)	1,271.50	1,583.70	1318.40	1,534,798	1,534,798
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	3,202.50	3,747.75	1893.00	5,423,535	5,423,535
Total	4,953.10	5,591.40	3,407.05	8,025,593	8,025,593

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
Condo/Townhouse	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.476697	0.043889	0.220176	0.142419	0.030478	0.007289	0.024295	0.043166	0.001518	0.001285	0.006419	0.000804	0.001565
General Office Building	0.476697	0.043889	0.220176	0.142419	0.030478	0.007289	0.024295	0.043166	0.001518	0.001285	0.006419	0.000804	0.001565
High Turnover (Sit Down Restaurant)	0.476697	0.043889	0.220176	0.142419	0.030478	0.007289	0.024295	0.043166	0.001518	0.001285	0.006419	0.000804	0.001565
Parking Lot	0.476697	0.043889	0.220176	0.142419	0.030478	0.007289	0.024295	0.043166	0.001518	0.001285	0.006419	0.000804	0.001565
Regional Shopping Center	0.476697	0.043889	0.220176	0.142419	0.030478	0.007289	0.024295	0.043166	0.001518	0.001285	0.006419	0.000804	0.001565

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Loomis Costco No Project/Future Development Scenario - Placer-Sacramento County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	523.9883	523.9883	0.0237	4.9000e-003	526.0414
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	523.9883	523.9883	0.0237	4.9000e-003	526.0414
NaturalGas Mitigated	0.0167	0.1500	0.1122	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	165.5556	165.5556	3.1700e-003	3.0400e-003	166.5394
NaturalGas Unmitigated	0.0167	0.1500	0.1122	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	165.5556	165.5556	3.1700e-003	3.0400e-003	166.5394

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	719294	3.8800e-003	0.0331	0.0141	2.1000e-004		2.6800e-003	2.6800e-003		2.6800e-003	2.6800e-003	0.0000	38.3843	38.3843	7.4000e-004	7.0000e-004	38.6124
General Office Building	411500	2.2200e-003	0.0202	0.0169	1.2000e-004		1.5300e-003	1.5300e-003		1.5300e-003	1.5300e-003	0.0000	21.9592	21.9592	4.2000e-004	4.0000e-004	22.0897
High Turnover (Sit Down Restaurant)	1.0941e+006	5.9000e-003	0.0536	0.0451	3.2000e-004		4.0800e-003	4.0800e-003		4.0800e-003	4.0800e-003	0.0000	58.3853	58.3853	1.1200e-003	1.0700e-003	58.7323
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	877500	4.7300e-003	0.0430	0.0361	2.6000e-004		3.2700e-003	3.2700e-003		3.2700e-003	3.2700e-003	0.0000	46.8267	46.8267	9.0000e-004	8.6000e-004	47.1050
Total		**0.0167**	**0.1500**	**0.1122**	**9.1000e-004**		**0.0116**	**0.0116**		**0.0116**	**0.0116**	**0.0000**	**165.5555**	**165.5555**	**3.1800e-003**	**3.0300e-003**	**166.5394**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	719294	3.8800e-003	0.0331	0.0141	2.1000e-004		2.6800e-003	2.6800e-003		2.6800e-003	2.6800e-003	0.0000	38.3843	38.3843	7.4000e-004	7.0000e-004	38.6124
General Office Building	411500	2.2200e-003	0.0202	0.0169	1.2000e-004		1.5300e-003	1.5300e-003		1.5300e-003	1.5300e-003	0.0000	21.9592	21.9592	4.2000e-004	4.0000e-004	22.0897
High Turnover (Sit Down Restaurant)	1.0941e+006	5.9000e-003	0.0536	0.0451	3.2000e-004		4.0800e-003	4.0800e-003		4.0800e-003	4.0800e-003	0.0000	58.3853	58.3853	1.1200e-003	1.0700e-003	58.7323
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	877500	4.7300e-003	0.0430	0.0361	2.6000e-004		3.2700e-003	3.2700e-003		3.2700e-003	3.2700e-003	0.0000	46.8267	46.8267	9.0000e-004	8.6000e-004	47.1050
Total		**0.0167**	**0.1500**	**0.1122**	**9.1000e-004**		**0.0116**	**0.0116**		**0.0116**	**0.0116**	**0.0000**	**165.5555**	**165.5555**	**3.1800e-003**	**3.0300e-003**	**166.5394**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	181220	52.7190	2.3800e-003	4.9000e-004	52.9256
General Office Building	250250	72.8006	3.2900e-003	6.8000e-004	73.0859
High Turnover (Sit Down Restaurant)	313500	91.2007	4.1200e-003	8.5000e-004	91.5581
Parking Lot	171975	50.0295	2.2600e-003	4.7000e-004	50.2255
Regional Shopping Center	884250	257.2385	0.0116	2.4100e-003	258.2464
Total		**523.9883**	**0.0237**	**4.9000e-003**	**526.0414**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	181220	52.7190	2.3800e-003	4.9000e-004	52.9256
General Office Building	250250	72.8006	3.2900e-003	6.8000e-004	73.0859
High Turnover (Sit Down Restaurant)	313500	91.2007	4.1200e-003	8.5000e-004	91.5581
Parking Lot	171975	50.0295	2.2600e-003	4.7000e-004	50.2255
Regional Shopping Center	884250	257.2385	0.0116	2.4100e-003	258.2464
Total		**523.9883**	**0.0237**	**4.9000e-003**	**526.0414**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.5169	0.0582	3.7470	6.3300e-003		0.4901	0.4901		0.4901	0.4901	46.4831	19.9210	66.4041	0.0433	3.6600e-003	68.5765
Unmitigated	3.5169	0.0582	3.7470	6.3300e-003		0.4901	0.4901		0.4901	0.4901	46.4831	19.9210	66.4041	0.0433	3.6600e-003	68.5765

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	0.0863					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5991					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.8236	0.0551	3.4854	6.3100e-003		0.4887	0.4887		0.4887	0.4887	46.4831	19.4943	65.9774	0.0429	3.6600e-003	68.1394
Landscaping	8.0000e-003	3.0200e-003	0.2616	1.0000e-005		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	0.4267	0.4267	4.2000e-004	0.0000	0.4371
Total	**3.5169**	**0.0582**	**3.7470**	**6.3200e-003**		**0.4901**	**0.4901**		**0.4901**	**0.4901**	**46.4831**	**19.9210**	**66.4041**	**0.0433**	**3.6600e-003**	**68.5765**

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	0.0863					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5991					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.8236	0.0551	3.4854	6.3100e-003		0.4887	0.4887		0.4887	0.4887	46.4831	19.4943	65.9774	0.0429	3.6600e-003	68.1394
Landscaping	8.0000e-003	3.0200e-003	0.2616	1.0000e-005		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	0.4267	0.4267	4.2000e-004	0.0000	0.4371
Total	**3.5169**	**0.0582**	**3.7470**	**6.3200e-003**		**0.4901**	**0.4901**		**0.4901**	**0.4901**	**46.4831**	**19.9210**	**66.4041**	**0.0433**	**3.6600e-003**	**68.5765**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	38.5169	0.5218	0.0126	55.3150
Unmitigated	38.5169	0.5218	0.0126	55.3150

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	2.93193 / 1.84839	7.4274	0.0958	2.3200e-003	10.5135
General Office Building	4.44334 / 2.72334	11.1769	0.1452	3.5100e-003	15.8536
High Turnover (Sit Down Restaurant)	3.03534 / 0.193745	5.9382	0.0991	2.3800e-003	9.1263
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	5.55544 / 3.40495	13.9743	0.1816	4.3900e-003	19.8215
Total		**38.5169**	**0.5218**	**0.0126**	**55.3150**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	2.93193 / 1.84839	7.4274	0.0958	2.3200e-003	10.5135
General Office Building	4.44334 / 2.72334	11.1769	0.1452	3.5100e-003	15.8536
High Turnover (Sit Down Restaurant)	3.03534 / 0.193745	5.9382	0.0991	2.3800e-003	9.1263
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	5.55544 / 3.40495	13.9743	0.1816	4.3900e-003	19.8215
Total		**38.5169**	**0.5218**	**0.0126**	**55.3150**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	49.0629	2.8995	0.0000	121.5513
Unmitigated	49.0629	2.8995	0.0000	121.5513

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	20.7	4.2019	0.2483	0.0000	10.4101
General Office Building	23.25	4.7195	0.2789	0.0000	11.6925
High Turnover (Sit Down Restaurant)	119	24.1559	1.4276	0.0000	59.8453
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	78.75	15.9855	0.9447	0.0000	39.6035
Total		**49.0629**	**2.8995**	**0.0000**	**121.5513**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	20.7	4.2019	0.2483	0.0000	10.4101
General Office Building	23.25	4.7195	0.2789	0.0000	11.6925
High Turnover (Sit Down Restaurant)	119	24.1559	1.4276	0.0000	59.8453
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	78.75	15.9855	0.9447	0.0000	39.6035
Total		**49.0629**	**2.8995**	**0.0000**	**121.5513**

9.0 Operational Offroad

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

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

Loomis Costco No Project/Future Development Scenario

Placer-Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	25.00	1000sqft	0.57	25,000.00	0
Parking Lot	11.28	Acre	11.28	491,356.80	0
High Turnover (Sit Down Restaurant)	10.00	1000sqft	0.23	10,000.00	0
Condo/Townhouse	35.00	Dwelling Unit	3.77	35,000.00	100
Regional Shopping Center	75.00	1000sqft	1.72	75,000.00	0
Other Asphalt Surfaces	0.36	Acre	0.36	15,681.60	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Alternative 1B conceptual no project/future development land use scenario. Other asphalt surfaces used to model off-site improvements project.

Construction Phase - Construction schedule and equipment based on CalEEMod defaults.

Vehicle Trips -

Grading -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	2.19	3.77

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5278	50.2402	32.5452	0.0818	39.8936	2.1984	42.0920	21.8867	2.0225	23.9092	0.0000	8,180.3485	8,180.3485	1.9464	0.0000	8,201.1104
2021	86.6844	29.5097	26.2447	0.0807	3.0577	0.9992	4.0569	0.8275	0.9396	1.7671	0.0000	8,072.9620	8,072.9620	0.8092	0.0000	8,093.1910
Maximum	**86.6844**	**50.2402**	**32.5452**	**0.0818**	**39.8936**	**2.1984**	**42.0920**	**21.8867**	**2.0225**	**23.9092**	**0.0000**	**8,180.3485**	**8,180.3485**	**1.9464**	**0.0000**	**8,201.1104**

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					
2020	4.5278	50.2402	32.5452	0.0818	39.8936	2.1984	42.0920	21.8867	2.0225	23.9092	0.0000	8,180.3485	8,180.3485	1.9464	0.0000	8,201.1104
2021	86.6844	29.5097	26.2447	0.0807	3.0577	0.9992	4.0569	0.8275	0.9396	1.7671	0.0000	8,072.9620	8,072.9620	0.8092	0.0000	8,093.1910
Maximum	**86.6844**	**50.2402**	**32.5452**	**0.0818**	**39.8936**	**2.1984**	**42.0920**	**21.8867**	**2.0225**	**23.9092**	**0.0000**	**8,180.3485**	**8,180.3485**	**1.9464**	**0.0000**	**8,201.1104**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**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**

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	72.7119	1.3784	87.9161	0.1542		11.9352	11.9352		11.9352	11.9352	1,249.7279	529.3436	1,779.0715	1.1584	0.0983	1,837.3251
Energy	0.0917	0.8217	0.6150	5.0000e-003		0.0633	0.0633		0.0633	0.0633		999.9658	999.9658	0.0192	0.0183	1,005.9081
Mobile	13.6880	65.2598	113.1545	0.3239	20.5887	0.4221	21.0108	5.5168	0.3995	5.9163		32,761.0862	32,761.0862	1.6796		32,803.0749
Total	**86.4916**	**67.4599**	**201.6855**	**0.4831**	**20.5887**	**12.4206**	**33.0093**	**5.5168**	**12.3980**	**17.9148**	**1,249.7279**	**34,290.3956**	**35,540.1235**	**2.8571**	**0.1166**	**35,646.3080**

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	72.7119	1.3784	87.9161	0.1542		11.9352	11.9352		11.9352	11.9352	1,249.7279	529.3436	1,779.0715	1.1584	0.0983	1,837.3251
Energy	0.0917	0.8217	0.6150	5.0000e-003		0.0633	0.0633		0.0633	0.0633		999.9658	999.9658	0.0192	0.0183	1,005.9081
Mobile	13.6880	65.2598	113.1545	0.3239	20.5887	0.4221	21.0108	5.5168	0.3995	5.9163		32,761.0862	32,761.0862	1.6796		32,803.0749
Total	**86.4916**	**67.4599**	**201.6855**	**0.4831**	**20.5887**	**12.4206**	**33.0093**	**5.5168**	**12.3980**	**17.9148**	**1,249.7279**	**34,290.3956**	**35,540.1235**	**2.8571**	**0.1166**	**35,646.3080**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**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	Site Preparation	Site Preparation	1/1/2020	1/14/2020	5	10	
2	Grading	Grading	1/15/2020	2/25/2020	5	30	
3	Building Construction	Building Construction	2/26/2020	4/20/2021	5	300	
4	Paving	Paving	4/21/2021	5/18/2021	5	20	
5	Architectural Coating	Architectural Coating	5/19/2021	6/15/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 55

Acres of Paving: 11.64

Residential Indoor: 91,125; Residential Outdoor: 30,375; Non-Residential Indoor: 165,000; Non-Residential Outdoor: 55,000; Striped Parking Area: 30,710 (Architectural Coating – sqft)

OffRoad Equipment

Loomis Costco No Project/Future Development Scenario - Placer-Sacramento County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	284.00	107.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	57.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					39.7458	0.0000	39.7458	21.8475	0.0000	21.8475			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**39.7458**	**2.1974**	**41.9432**	**21.8475**	**2.0216**	**23.8691**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0699	0.0384	0.5282	1.4800e-003	0.1479	9.4000e-004	0.1488	0.0392	8.7000e-004	0.0401		147.3592	147.3592	3.6200e-003		147.4497
Total	**0.0699**	**0.0384**	**0.5282**	**1.4800e-003**	**0.1479**	**9.4000e-004**	**0.1488**	**0.0392**	**8.7000e-004**	**0.0401**		**147.3592**	**147.3592**	**3.6200e-003**		**147.4497**

3.2 Site Preparation - 2020

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					39.7458	0.0000	39.7458	21.8475	0.0000	21.8475			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**39.7458**	**2.1974**	**41.9432**	**21.8475**	**2.0216**	**23.8691**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0699	0.0384	0.5282	1.4800e-003	0.1479	9.4000e-004	0.1488	0.0392	8.7000e-004	0.0401		147.3592	147.3592	3.6200e-003		147.4497
Total	**0.0699**	**0.0384**	**0.5282**	**1.4800e-003**	**0.1479**	**9.4000e-004**	**0.1488**	**0.0392**	**8.7000e-004**	**0.0401**		**147.3592**	**147.3592**	**3.6200e-003**		**147.4497**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3605	0.0000	6.3605	2.6374	0.0000	2.6374			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**6.3605**	**2.1739**	**8.5344**	**2.6374**	**2.0000**	**4.6374**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0777	0.0427	0.5869	1.6400e-003	0.1643	1.0400e-003	0.1653	0.0436	9.6000e-004	0.0445		163.7325	163.7325	4.0200e-003		163.8330
Total	**0.0777**	**0.0427**	**0.5869**	**1.6400e-003**	**0.1643**	**1.0400e-003**	**0.1653**	**0.0436**	**9.6000e-004**	**0.0445**		**163.7325**	**163.7325**	**4.0200e-003**		**163.8330**

3.3 Grading - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3605	0.0000	6.3605	2.6374	0.0000	2.6374			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**6.3605**	**2.1739**	**8.5344**	**2.6374**	**2.0000**	**4.6374**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0777	0.0427	0.5869	1.6400e-003	0.1643	1.0400e-003	0.1653	0.0436	9.6000e-004	0.0445		163.7325	163.7325	4.0200e-003		163.8330
Total	**0.0777**	**0.0427**	**0.5869**	**1.6400e-003**	**0.1643**	**1.0400e-003**	**0.1653**	**0.0436**	**9.6000e-004**	**0.0445**		**163.7325**	**163.7325**	**4.0200e-003**		**163.8330**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3847	12.5369	2.2833	0.0316	0.7247	0.0550	0.7797	0.2087	0.0526	0.2612		3,302.2841	3,302.2841	0.1505		3,306.0471
Worker	1.1029	0.6064	8.3337	0.0233	2.3330	0.0148	2.3478	0.6188	0.0137	0.6325		2,325.0013	2,325.0013	0.0571		2,326.4288
Total	**1.4875**	**13.1433**	**10.6170**	**0.0549**	**3.0577**	**0.0698**	**3.1275**	**0.8275**	**0.0662**	**0.8937**		**5,627.2854**	**5,627.2854**	**0.2076**		**5,632.4759**

3.4 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3847	12.5369	2.2833	0.0316	0.7247	0.0550	0.7797	0.2087	0.0526	0.2612		3,302.2841	3,302.2841	0.1505		3,306.0471
Worker	1.1029	0.6064	8.3337	0.0233	2.3330	0.0148	2.3478	0.6188	0.0137	0.6325		2,325.0013	2,325.0013	0.0571		2,326.4288
Total	**1.4875**	**13.1433**	**10.6170**	**0.0549**	**3.0577**	**0.0698**	**3.1275**	**0.8275**	**0.0662**	**0.8937**		**5,627.2854**	**5,627.2854**	**0.2076**		**5,632.4759**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3214	11.5342	2.0194	0.0313	0.7247	0.0262	0.7509	0.2086	0.0250	0.2337		3,276.4631	3,276.4631	0.1420		3,280.0129
Worker	1.0258	0.5434	7.6501	0.0225	2.3330	0.0144	2.3474	0.6188	0.0133	0.6321		2,243.1350	2,243.1350	0.0512		2,244.4138
Total	**1.3471**	**12.0776**	**9.6695**	**0.0538**	**3.0577**	**0.0406**	**3.0983**	**0.8275**	**0.0383**	**0.8658**		**5,519.5981**	**5,519.5981**	**0.1931**		**5,524.4267**

3.4 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3214	11.5342	2.0194	0.0313	0.7247	0.0262	0.7509	0.2086	0.0250	0.2337		3,276.4631	3,276.4631	0.1420		3,280.0129
Worker	1.0258	0.5434	7.6501	0.0225	2.3330	0.0144	2.3474	0.6188	0.0133	0.6321		2,243.1350	2,243.1350	0.0512		2,244.4138
Total	**1.3471**	**12.0776**	**9.6695**	**0.0538**	**3.0577**	**0.0406**	**3.0983**	**0.8275**	**0.0383**	**0.8658**		**5,519.5981**	**5,519.5981**	**0.1931**		**5,524.4267**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	1.5248					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7804**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0542	0.0287	0.4041	1.1900e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		118.4754	118.4754	2.7000e-003		118.5430
Total	**0.0542**	**0.0287**	**0.4041**	**1.1900e-003**	**0.1232**	**7.6000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**118.4754**	**118.4754**	**2.7000e-003**		**118.5430**

3.5 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	1.5248					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7804**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0542	0.0287	0.4041	1.1900e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		118.4754	118.4754	2.7000e-003		118.5430
Total	**0.0542**	**0.0287**	**0.4041**	**1.1900e-003**	**0.1232**	**7.6000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**118.4754**	**118.4754**	**2.7000e-003**		**118.5430**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	86.2597					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**86.4786**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2059	0.1091	1.5354	4.5200e-003	0.4682	2.9000e-003	0.4711	0.1242	2.6700e-003	0.1269		450.2067	450.2067	0.0103		450.4633
Total	**0.2059**	**0.1091**	**1.5354**	**4.5200e-003**	**0.4682**	**2.9000e-003**	**0.4711**	**0.1242**	**2.6700e-003**	**0.1269**		**450.2067**	**450.2067**	**0.0103**		**450.4633**

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	86.2597					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**86.4786**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2059	0.1091	1.5354	4.5200e-003	0.4682	2.9000e-003	0.4711	0.1242	2.6700e-003	0.1269		450.2067	450.2067	0.0103		450.4633
Total	**0.2059**	**0.1091**	**1.5354**	**4.5200e-003**	**0.4682**	**2.9000e-003**	**0.4711**	**0.1242**	**2.6700e-003**	**0.1269**		**450.2067**	**450.2067**	**0.0103**		**450.4633**

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	13.6880	65.2598	113.1545	0.3239	20.5887	0.4221	21.0108	5.5168	0.3995	5.9163		32,761.0862	32,761.0862	1.6796		32,803.0749
Unmitigated	13.6880	65.2598	113.1545	0.3239	20.5887	0.4221	21.0108	5.5168	0.3995	5.9163		32,761.0862	32,761.0862	1.6796		32,803.0749

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	203.35	198.45	169.40	566,607	566,607
General Office Building	275.75	61.50	26.25	500,653	500,653
High Turnover (Sit Down Restaurant)	1,271.50	1,583.70	1318.40	1,534,798	1,534,798
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	3,202.50	3,747.75	1893.00	5,423,535	5,423,535
Total	4,953.10	5,591.40	3,407.05	8,025,593	8,025,593

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
Condo/Townhouse	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.476697	0.043889	0.220176	0.142419	0.030478	0.007289	0.024295	0.043166	0.001518	0.001285	0.006419	0.000804	0.001565
General Office Building	0.476697	0.043889	0.220176	0.142419	0.030478	0.007289	0.024295	0.043166	0.001518	0.001285	0.006419	0.000804	0.001565
High Turnover (Sit Down Restaurant)	0.476697	0.043889	0.220176	0.142419	0.030478	0.007289	0.024295	0.043166	0.001518	0.001285	0.006419	0.000804	0.001565
Parking Lot	0.476697	0.043889	0.220176	0.142419	0.030478	0.007289	0.024295	0.043166	0.001518	0.001285	0.006419	0.000804	0.001565
Regional Shopping Center	0.476697	0.043889	0.220176	0.142419	0.030478	0.007289	0.024295	0.043166	0.001518	0.001285	0.006419	0.000804	0.001565

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures 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	0.0917	0.8217	0.6150	5.0000e-003		0.0633	0.0633		0.0633	0.0633		999.9658	999.9658	0.0192	0.0183	1,005.9081
NaturalGas Unmitigated	0.0917	0.8217	0.6150	5.0000e-003		0.0633	0.0633		0.0633	0.0633		999.9658	999.9658	0.0192	0.0183	1,005.9081

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	1970.67	0.0213	0.1816	0.0773	1.1600e-003		0.0147	0.0147		0.0147	0.0147		231.8433	231.8433	4.4400e-003	4.2500e-003	233.2210
General Office Building	1127.4	0.0122	0.1105	0.0928	6.6000e-004		8.4000e-003	8.4000e-003		8.4000e-003	8.4000e-003		132.6350	132.6350	2.5400e-003	2.4300e-003	133.4232
High Turnover (Sit Down Restaurant)	2997.53	0.0323	0.2939	0.2469	1.7600e-003		0.0223	0.0223		0.0223	0.0223		352.6511	352.6511	6.7600e-003	6.4700e-003	354.7467
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2404.11	0.0259	0.2357	0.1980	1.4100e-003		0.0179	0.0179		0.0179	0.0179		282.8364	282.8364	5.4200e-003	5.1900e-003	284.5172
Total		**0.0917**	**0.8217**	**0.6150**	**4.9900e-003**		**0.0633**	**0.0633**		**0.0633**	**0.0633**		**999.9658**	**999.9658**	**0.0192**	**0.0183**	**1,005.9081**

5.2 Energy by Land Use - NaturalGas

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					
Condo/Townhouse	1.97067	0.0213	0.1816	0.0773	1.1600e-003		0.0147	0.0147		0.0147	0.0147		231.8433	231.8433	4.4400e-003	4.2500e-003	233.2210
General Office Building	1.1274	0.0122	0.1105	0.0928	6.6000e-004		8.4000e-003	8.4000e-003		8.4000e-003	8.4000e-003		132.6350	132.6350	2.5400e-003	2.4300e-003	133.4232
High Turnover (Sit Down Restaurant)	2.99753	0.0323	0.2939	0.2469	1.7600e-003		0.0223	0.0223		0.0223	0.0223		352.6511	352.6511	6.7600e-003	6.4700e-003	354.7467
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.40411	0.0259	0.2357	0.1980	1.4100e-003		0.0179	0.0179		0.0179	0.0179		282.8364	282.8364	5.4200e-003	5.1900e-003	284.5172
Total		**0.0917**	**0.8217**	**0.6150**	**4.9900e-003**		**0.0633**	**0.0633**		**0.0633**	**0.0633**		**999.9658**	**999.9658**	**0.0192**	**0.0183**	**1,005.9081**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	72.7119	1.3784	87.9161	0.1542		11.9352	11.9352		11.9352	11.9352	1,249.7279	529.3436	1,779.0715	1.1584	0.0983	1,837.3251
Unmitigated	72.7119	1.3784	87.9161	0.1542		11.9352	11.9352		11.9352	11.9352	1,249.7279	529.3436	1,779.0715	1.1584	0.0983	1,837.3251

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	0.4727					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.2826					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	68.8678	1.3449	85.0098	0.1540		11.9192	11.9192		11.9192	11.9192	1,249.7279	524.1177	1,773.8455	1.1533	0.0983	1,831.9714
Landscaping	0.0888	0.0335	2.9063	1.5000e-004		0.0160	0.0160		0.0160	0.0160		5.2260	5.2260	5.1100e-003		5.3537
Total	**72.7119**	**1.3784**	**87.9161**	**0.1542**		**11.9352**	**11.9352**		**11.9352**	**11.9352**	**1,249.7279**	**529.3436**	**1,779.0715**	**1.1584**	**0.0983**	**1,837.3251**

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	0.4727					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.2826					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	68.8678	1.3449	85.0098	0.1540		11.9192	11.9192		11.9192	11.9192	1,249.7279	524.1177	1,773.8455	1.1533	0.0983	1,831.9714
Landscaping	0.0888	0.0335	2.9063	1.5000e-004		0.0160	0.0160		0.0160	0.0160		5.2260	5.2260	5.1100e-003		5.3537
Total	**72.7119**	**1.3784**	**87.9161**	**0.1542**		**11.9352**	**11.9352**		**11.9352**	**11.9352**	**1,249.7279**	**529.3436**	**1,779.0715**	**1.1584**	**0.0983**	**1,837.3251**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 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

Loomis Costco No Project/Future Development Scenario

Placer-Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	25.00	1000sqft	0.57	25,000.00	0
Parking Lot	11.28	Acre	11.28	491,356.80	0
High Turnover (Sit Down Restaurant)	10.00	1000sqft	0.23	10,000.00	0
Condo/Townhouse	35.00	Dwelling Unit	3.77	35,000.00	100
Regional Shopping Center	75.00	1000sqft	1.72	75,000.00	0
Other Asphalt Surfaces	0.36	Acre	0.36	15,681.60	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Alternative 1B conceptual no project/future development land use scenario. Other asphalt surfaces used to model off-site improvements project.

Construction Phase - Construction schedule and equipment based on CalEEMod defaults.

Vehicle Trips -

Grading -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	2.19	3.77

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5252	50.2510	32.4840	0.0782	39.8936	2.1984	42.0920	21.8867	2.0225	23.9092	0.0000	7,814.4538	7,814.4538	1.9461	0.0000	7,835.5780
2021	86.6779	29.7264	25.8581	0.0772	3.0577	1.0005	4.0582	0.8275	0.9409	1.7683	0.0000	7,716.1375	7,716.1375	0.8233	0.0000	7,736.7204
Maximum	**86.6779**	**50.2510**	**32.4840**	**0.0782**	**39.8936**	**2.1984**	**42.0920**	**21.8867**	**2.0225**	**23.9092**	**0.0000**	**7,814.4538**	**7,814.4538**	**1.9461**	**0.0000**	**7,835.5780**

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					
2020	4.5252	50.2510	32.4840	0.0782	39.8936	2.1984	42.0920	21.8867	2.0225	23.9092	0.0000	7,814.4538	7,814.4538	1.9461	0.0000	7,835.5780
2021	86.6779	29.7264	25.8581	0.0772	3.0577	1.0005	4.0582	0.8275	0.9409	1.7683	0.0000	7,716.1375	7,716.1375	0.8233	0.0000	7,736.7204
Maximum	**86.6779**	**50.2510**	**32.4840**	**0.0782**	**39.8936**	**2.1984**	**42.0920**	**21.8867**	**2.0225**	**23.9092**	**0.0000**	**7,814.4538**	**7,814.4538**	**1.9461**	**0.0000**	**7,835.5780**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**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**

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	72.7119	1.3784	87.9161	0.1542		11.9352	11.9352		11.9352	11.9352	1,249.7279	529.3436	1,779.0715	1.1584	0.0983	1,837.3251
Energy	0.0917	0.8217	0.6150	5.0000e-003		0.0633	0.0633		0.0633	0.0633		999.9658	999.9658	0.0192	0.0183	1,005.9081
Mobile	11.0122	67.7322	117.9420	0.2969	20.5887	0.4321	21.0208	5.5168	0.4091	5.9259		30,022.4588	30,022.4588	1.7912		30,067.2398
Total	**83.8158**	**69.9324**	**206.4730**	**0.4560**	**20.5887**	**12.4306**	**33.0193**	**5.5168**	**12.4076**	**17.9244**	**1,249.7279**	**31,551.7682**	**32,801.4960**	**2.9688**	**0.1166**	**32,910.4729**

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	72.7119	1.3784	87.9161	0.1542		11.9352	11.9352		11.9352	11.9352	1,249.7279	529.3436	1,779.0715	1.1584	0.0983	1,837.3251
Energy	0.0917	0.8217	0.6150	5.0000e-003		0.0633	0.0633		0.0633	0.0633		999.9658	999.9658	0.0192	0.0183	1,005.9081
Mobile	11.0122	67.7322	117.9420	0.2969	20.5887	0.4321	21.0208	5.5168	0.4091	5.9259		30,022.4588	30,022.4588	1.7912		30,067.2398
Total	**83.8158**	**69.9324**	**206.4730**	**0.4560**	**20.5887**	**12.4306**	**33.0193**	**5.5168**	**12.4076**	**17.9244**	**1,249.7279**	**31,551.7682**	**32,801.4960**	**2.9688**	**0.1166**	**32,910.4729**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**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	Site Preparation	Site Preparation	1/1/2020	1/14/2020	5	10	
2	Grading	Grading	1/15/2020	2/25/2020	5	30	
3	Building Construction	Building Construction	2/26/2020	4/20/2021	5	300	
4	Paving	Paving	4/21/2021	5/18/2021	5	20	
5	Architectural Coating	Architectural Coating	5/19/2021	6/15/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 55

Acres of Paving: 11.64

Residential Indoor: 91,125; Residential Outdoor: 30,375; Non-Residential Indoor: 165,000; Non-Residential Outdoor: 55,000; Striped Parking Area: 30,710 (Architectural Coating – sqft)

OffRoad Equipment

Loomis Costco No Project/Future Development Scenario - Placer-Sacramento County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	284.00	107.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	57.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					39.7458	0.0000	39.7458	21.8475	0.0000	21.8475			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**39.7458**	**2.1974**	**41.9432**	**21.8475**	**2.0216**	**23.8691**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0676	0.0482	0.4732	1.3200e-003	0.1479	9.4000e-004	0.1488	0.0392	8.7000e-004	0.0401		131.1885	131.1885	3.2900e-003		131.2707
Total	**0.0676**	**0.0482**	**0.4732**	**1.3200e-003**	**0.1479**	**9.4000e-004**	**0.1488**	**0.0392**	**8.7000e-004**	**0.0401**		**131.1885**	**131.1885**	**3.2900e-003**		**131.2707**

3.2 Site Preparation - 2020

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					39.7458	0.0000	39.7458	21.8475	0.0000	21.8475			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**39.7458**	**2.1974**	**41.9432**	**21.8475**	**2.0216**	**23.8691**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0676	0.0482	0.4732	1.3200e-003	0.1479	9.4000e-004	0.1488	0.0392	8.7000e-004	0.0401		131.1885	131.1885	3.2900e-003		131.2707
Total	**0.0676**	**0.0482**	**0.4732**	**1.3200e-003**	**0.1479**	**9.4000e-004**	**0.1488**	**0.0392**	**8.7000e-004**	**0.0401**		**131.1885**	**131.1885**	**3.2900e-003**		**131.2707**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3605	0.0000	6.3605	2.6374	0.0000	2.6374			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**6.3605**	**2.1739**	**8.5344**	**2.6374**	**2.0000**	**4.6374**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0751	0.0535	0.5257	1.4600e-003	0.1643	1.0400e-003	0.1653	0.0436	9.6000e-004	0.0445		145.7650	145.7650	3.6500e-003		145.8563
Total	**0.0751**	**0.0535**	**0.5257**	**1.4600e-003**	**0.1643**	**1.0400e-003**	**0.1653**	**0.0436**	**9.6000e-004**	**0.0445**		**145.7650**	**145.7650**	**3.6500e-003**		**145.8563**

3.3 Grading - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3605	0.0000	6.3605	2.6374	0.0000	2.6374			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**6.3605**	**2.1739**	**8.5344**	**2.6374**	**2.0000**	**4.6374**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0751	0.0535	0.5257	1.4600e-003	0.1643	1.0400e-003	0.1653	0.0436	9.6000e-004	0.0445		145.7650	145.7650	3.6500e-003		145.8563
Total	**0.0751**	**0.0535**	**0.5257**	**1.4600e-003**	**0.1643**	**1.0400e-003**	**0.1653**	**0.0436**	**9.6000e-004**	**0.0445**		**145.7650**	**145.7650**	**3.6500e-003**		**145.8563**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4077	12.6668	2.7682	0.0305	0.7247	0.0565	0.7812	0.2087	0.0540	0.2627		3,191.5285	3,191.5285	0.1702		3,195.7838
Worker	1.0666	0.7599	7.4654	0.0208	2.3330	0.0148	2.3478	0.6188	0.0137	0.6325		2,069.8623	2,069.8623	0.0519		2,071.1598
Total	**1.4743**	**13.4266**	**10.2336**	**0.0513**	**3.0577**	**0.0713**	**3.1290**	**0.8275**	**0.0677**	**0.8951**		**5,261.3908**	**5,261.3908**	**0.2221**		**5,266.9436**

3.4 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4077	12.6668	2.7682	0.0305	0.7247	0.0565	0.7812	0.2087	0.0540	0.2627		3,191.5285	3,191.5285	0.1702		3,195.7838
Worker	1.0666	0.7599	7.4654	0.0208	2.3330	0.0148	2.3478	0.6188	0.0137	0.6325		2,069.8623	2,069.8623	0.0519		2,071.1598
Total	**1.4743**	**13.4266**	**10.2336**	**0.0513**	**3.0577**	**0.0713**	**3.1290**	**0.8275**	**0.0677**	**0.8951**		**5,261.3908**	**5,261.3908**	**0.2221**		**5,266.9436**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3428	11.6137	2.4692	0.0303	0.7247	0.0275	0.7522	0.2086	0.0263	0.2349		3,165.7171	3,165.7171	0.1610		3,169.7415
Worker	0.9931	0.6806	6.8137	0.0200	2.3330	0.0144	2.3474	0.6188	0.0133	0.6321		1,997.0565	1,997.0565	0.0463		1,998.2147
Total	**1.3358**	**12.2943**	**9.2829**	**0.0503**	**3.0577**	**0.0419**	**3.0996**	**0.8275**	**0.0396**	**0.8670**		**5,162.7736**	**5,162.7736**	**0.2073**		**5,167.9561**

3.4 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3428	11.6137	2.4692	0.0303	0.7247	0.0275	0.7522	0.2086	0.0263	0.2349		3,165.7171	3,165.7171	0.1610		3,169.7415
Worker	0.9931	0.6806	6.8137	0.0200	2.3330	0.0144	2.3474	0.6188	0.0133	0.6321		1,997.0565	1,997.0565	0.0463		1,998.2147
Total	**1.3358**	**12.2943**	**9.2829**	**0.0503**	**3.0577**	**0.0419**	**3.0996**	**0.8275**	**0.0396**	**0.8670**		**5,162.7736**	**5,162.7736**	**0.2073**		**5,167.9561**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	1.5248					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7804**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0525	0.0360	0.3599	1.0600e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		105.4783	105.4783	2.4500e-003		105.5395
Total	**0.0525**	**0.0360**	**0.3599**	**1.0600e-003**	**0.1232**	**7.6000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**105.4783**	**105.4783**	**2.4500e-003**		**105.5395**

3.5 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	1.5248					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7804**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0525	0.0360	0.3599	1.0600e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		105.4783	105.4783	2.4500e-003		105.5395
Total	**0.0525**	**0.0360**	**0.3599**	**1.0600e-003**	**0.1232**	**7.6000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**105.4783**	**105.4783**	**2.4500e-003**		**105.5395**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	86.2597					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**86.4786**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1993	0.1366	1.3675	4.0200e-003	0.4682	2.9000e-003	0.4711	0.1242	2.6700e-003	0.1269		400.8177	400.8177	9.3000e-003		401.0501
Total	**0.1993**	**0.1366**	**1.3675**	**4.0200e-003**	**0.4682**	**2.9000e-003**	**0.4711**	**0.1242**	**2.6700e-003**	**0.1269**		**400.8177**	**400.8177**	**9.3000e-003**		**401.0501**

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	86.2597					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**86.4786**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1993	0.1366	1.3675	4.0200e-003	0.4682	2.9000e-003	0.4711	0.1242	2.6700e-003	0.1269		400.8177	400.8177	9.3000e-003		401.0501
Total	**0.1993**	**0.1366**	**1.3675**	**4.0200e-003**	**0.4682**	**2.9000e-003**	**0.4711**	**0.1242**	**2.6700e-003**	**0.1269**		**400.8177**	**400.8177**	**9.3000e-003**		**401.0501**

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	11.0122	67.7322	117.9420	0.2969	20.5887	0.4321	21.0208	5.5168	0.4091	5.9259		30,022.4588	30,022.4588	1.7912		30,067.2398
Unmitigated	11.0122	67.7322	117.9420	0.2969	20.5887	0.4321	21.0208	5.5168	0.4091	5.9259		30,022.4588	30,022.4588	1.7912		30,067.2398

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	203.35	198.45	169.40	566,607	566,607
General Office Building	275.75	61.50	26.25	500,653	500,653
High Turnover (Sit Down Restaurant)	1,271.50	1,583.70	1318.40	1,534,798	1,534,798
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	3,202.50	3,747.75	1893.00	5,423,535	5,423,535
Total	4,953.10	5,591.40	3,407.05	8,025,593	8,025,593

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
Condo/Townhouse	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.476697	0.043889	0.220176	0.142419	0.030478	0.007289	0.024295	0.043166	0.001518	0.001285	0.006419	0.000804	0.001565
General Office Building	0.476697	0.043889	0.220176	0.142419	0.030478	0.007289	0.024295	0.043166	0.001518	0.001285	0.006419	0.000804	0.001565
High Turnover (Sit Down Restaurant)	0.476697	0.043889	0.220176	0.142419	0.030478	0.007289	0.024295	0.043166	0.001518	0.001285	0.006419	0.000804	0.001565
Parking Lot	0.476697	0.043889	0.220176	0.142419	0.030478	0.007289	0.024295	0.043166	0.001518	0.001285	0.006419	0.000804	0.001565
Regional Shopping Center	0.476697	0.043889	0.220176	0.142419	0.030478	0.007289	0.024295	0.043166	0.001518	0.001285	0.006419	0.000804	0.001565

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures 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	0.0917	0.8217	0.6150	5.0000e-003		0.0633	0.0633		0.0633	0.0633		999.9658	999.9658	0.0192	0.0183	1,005.9081
NaturalGas Unmitigated	0.0917	0.8217	0.6150	5.0000e-003		0.0633	0.0633		0.0633	0.0633		999.9658	999.9658	0.0192	0.0183	1,005.9081

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	1970.67	0.0213	0.1816	0.0773	1.1600e-003		0.0147	0.0147		0.0147	0.0147		231.8433	231.8433	4.4400e-003	4.2500e-003	233.2210
General Office Building	1127.4	0.0122	0.1105	0.0928	6.6000e-004		8.4000e-003	8.4000e-003		8.4000e-003	8.4000e-003		132.6350	132.6350	2.5400e-003	2.4300e-003	133.4232
High Turnover (Sit Down Restaurant)	2997.53	0.0323	0.2939	0.2469	1.7600e-003		0.0223	0.0223		0.0223	0.0223		352.6511	352.6511	6.7600e-003	6.4700e-003	354.7467
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2404.11	0.0259	0.2357	0.1980	1.4100e-003		0.0179	0.0179		0.0179	0.0179		282.8364	282.8364	5.4200e-003	5.1900e-003	284.5172
Total		**0.0917**	**0.8217**	**0.6150**	**4.9900e-003**		**0.0633**	**0.0633**		**0.0633**	**0.0633**		**999.9658**	**999.9658**	**0.0192**	**0.0183**	**1,005.9081**

5.2 Energy by Land Use - NaturalGas

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					
Condo/Townhouse	1.97067	0.0213	0.1816	0.0773	1.1600e-003		0.0147	0.0147		0.0147	0.0147		231.8433	231.8433	4.4400e-003	4.2500e-003	233.2210
General Office Building	1.1274	0.0122	0.1105	0.0928	6.6000e-004		8.4000e-003	8.4000e-003		8.4000e-003	8.4000e-003		132.6350	132.6350	2.5400e-003	2.4300e-003	133.4232
High Turnover (Sit Down Restaurant)	2.99753	0.0323	0.2939	0.2469	1.7600e-003		0.0223	0.0223		0.0223	0.0223		352.6511	352.6511	6.7600e-003	6.4700e-003	354.7467
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.40411	0.0259	0.2357	0.1980	1.4100e-003		0.0179	0.0179		0.0179	0.0179		282.8364	282.8364	5.4200e-003	5.1900e-003	284.5172
Total		**0.0917**	**0.8217**	**0.6150**	**4.9900e-003**		**0.0633**	**0.0633**		**0.0633**	**0.0633**		**999.9658**	**999.9658**	**0.0192**	**0.0183**	**1,005.9081**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	72.7119	1.3784	87.9161	0.1542		11.9352	11.9352		11.9352	11.9352	1,249.7279	529.3436	1,779.0715	1.1584	0.0983	1,837.3251
Unmitigated	72.7119	1.3784	87.9161	0.1542		11.9352	11.9352		11.9352	11.9352	1,249.7279	529.3436	1,779.0715	1.1584	0.0983	1,837.3251

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	0.4727					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.2826					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	68.8678	1.3449	85.0098	0.1540		11.9192	11.9192		11.9192	11.9192	1,249.7279	524.1177	1,773.8455	1.1533	0.0983	1,831.9714
Landscaping	0.0888	0.0335	2.9063	1.5000e-004		0.0160	0.0160		0.0160	0.0160		5.2260	5.2260	5.1100e-003		5.3537
Total	**72.7119**	**1.3784**	**87.9161**	**0.1542**		**11.9352**	**11.9352**		**11.9352**	**11.9352**	**1,249.7279**	**529.3436**	**1,779.0715**	**1.1584**	**0.0983**	**1,837.3251**

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	0.4727					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.2826					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	68.8678	1.3449	85.0098	0.1540		11.9192	11.9192		11.9192	11.9192	1,249.7279	524.1177	1,773.8455	1.1533	0.0983	1,831.9714
Landscaping	0.0888	0.0335	2.9063	1.5000e-004		0.0160	0.0160		0.0160	0.0160		5.2260	5.2260	5.1100e-003		5.3537
Total	**72.7119**	**1.3784**	**87.9161**	**0.1542**		**11.9352**	**11.9352**		**11.9352**	**11.9352**	**1,249.7279**	**529.3436**	**1,779.0715**	**1.1584**	**0.0983**	**1,837.3251**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 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

Draft Health Risk Assessment

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Memorandum

Loomis Costco Project
AECOM – Draft Health Risk Assessment

AECOM has prepared this summary to describe the results of the Health Risk Assessment (HRA) for the proposed Costco warehouse retail store and fueling station project, referred to as the project. The HRA has been requested by the Placer County Air Pollution Control District (PCAPCD), for compliance with the California Environmental Quality Act (CEQA), and is consistent with the 1997 Toxics Committee of the California Air Pollution Control Officers Association (CAPCOA). This memorandum describes the proposed project, the approach to the health risk assessment (HRA), and the modeling methodologies used to perform the analysis.

This memorandum addresses the following topics, as listed below by section:

1.0 – Introduction describes the project understanding and the objectives and methodology for the HRA.

2.0 – Emissions Estimates describes the methods used to estimate the emissions of toxic air contaminants (TACs) generated from project construction and operations.

3.0 – Air Dispersion Modeling describes the methods for modeling pollutant dispersion and estimating pollutant concentration contributions from project sources.

4.0 – Health Risk Analysis Methodology provides an overview of the methodology for estimating potential health risks to defined sensitive receptors.

5.0 – Health Risk Analysis Results provides the results of the project cancer risk at the defined sensitive receptors.

6.0 – Cumulative Health Risk provides a discussion of the cumulative risk due to the project and nearby sources.

7.0 – Uncertainties provides a discussion of uncertainties and limitations associated with the Health Risk Analysis.

8.0 – References provides the sources cited in this memorandum.

1.0 Introduction

Project Understanding

The project applicant, Costco Wholesale, proposes to develop the 17.4 acre property located at in the town of Loomis, in Placer County, approximately 25 miles northeast of the city of Sacramento. More specifically, the proposed project site is located at the southeast corner of the Sierra College Boulevard/Brace Road intersection. The proposed project is a warehouse retail store with a fueling station.

The warehouse retail site would sell national brands and private-label merchandise for commercial and personal use. Other goods and services provided would include tire sales and installation, sales of motor vehicle fuel including diesel, optical exams and sales, a photo center and processing, hearing aid testing and sales, food service preparation and sales (including meat and baked goods), alcohol sales and tasting, and propane tank exchanges. During seasonal sales promotions, temporary outdoor sales may occur within the parking field adjacent to the warehouse.

Costco is a membership-only retail/wholesale business. Warehouse and tire center hours are anticipated to be Monday through Friday from 10 a.m. to 8:30 p.m., Saturday from 9:30 a.m. to 6 p.m., and Sunday from 10 a.m. to 6 p.m. The fueling facility is anticipated to operate daily from 5 a.m. to 10 p.m.

The proposed warehouse retail space would be constructed using a steel frame, masonry blocks, and metal paneling supported by a concrete slab on-grade foundation. The warehouse structure would be approximately 33 feet tall and would provide 155,000 square feet of floor space dedicated to retail goods and services. The warehouse would be located near the northern boundary of the project site, while the fueling station would be located on the southwest corner of the site, as shown in **Figure 1**.

The loading dock for the Costco warehouse would be located on the southwest side of the warehouse, away from residential uses located north and east of the project site. A smaller on-grade door would be located on the west side of the building to receive smaller deliveries such as baked goods and other shipments.

The fueling station would be located in the southwest corner of the project site, adjacent to Sierra College Boulevard. The station would include a 7,560-square-foot canopy and a 106-square-foot controller enclosure that would be located on the southern portion of the station's landscape planter. The enclosure's walls would be constructed of steel and painted in earth tones to match the warehouse.

There are three slightly different configuration scenarios being considered for the project, which only affect secondary vehicle entrance points. The three scenarios include the following variations;

- Option A – has a second entrance/exit driveway along Brace Road near the northeast corner of the project site;
- Option B – does not have a second entrance/exit driveway along Brace Road but does have an entrance/exit connection from the southern portion of project site to Granite Drive; anOption C – same as Option A and includes the entrance/exit connection to Granite Drive.

All 3 options will be assessed as part of this HRA.

Project Construction

Construction for the proposed project is anticipated to occur over a six month period. Grading and site preparation would take 2 months to complete. Utility installation, paving, and erection of the structure would follow over a 2-month time frame. Construction would conclude with the application of architectural coatings and installation of landscaping during a 1-month period.

Preparation for construction would begin with the demolition of existing building foundations and grubbing to remove vegetation. Abandoned utilities in the proposed development areas, including a domestic well and other existing features (if encountered), would be removed and the excavation(s) would be backfilled with engineered fill. Debris produced during demolition (e.g., wood, steel, piping, and plastics) would be separated and disposed of off-site. Existing utility pipelines or conduits would be abandoned in place and plugged with nonshrinking cement grout to prevent migration of soil and/or water.

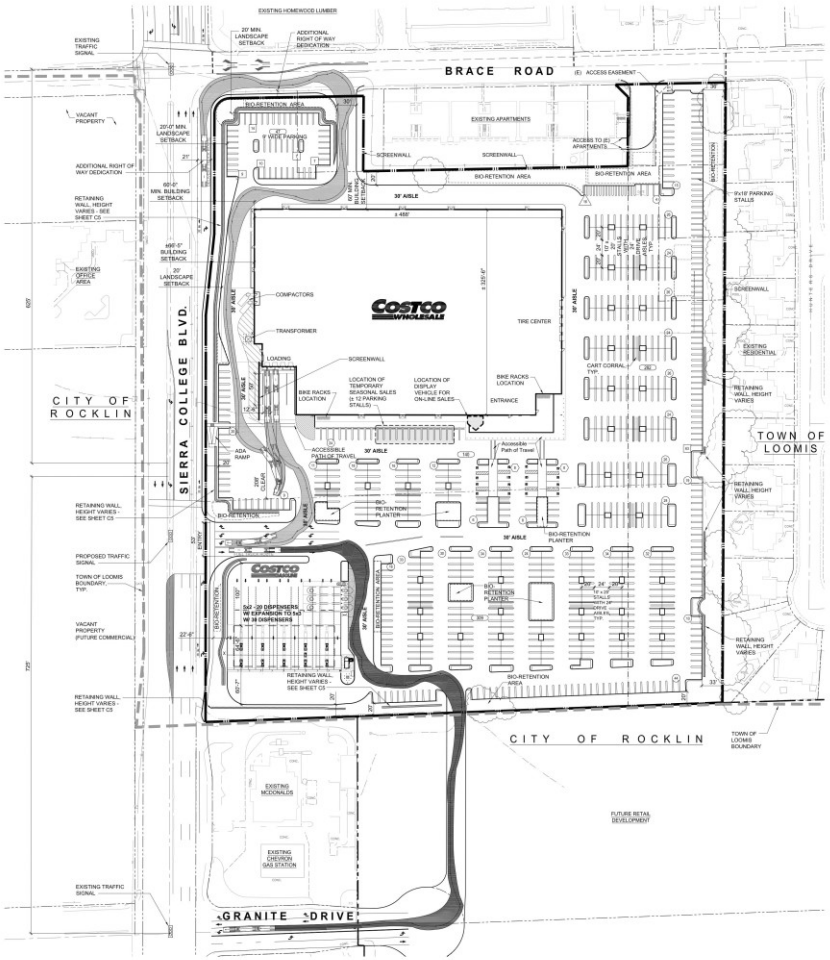
Once this work has been completed, soil on portions of the property would be overexcavated and recompacted to reduce the potential for differential settlement and provide uniform support for the proposed warehouse and associated facilities. According to the preliminary grading plan (Figure 2-9), the finished floor elevation for the warehouse would be approximately 331.50 feet above mean sea level. The warehouse building pad area would be raised as much as approximately 10 feet by fill and would transition to an area of cut as deep as 5 feet. The fueling facility area would be raised approximately 1–5 feet above the existing ground surface. Excavations for deep utilities and the loading dock may exceed 4 feet, and installing the underground storage tanks for the fueling facility would require excavation up to about 20 feet deep.Earthwork would be balanced on-site, with the earth material cut during overexcavation used as fill to establish building pads. No import or export of soil would be necessary to construct the project. Staging and materials storage would occur on the project site.

Project Operation

The proposed project anticipates up to 13 diesel engine trucks delivering goods on a daily basis to the warehouse retail store. The loading bays are planned to be located in the southwest portion of the warehouse, which would be the farthest point of the warehouse from residences. It is anticipated that on average, four of the 13 trucks per day would be equipped with diesel engines powering transport refrigeration units (TRUs). Additional on-site off-road equipment used during project operations, such as forklifts will be battery operated and therefore do not pose an air quality health risk are not included as part of this HRA. No diesel generators are planned to be used as part of this project.

The fueling station would contain four covered fueling bays, each with three two-sided fuel dispensers that would allow up to six vehicles to occupy each island. The station would also have eight stacking lanes, which would allow approximately 32 vehicles to queue for the pumps at any given time. The station would initially have fueling capacity for 24 fuel positions (i.e. dispensers), with the potential to expand to 30 fuel positions as demand warrants. This HRA assumes the maximum anticipated number of fuel dispensers to be 30, which would allow for approximately 30 vehicles to queue for the pumps at any given time. Fuel would be stored in three underground tanks installed along the perimeter of the station. The fueling station is planned for the southwest corner of the project site along Sierra College Boulevard. The proposed project anticipates an average of seven gasoline fuel delivery trucks on a daily basis to the refueling station.

Figure 1: Site Plan



Project Data

Client:	Costco Wholesale 999 Lake Drive Issaquah, WA 98027
Project Address:	Sierra College Boulevard Loomis, CA Town of Loomis

Site Data

Costco Site Area: Right of Way Dedication	17.34 AC (755,498 s.f.) 0.47 AC (20,692 s.f.)
Jurisdiction:	Town of Loomis, CA
Existing Zoning:	GC - General Commercial / RM 5 - Medium Density Residential
Boundary Information:	This plan has been prepared using the Topographic Survey dated October 2016 prepared by Kier & Wright Civil Engineers & Surveyors, Inc.

Building Data

Total:	155, 000 s.f.

Parking Data

9' wide stalls:	110 stalls
10' wide stalls:	652 stalls
Accessible stalls:	16 stalls
Total Parking:	778 stalls (5.0 / 1,000)
5' wide Motorcycle stalls:	16 stalls
Parking Required: (Town of Loomis)	775 5.0 / 1,000

Truck Legend

- Fuel Delivery Truck Route
- Warehouse Delivery Truck Route

Vicinity Map
Scale: N.T.S.

COSTCO WHOLESALE
DBA # P256

DB+A
DAVID BABCOCK + ASSOCIATES
ARCHITECTURE + PLANNING
3301 MT. DIABLO BLVD., SUITE 203
LAFAYETTE, CALIFORNIA 94549
T: 925.283.3070

COSTCO - LOOMIS, CA

CONCEPT SITE PLAN 3.4

SCALE: 1"=60'-0"
OCTOBER 26, 2018

SHEET 1 of 1

Health Risk Background

The U.S. Environmental Protection Agency (USEPA) regulates hazardous air pollutants (HAPs), also known as toxic air contaminants or TACs. TACs may be emitted by stationary, area, or mobile sources. Common stationary sources of TAC emissions include gasoline stations, dry cleaners, and diesel backup generators, which are subject to the requirements of local air districts' permits. The other, often more substantial, sources of TAC emissions are motor vehicles on freeways, on high-volume roadways, or in other areas with high numbers of diesel vehicles, such as distribution centers. Off-road mobile sources are also major contributors of TAC emissions and include construction equipment, ships, and trains.

TACs collectively refer to a diverse group of air pollutants that are capable of causing chronic (i.e., long-duration) and acute (i.e., severe but short-term) adverse effects on human health, including carcinogenic effects. Human health effects of TACs include birth defects, neurological damage, cancer, and mortality. There are hundreds of different types of TACs with varying degrees of toxicity. The health risks of individual TACs vary greatly; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

TACs can be separated into carcinogens and noncarcinogens based on the nature of the effects associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Any exposure to a carcinogen poses some risk of contracting cancer. Noncarcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

Air pollution does not affect every individual in the population in the same way, and some groups are more sensitive than others to adverse health effects. Land uses such as residences, schools, daycare centers, hospitals, and nursing and convalescent homes are considered most sensitive to poor air quality because the population groups associated with these uses are more susceptible to respiratory distress or, for residential receptors, their exposure time is greater than that for other land uses. Therefore, these groups are referred to as sensitive receptors.

The project site is located in approximately 35 kilometers northeast Sacramento in the Placer County Air Pollution Control District (PCAPCD). The project site is adjacent to residential and commercial buildings. Multi-family dwelling units are located north of the project site with single-family homes located to the east of the project site. The nearest sensitive receptors are within the multi-family units to the north (situated south of Brace Road, between Starlight Lane and Sierra College Boulevard) and single-family homes to the east (along Hunters Drive), both located approximately 50 feet from of the project site boundary.

Objective and Methodology

The purpose of this HRA is to assess potential TAC emission impacts associated with daily operation of the proposed project. PCAPCD has requested that the HRA be prepared as part of the response to comments on the Draft Environmental Impact Report (DEIR) to determine the potential risk on the exposure of sensitive receptors to toxic air contaminants (TACs) emission from the fueling station and other operational sources with TAC emissions. Analyses were conducted consistent with guidance and methodologies from local, regional, state, and federal agencies, including CAPCOA (2009), the California Air Resources Board (ARB) (2017), the Office of Environmental Health Hazard Assessment (OEHHA) (2015), and the U.S. Environmental Protection Agency (EPA) (2017).

Consistent with CEQA requirements and guidance provided by CAPCOA, the analysis evaluated the following:

1. *Health risk and hazard impacts of operational emissions* from the project-related construction and operational emissions on existing and future off-site sensitive receptors (residents and schools) located within 2 kilometers of the project site. **Figures 2 and 3** show the locations of receptors included in the modeling for the proposed project for the far and near fields, respectively.

The results are summarized in Section 5.

Project Sources

This HRA evaluates the following sources of air quality emissions and exposures:

1. **Construction Emissions:** The proposed project's construction-related emissions affecting local sensitive receptors. Emissions sources include construction equipment and vehicle trips.

2. **Operational Emissions from Truck Deliveries**: The proposed project operational emissions associated with trucks traveling to and from the site (within ¼ mile) and idling during loading/unloading activities affecting local sensitive receptors. Emission sources include diesel engine exhaust from trucks while idling and exhaust from diesel engines powering trailer refrigeration units (TRUs).

3. **Operational Emissions from Gasoline Deliveries**: The proposed project operational emissions associated with gasoline fuel trucks traveling within ¼ mile of the site and idling at the loading dock. The ¼ mile extent is comparable or slightly more conservative with other California air district guidance, such as the Bay Area Air Quality Management District (BAAQMD) (2017) that recommends 1,000 feet from project boundary or within.

4. **Operational Emissions from New Customer Vehicle Trips**: The proposed project operational emissions associated with new vehicle traffic from customer vehicles traveling within ¼ mile of the site. Emissions associated with customer vehicles in queue (up to 30 simultaneously during the peak hour) are included.

5. **Operations Emissions from Refueling Station**: The proposed project operational emissions associated with loading, storage, and spillage of gasoline and refueling of vehicles affecting local sensitive receptors. There will be no diesel or propane dispensers at the fueling station. Emission sources from a refueling station according to CAPCOA guidance include:

    a. **Bulk Transfer Losses (Loading)** – emissions that occur when a cargo tank truck unloads gasoline to the storage tanks at the gasoline station. Storage tank vapors are emitted from the vent pipe during the initial transfer period.

    b. **Pressure Driven Losses (Breathing)** – gasoline vapors emitted from the storage tank vent pipe due to temperature and pressure changes within the storage tank vapor space.

    c. **Fueling and Hose Permeation**– gasoline vapors that are emitted during the refueling process at the vehicle/nozzle interface.

    d. **Spillage** – emissions that occur from spills during vehicle fueling.

Figure 2: Receptors within 2 kilometers of the Proposed Project

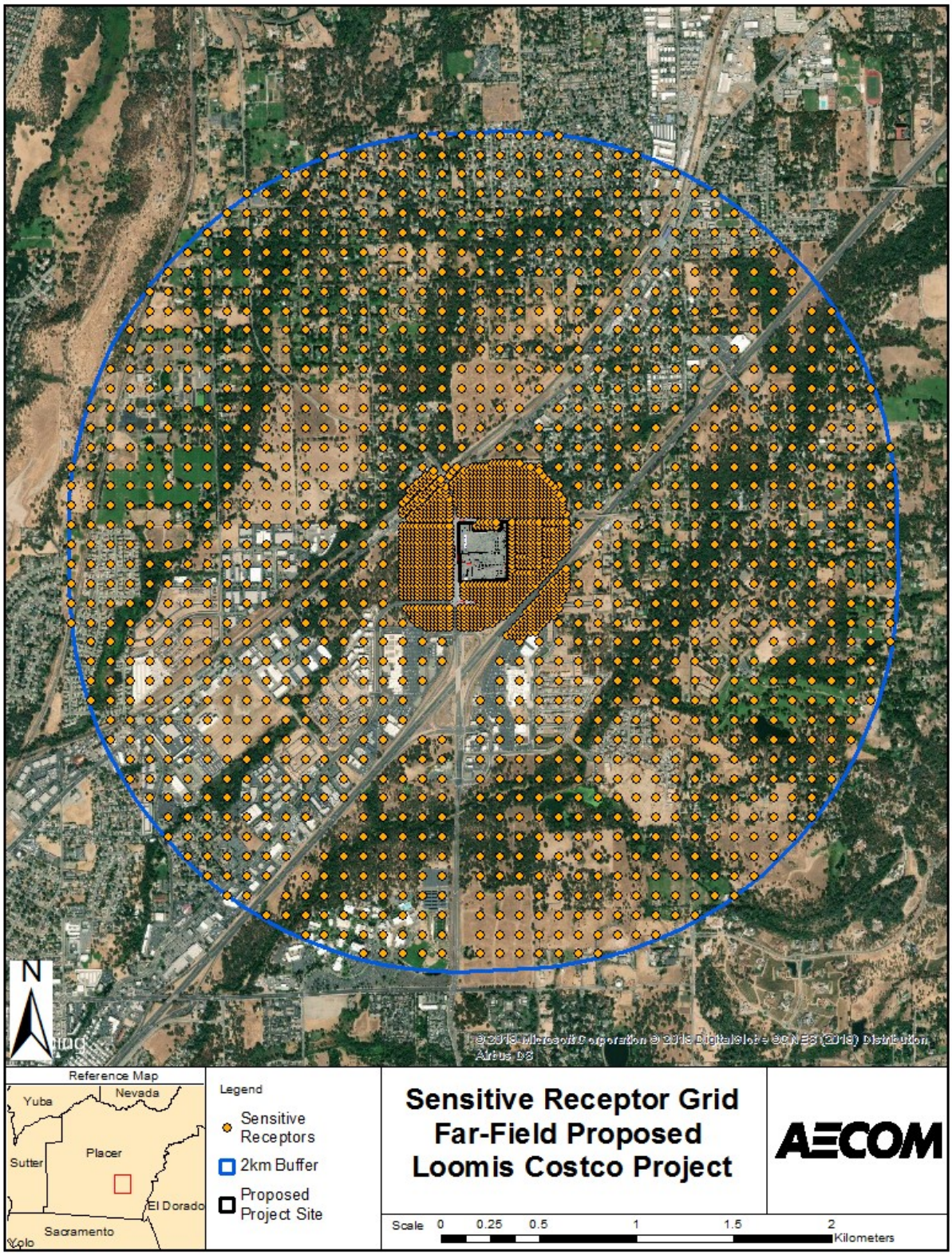
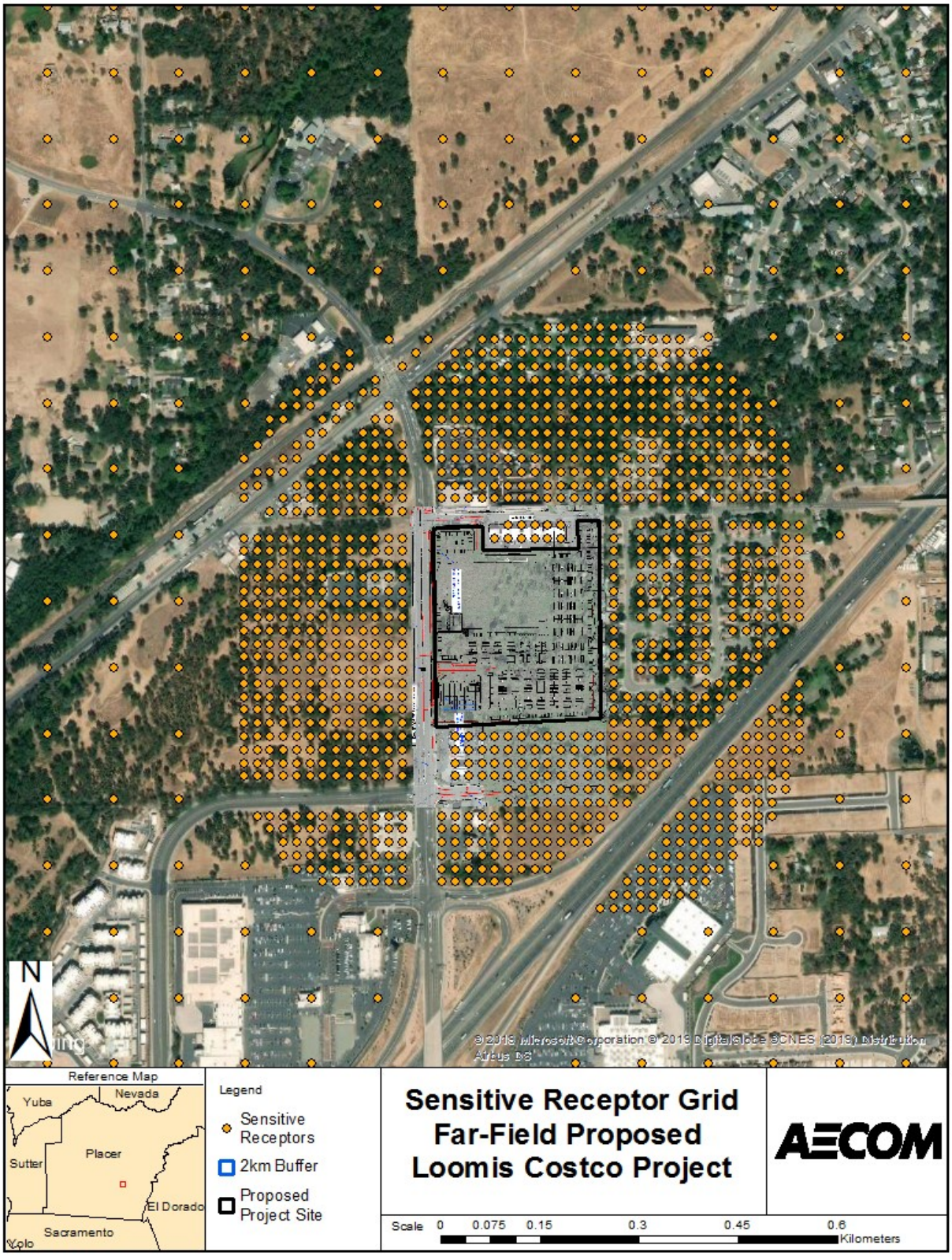


Figure 3: Near-Field View of Receptors around the Proposed Project



2.0 Emissions Estimates

This HRA evaluates diesel particulate matter (DPM) (assumed to be equivalent to $PM_{2.5}$ exhaust) from delivery trucks and components of gasoline (benzene, toluene, xylenes and methyl tertiary-butyl either (MTBE)) associated with operation of the gas station. These emissions estimates are then used to determine concentrations of each pollutant at sensitive receptor locations in order to evaluate the excess cancer risk a receptor is exposed to as a result of the proposed project. This section identifies the methodologies used to estimate pollutant emissions.

The proposed project construction and operational air quality emissions were quantified according to guidance and methods from CAPCOA, ARB, and EPA as previously referenced above. The process for determining the parameters and assumptions used to model these emissions, along with the modeling methods, are described below. Attachment A of the Criteria Air Pollutant Analysis (CAPA) contains the detailed emissions output and a summary of the emissions used in this analysis is provided in **Attachment A** of this document.

Calculation Methodologies for Construction Emission Sources

Construction of the proposed project would generate emissions of TACs (i.e., diesel particulate matter) from a variety of sources, including off-road construction equipment, on-road vehicles, earthmoving activities, architectural coating activities, and paving activities. Construction emissions are dependent on the following project information:

- Schedule and duration of construction phases
- Types and sizes (site acreages and building square footages) of land uses to be developed

The following list of construction activities used CalEEMod defaults to estimate the emissions since project-specific information was not provided. The default parameters used are detailed in **Attachment A**, but include the following:

- Off-road construction equipment and activity schedules
- Construction-related haul-truck traffic volumes
- Construction worker traffic volumes
- Earthmoving activities (e.g., cut/fill, grading)

Construction of the project is estimated to take approximately six months to complete, with various activities occurring as described in Section 1. There are two proposed construction scenarios;

1. One that involves providing an access road that connects Granite Road with the southern portion of the project site (Options B and C), and
2. The other does not include this access road (Option A).

The equipment used in the construction of the project is described in the Criteria Air Pollutant Analysis (CAPA) contained in Attachment A. Construction emissions were calculated for each year and were converted from total tons/year to grams per second (g/s) for the $PM_{2.5}$ analysis and pounds per year (lb/year) for the excess cancer risk analysis for each construction phase. As discussed in Section 3 below, the g/s emissions assumed 1,846 hours during the six months of construction and as such the tons/year conversion was based on this number of hours/year. The tons/year to lb/year conversion is not time related.

Figures 4 and **5** show the location of the off- and on-road construction sources for each of the construction scenario options.

Off-Road Construction Equipment

Off-road construction equipment would generate exhaust-related emissions of TACs. To calculate emissions, the number and types of construction equipment required for each construction phase were identified, along with the hours of operation per day, horsepower, and the load factor for each respective piece of project-specific equipment. For those pieces of equipment that project-specific information was unavailable, CalEEMod default parameters were selected. Pursuant to BAAQMD's guidance, the California Emissions Estimator Model (CalEEMod) was used to estimate emissions resulting from off-road construction equipment.

CalEEMod contains emission factors from ARB's off-road equipment emissions estimator model, OFFROAD 2011. Both EPA and the State of California have set emissions standards for new off-road equipment engines, ranging from Tier 1 to Tier 4. Tier 1 emission standards were phased in between 1996 and 2000, and Tier 4 interim and final emission standards for all new engines were phased in between 2008 and 2015. The emission factors for the engines were based on the fleet average, which includes all tier engines for the calendar year of the analysis. Default assumptions for the equipment type, hours, horsepower and load factors are noted above contained in CalEEMod were used to quantify emissions. The CalEEMod default assumptions typically are conservative, providing a reasonable upper boundary for potential construction emissions. The analysis performed used CalEEMod Version 2016.3.2, which is the most current version of the CalEEMod. The CalEEMod outputs provide estimates of $PM_{2.5}$ emissions from diesel exhaust, brake wear, tire wear, and running losses. These emissions were conservatively assumed to equal DPM as well.

On-Road Construction Vehicles

On-road construction sources include construction-worker vehicles, material delivery trucks, and on-site work trucks. CalEEMod was used to estimate emissions resulting from these on-road vehicles. $PM_{2.5}$ exhaust emissions from DPM as well as reactive organic gas (ROG) emissions from gasoline exhaust are also estimated by CalEEMod. As noted above, $PM_{2.5}$ exhaust was assumed to be DPM. Default assumptions for parameters such as construction-worker vehicles and on-site work trucks, material delivery trips, construction worker trips, trip distance, and vehicle type were estimated using CalEEMod. The CalEEMod emissions were scaled by trip length within the modeling domain divided by CalEEMod trip distance to determine the amount of emissions within the modeling domain the project. In addition to estimating air pollution emissions using CalEEMod, emission factors from EMFAC2017 and OFFROAD2017 were used. As noted above, annual tons/year output from CalEEMod was converted to lb/year.

Table 1 summarizes the construction emissions used in the HRA.

TABLE 1
UNCONTROLLED CONSTRUCTION RELATED EMISSIONS (LB/YEAR)

Source	ROG	Exhaust $PM_{2.5}$
Off-Site (Mobile Vehicles)	52.34	4.10
On-Site (Off-Road Equip/Vehicles)	2,055.20	180.64

Notes: lb/year = pounds per year; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; ROG = reactive organic gases
Emissions shown are for Options B and C, which are identical and present the worst-case construction emissions scenario inclusive of additional improvements providing an access road that connects Granite Road with the southern portion of the project site.

Figure 4: TAC and Diesel Emission Source Locations Associated with Construction of Proposed Project Including Connection to Granite Road (Option B/C)

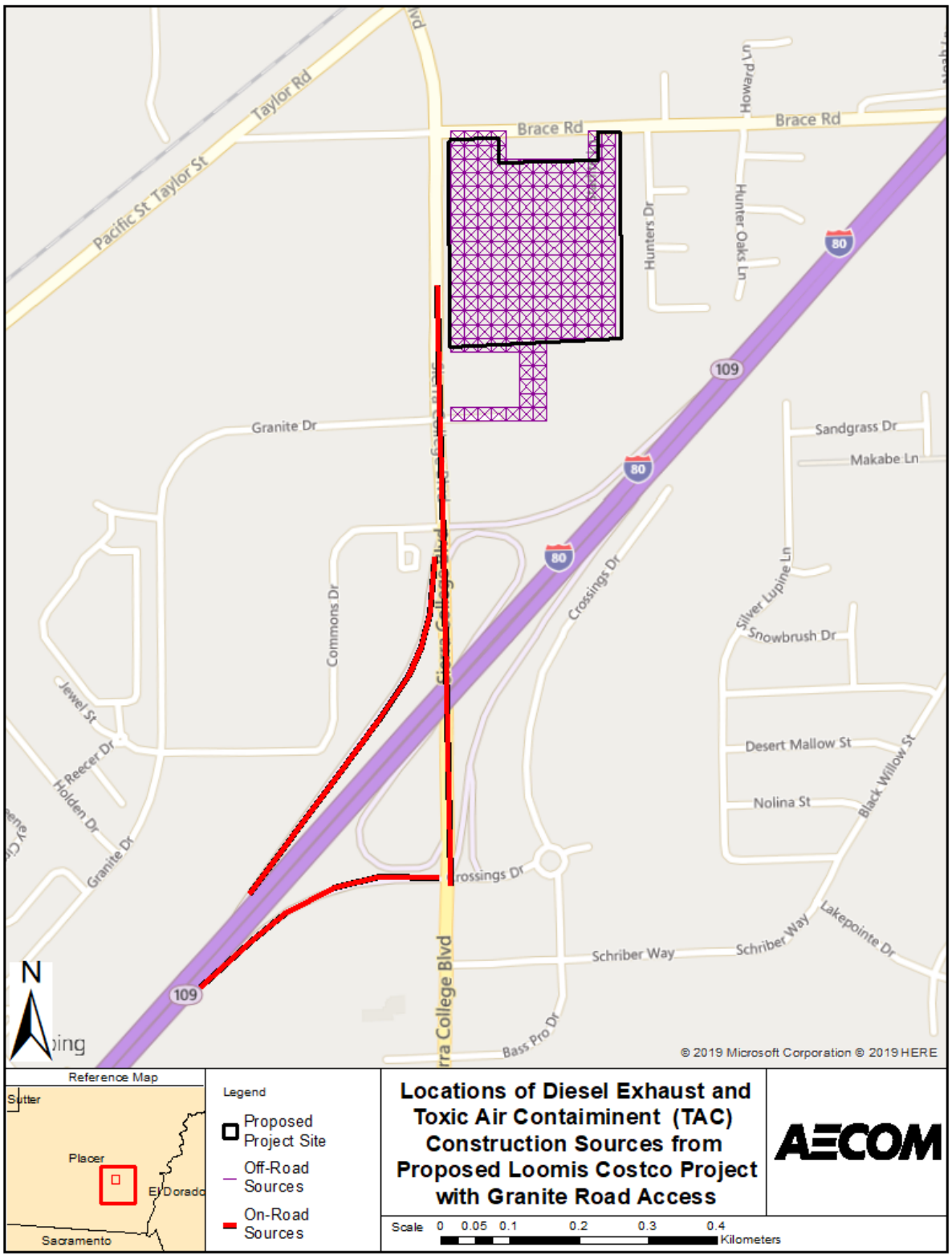
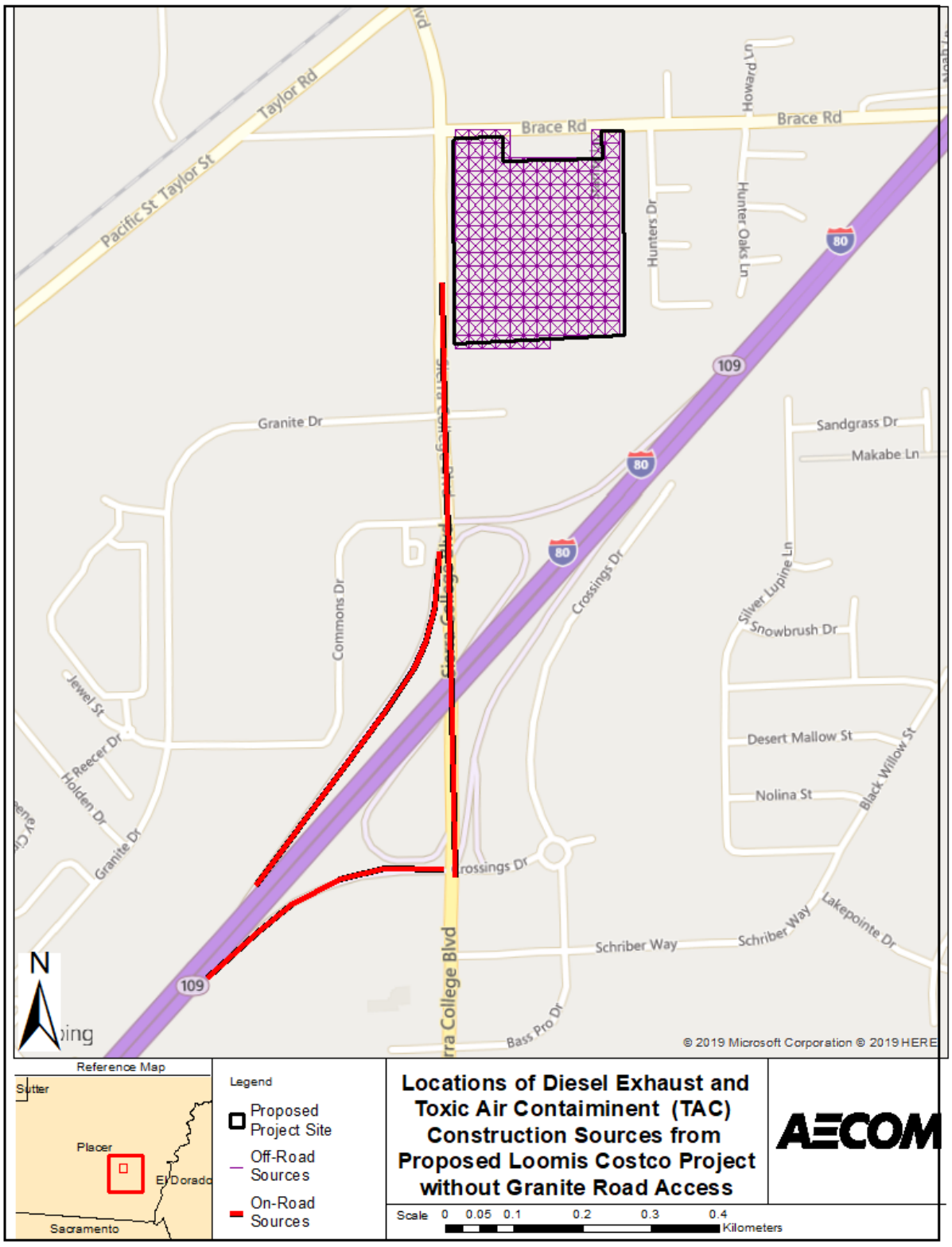


Figure 5: TAC and Diesel Emission Source Locations Associated with Construction of Proposed Project without a Connection to Granite Road (Option A)



Calculation Methodologies for Operational Emission Sources

After construction of the proposed project, long-term operations would generate emissions of TACs from a variety of sources, including stationary sources, volume sources, and mobile sources.

Operational emissions have been calculated for each of the proposed project scenarios. TACs will not be emitted from the warehouse as the equipment used inside the warehouse such as forklifts will be electric. The assumptions and methods used to conduct the calculations are summarized below.

Stationary Sources

CAPCOA guidance for Gasoline Service Stations (CAPCOA 1997) recommends that gas venting from loading and breathing processes be characterized in the model as point sources. It was assumed that for each gas pump (15 gas pumps that equates to 30 fuel positions) would be included as a single point source for each pump. **Figure 6** depicts the proposed location of the vent stack emissions due to loading and breathing. To account for emissions associated with fueling (refueling) and spillage processes, these sources were characterized as volume sources in the model, consistent with the CAPCOA guidance. **Figure 6** shows the proposed location of the volume sources that consider the length and width of typical vehicles. Emission factors and methods prescribed by CARB's Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities (ARB, 2013) were used to estimate emissions for the bulk transfer (loading) and pressure driven losses (breathing processes) for underground tanks. It was assumed that the annual gasoline throughput for the proposed project would be 20 million gallons per year. **Table 2** summarizes the ROG emission factors used in the modeling for these processes.

Idling truck emissions were calculated using diesel heavy duty truck idling emission factors taken from ARB's motor vehicle emission factor model, EMFAC 2017. Idling emission rates are provided in grams per vehicle per day and were converted to grams per vehicle per idle-hour using idle hours for selected categories provided in Table 4.4-9 of ARBs EMFAC 2017 Technical Documentation Volume III (ARB, 2018a). It is assumed that there will be nine trucks per day without TRUs, and four trucks per day that would include TRUs, for a total of 13 warehouse delivery trucks per day. Based on the annual gasoline throughput of 20,000,000 gallons per year and tanker truck capacity, approximately seven trucks per day will deliver gasoline to the gas station. This HRA assumes seven gasoline delivery trucks per day. Idling emission rates are in grams per hour, and emissions were estimated assuming each cargo delivery truck with or without TRUs would idle for up to 10 minutes (5 minutes upon arrival and 5 minutes prior to departure) and each gasoline delivery truck would idle up to 10 minutes (5 minutes upon arrival and 5 minutes prior to departure). In addition, emissions associated with the diesel-powered TRUs were estimated using emission rates from the ARB OFFROAD 2017 emissions inventory for a 25 horsepower Truck TRU. The TRU emission rates are provided in tons per day and were converted to grams per horsepower-hour to calculate daily emissions, which assumed each of the four TRUs on-site daily would operate for up to one hour.

TABLE 2
ROG EMISSION FACTORS FOR GASOLINE STATIONS

Current Emission Factors (lbs/1000 gal)[1]	Process
0.15	Bulk Transfer (Loading)
0.024	Pressure Driven Losses (Breathing)
0.09783[2,3]	Fueling and Hose Permeation (Refueling)
0.24	Spillage

[1] Emission factors obtained from table I-I in CARB's Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities (2013).
[2] Fueling is based upon 80% On-board Refueling Vapor Recovery (ORVR) and 20% non-ORVR vehicles obtained from Figure 1 from CARB's Staff Report: Initial Statement of Reasons (2018b)
[3]Hose permeation emissions added to fueling sources.

To account for emissions associated customer vehicles, these sources were characterized as volume sources in the model. **Figure 6** shows the proposed location of the volume sources (green lines) that consider the area where these vehicles would be waiting in queue to refuel. Emissions from the idling of passenger vehicles in queue at the fueling station were calculated using emission factors from EMFAC2017. Because EMFAC only provides extended idle emissions rates for heavy duty trucks, idle emissions for passenger vehicles were computed using the methods recommended by ARB for light-duty vehicles. Running emissions rates for the lowest speed bin (in this case, 10 miles per hour) for light- and medium-duty vehicles and converting these rates to hourly emissions. This analysis assumed that the peak hour would have up to 30 vehicles in queue constantly for a peak hour. Similar to traffic studies which often assume that peak hour is approximately 10 percent of daily volume, this relationship was assumed for the queue line, thus assuming that the peak hour emissions from idling vehicles in queue at the fueling station represented 10 percent of the daily emissions from queuing.

Mobile Sources

Mobile-source emissions for worker and customer trips were calculated using vehicle miles traveled (VMT) from the TIS (Kittelson & Associates, 2019) and used CalEEMod. As described for construction on-road vehicles, CalEEMod Version 2016.3.2 incorporates EMFAC2014 mobile-source emission factors. On-road emissions from the cargo and fuel delivery trucks and the TRUs while in transit were calculated using EMFAC 2017 and OFFROAD 2017, respectively. **Figures 7** through **12** show the anticipated road routes of customer and worker traffic (for three configurations), warehouse, and gas deliveries (for two configurations), respectively. The CalEEMod emissions were scaled by trip length within the modeling domain divided by CalEEMod trip distance to determine the amount of emissions within modeling domain the project. **Table 3** summarizes the annual operational emissions used in the HRA. It is assumed that all new customer and worker mobile emissions are from gasoline vehicles, while diesel vehicles include delivery trucks to the warehouse and gasoline delivery trucks.

TABLE 3
UNCONTROLLED OPERATION RELATED EMISSIONS (LB/YEAR)

Source	ROG	Exhaust Diesel PM
Diesel Vehicles	--	24.36
Gasoline Vehicles	753.55	--
Notes: lb/year = pounds per year; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; ROG = reactive organic gases		

Table 4 summarizes the gasoline station emission rates used in the HRA.

TABLE 4
GASOLINE STATION RELATED ROG EMISSIONS

Process	Benzene	Toluene	Xylenes	MTBE
Loading	9.00E+00	3.00E+01	3.00E+01	3.30E+02
Breathing	1.44E+00	4.80E+00	4.80E+00	5.28E+01
Refueling	5.97E+00	1.96E+01	1.96E+01	2.15E+02
Spillage	4.80E+01	3.84E+02	1.15E+02	5.28E+02
Totals	6.43E+01	4.38E+02	1.70E+02	1.13E+03
Notes: lb/year = pounds per year; Annual throughput assumes 20,000,000 gallons of gasoline per year.				

Figure 6: TAC and Diesel Emission Source Locations Associated with Proposed Project

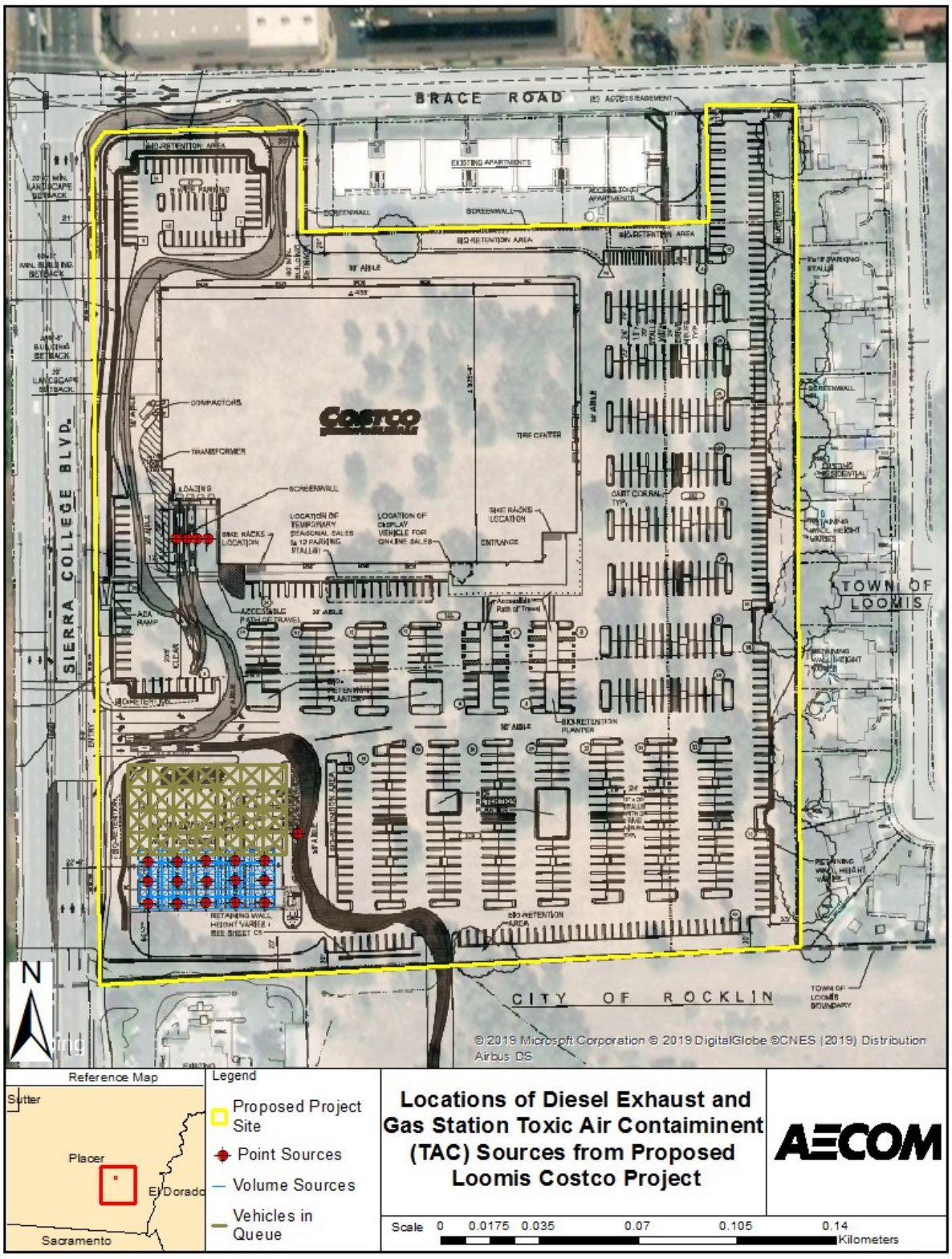


Figure 7: TAC and Diesel Emission Source Locations Associated with On-Road Customer and Worker Vehicles with the Proposed Project – Option A

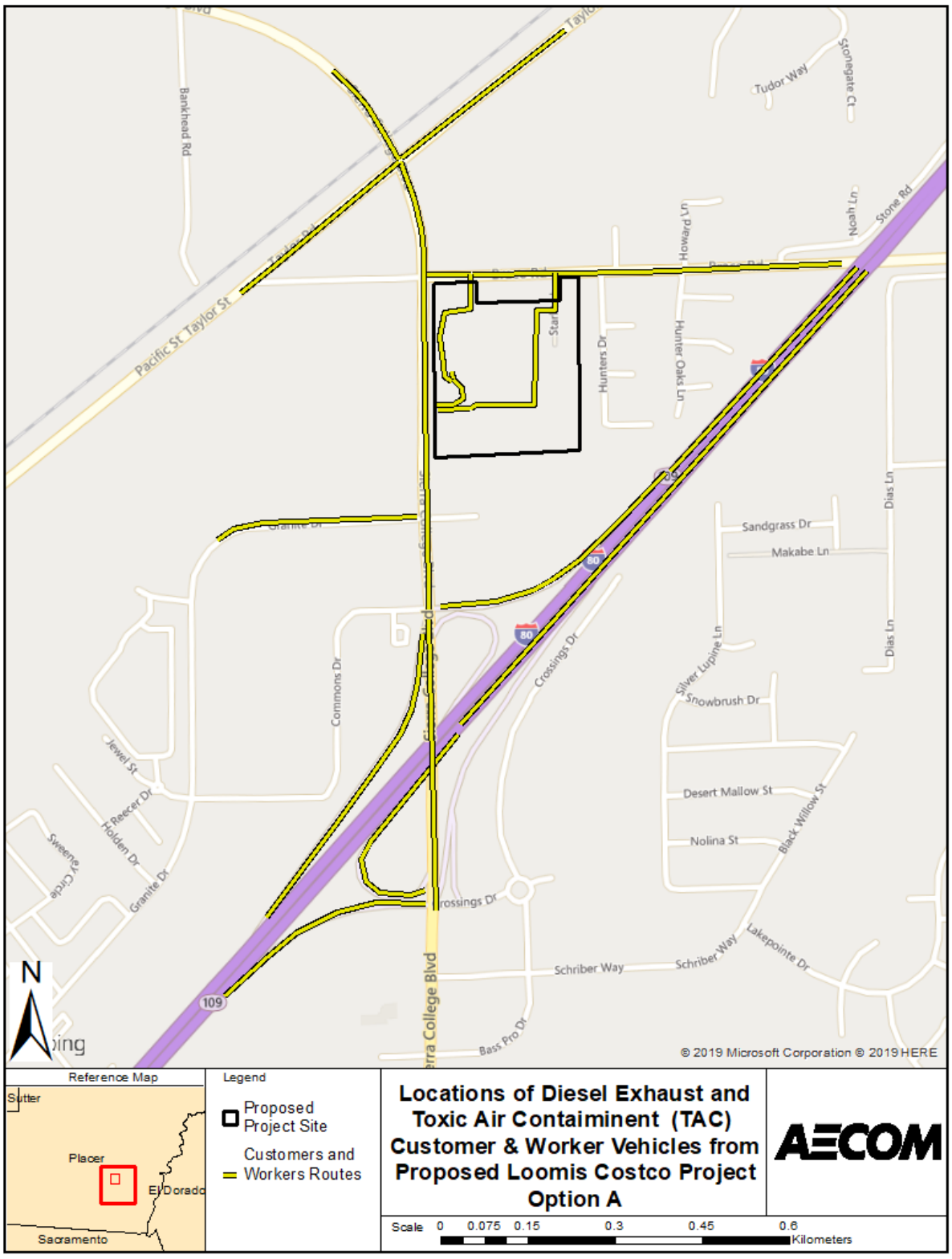


Figure 8: TAC and Diesel Emission Source Locations Associated with On-Road Customer and Worker Vehicles with the Proposed Project – Option B

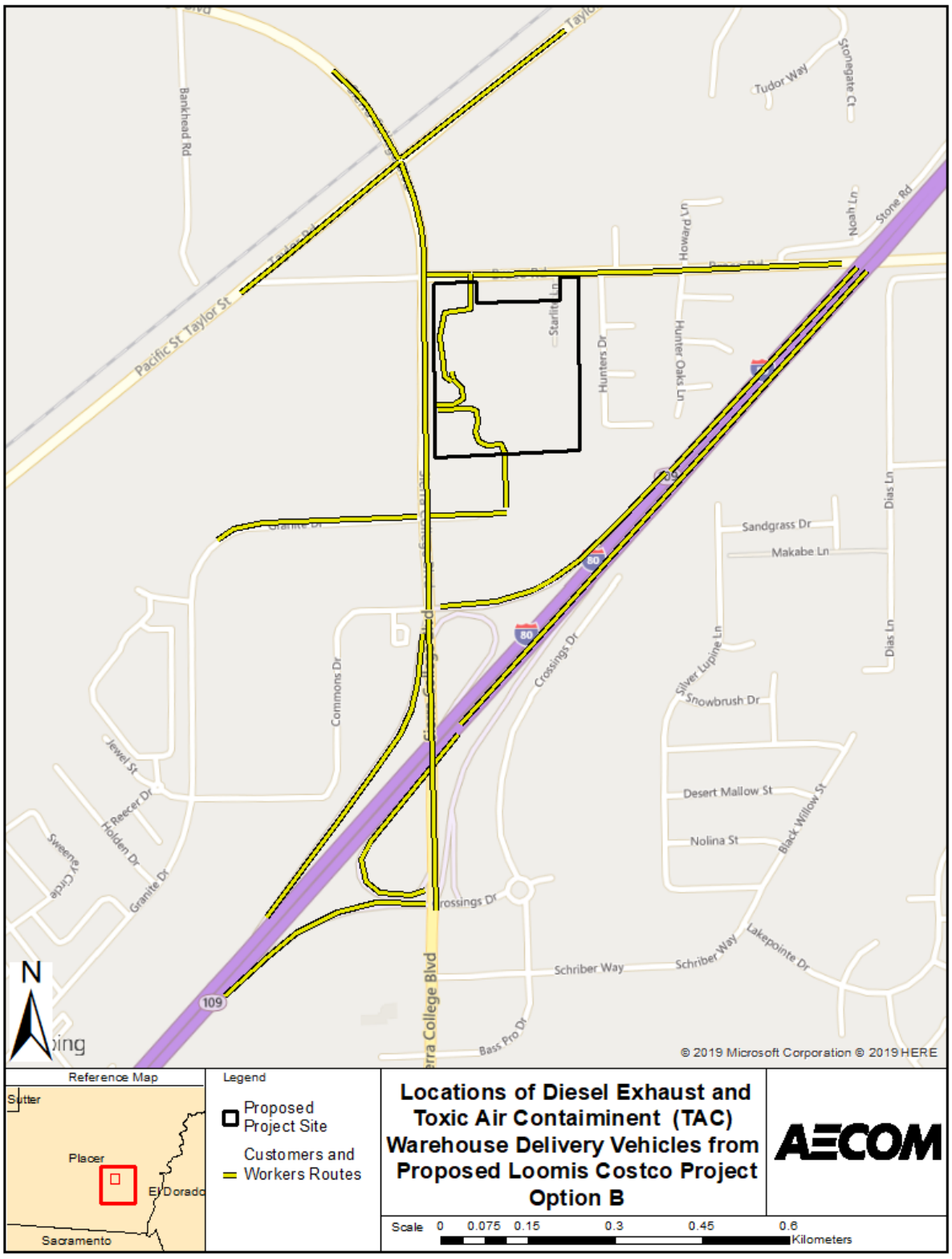


Figure 9: TAC and Diesel Emission Source Locations Associated with On-Road Customer and Worker Vehicles with the Proposed Project – Option C

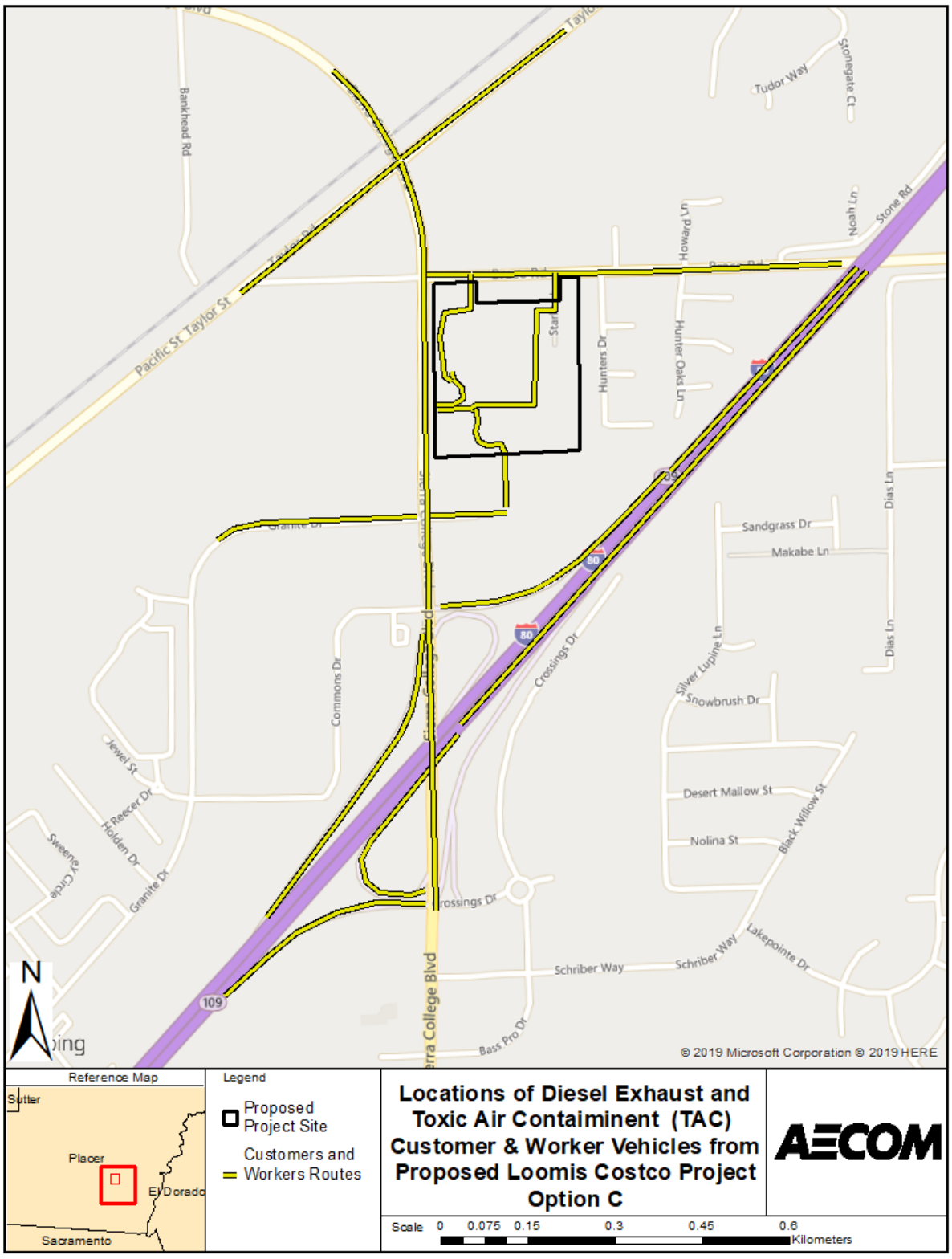


Figure 10: TAC and Diesel Emission Source Locations Associated with On-Road Warehouse Delivery Vehicles with the Proposed Project – Options A, B and C

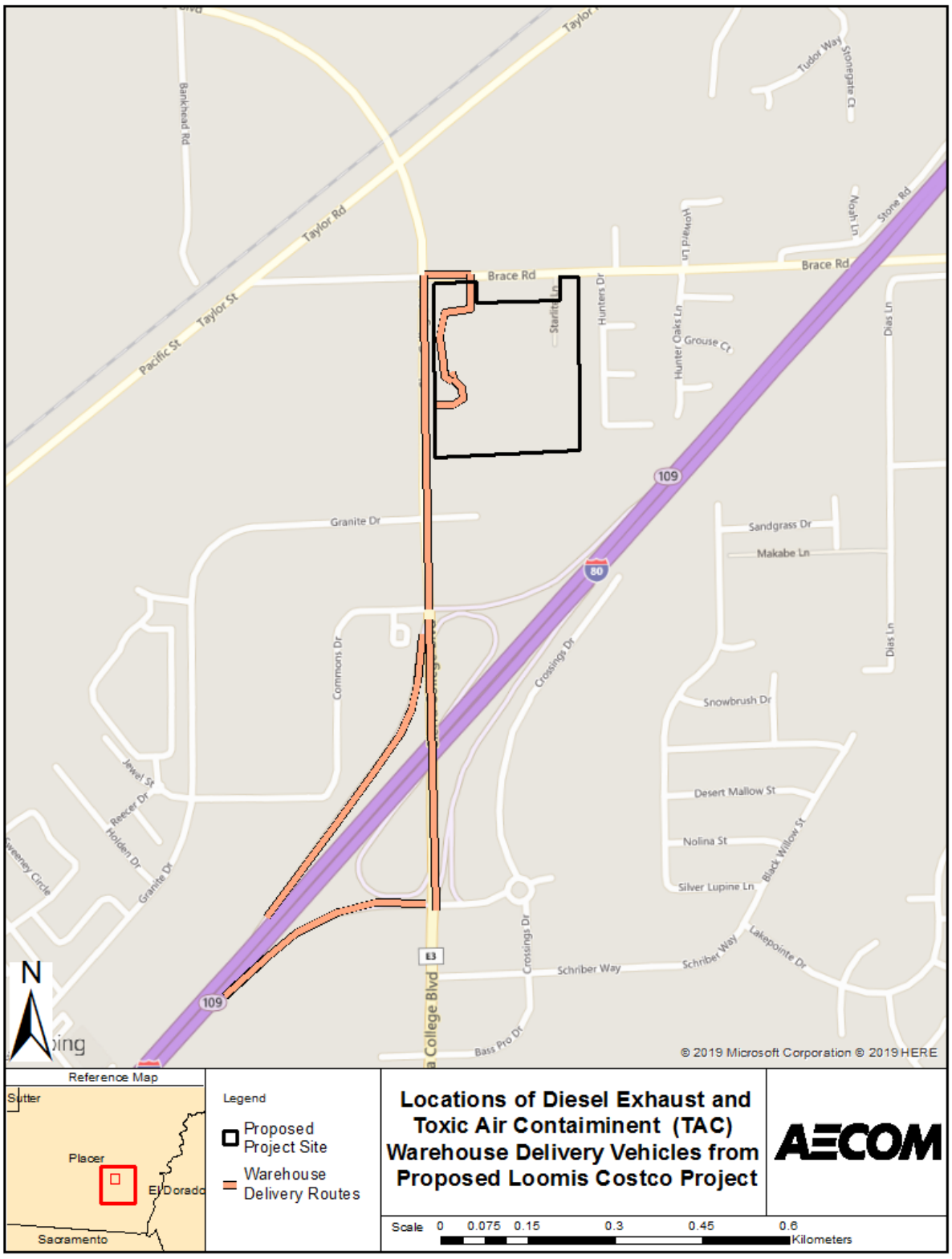


Figure 11: TAC and Diesel Emission Source Locations Associated with On-Road Gasoline Delivery Vehicles with the Proposed Project – Option A

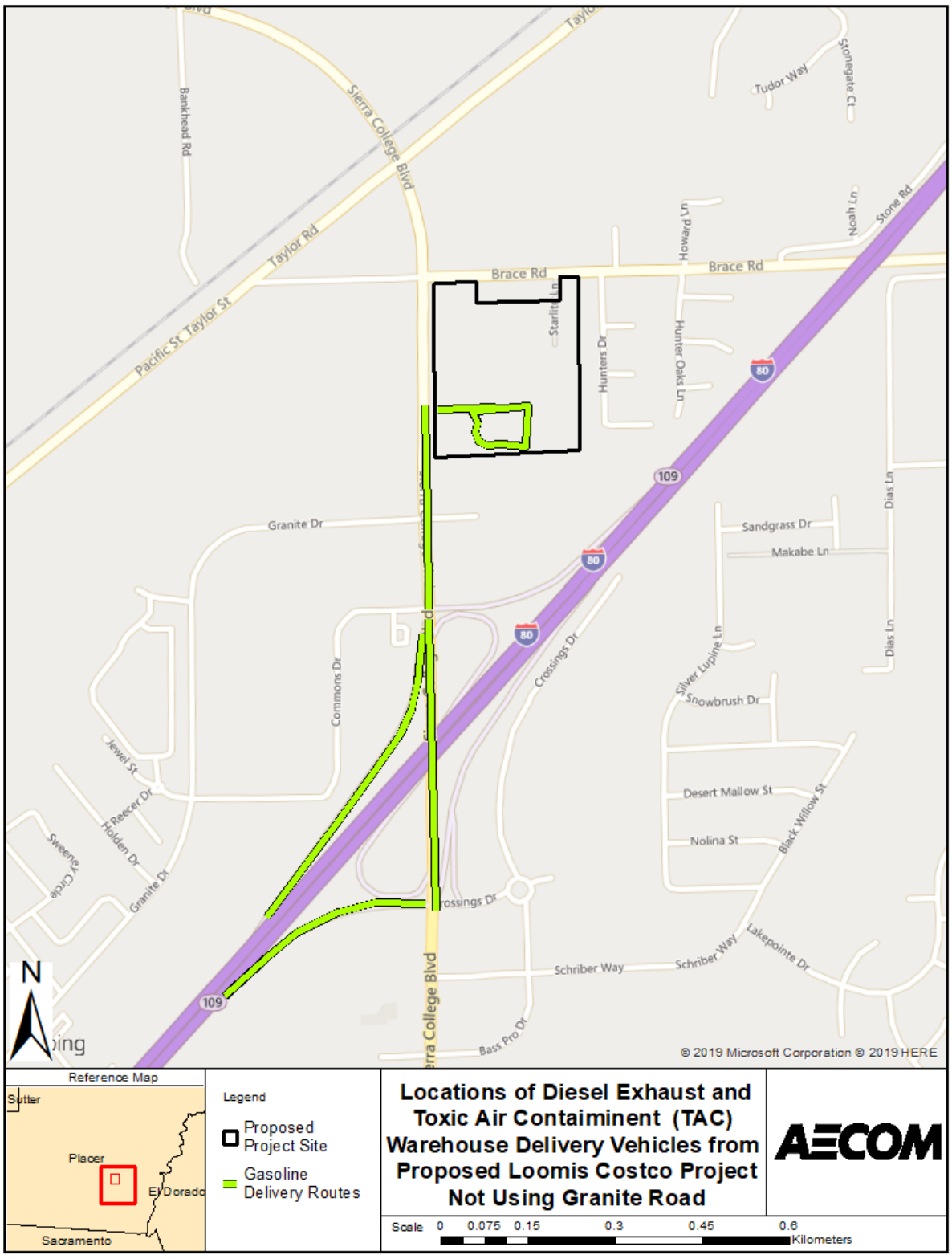
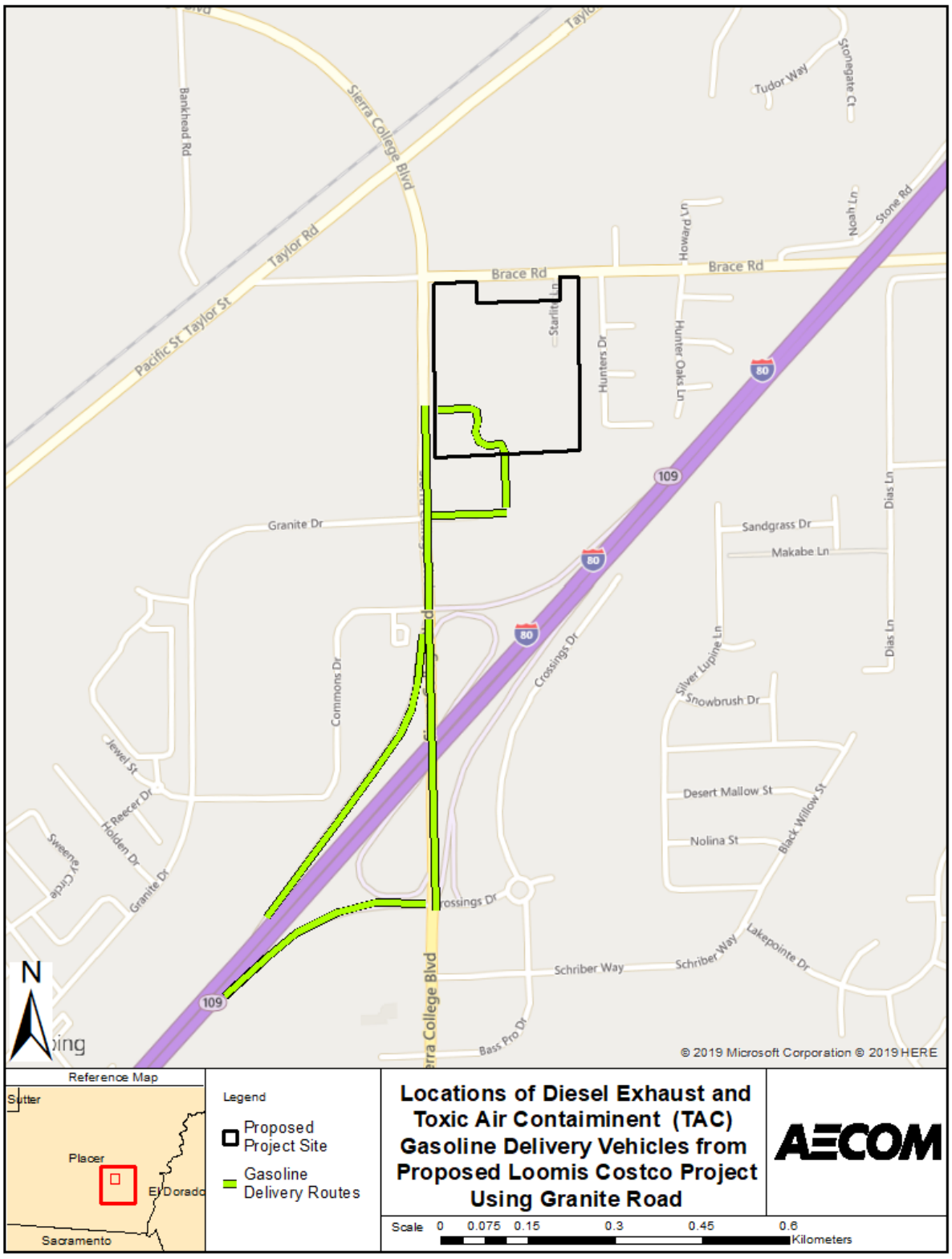


Figure 12: TAC and Diesel Emission Source Locations Associated with On-Road Gasoline Delivery Vehicles with the Proposed Project – Options B and C



3.0 Air Dispersion Modeling

The American Meteorological Society/USEPA Regulatory Model (AERMOD) dispersion model (Version 19191) was used to estimate pollutant concentrations at specific distances from project emission sources using hourly meteorological data. At the direction of PCAPCD, the Sacramento International Airport meteorological station (2009-2014) of hourly meteorological data was used.

Meteorological Data

The topography around Loomis, CA is generally flat with some rolling hills to the south and a relatively large lake (Folsom Lake) to the southeast. More elevated terrain features are situated to the west, north and northeast of the area with several mountain passes to the northeast. A wind rose using near-surface (10-meter) wind measures from the Sacramento International Airport from 2009-2014 is shown in **Figure 13**. **Figure 14** shows the location of the Sacramento International Airport relative to the proposed project site.

Figure 13
Sacramento International Airport Wind Rose (2009-2014)

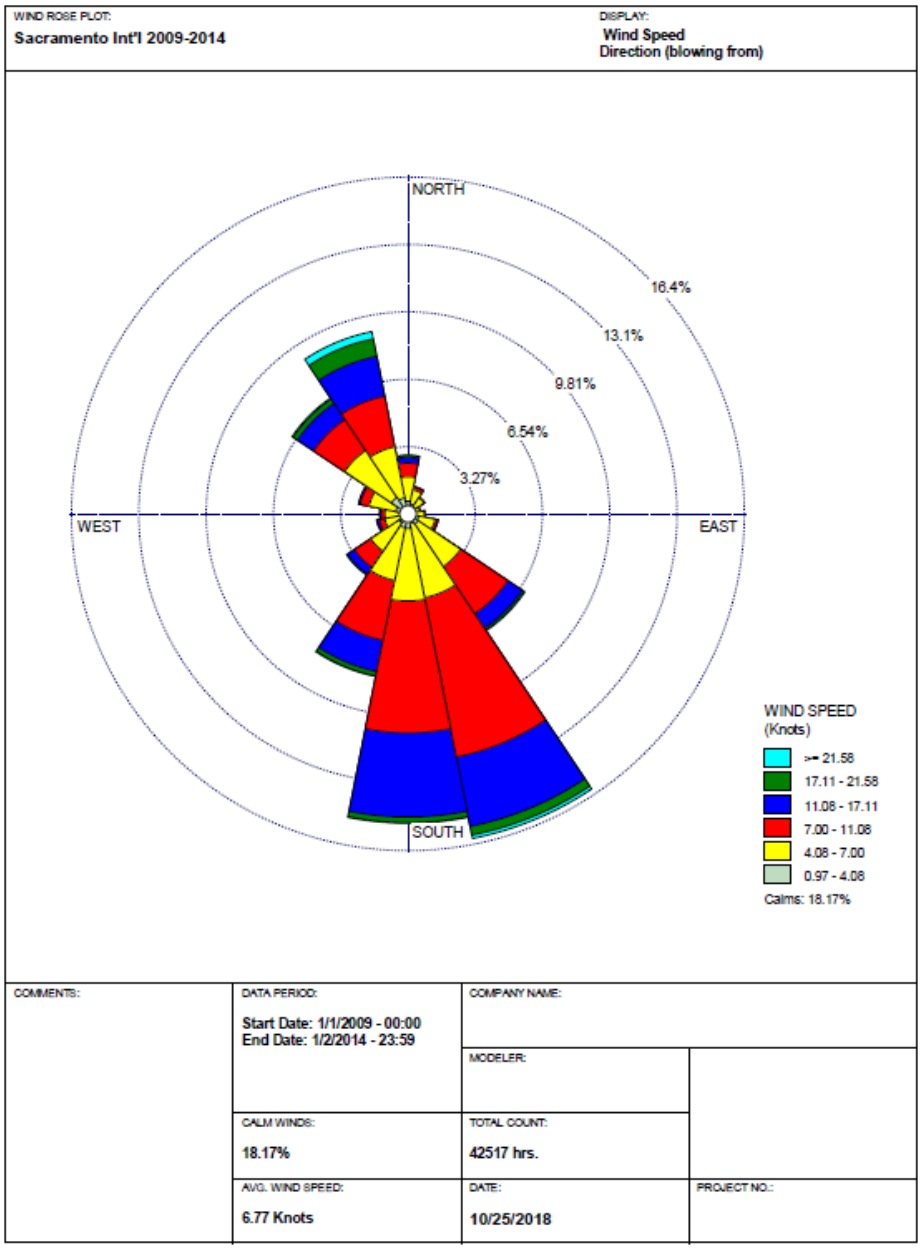
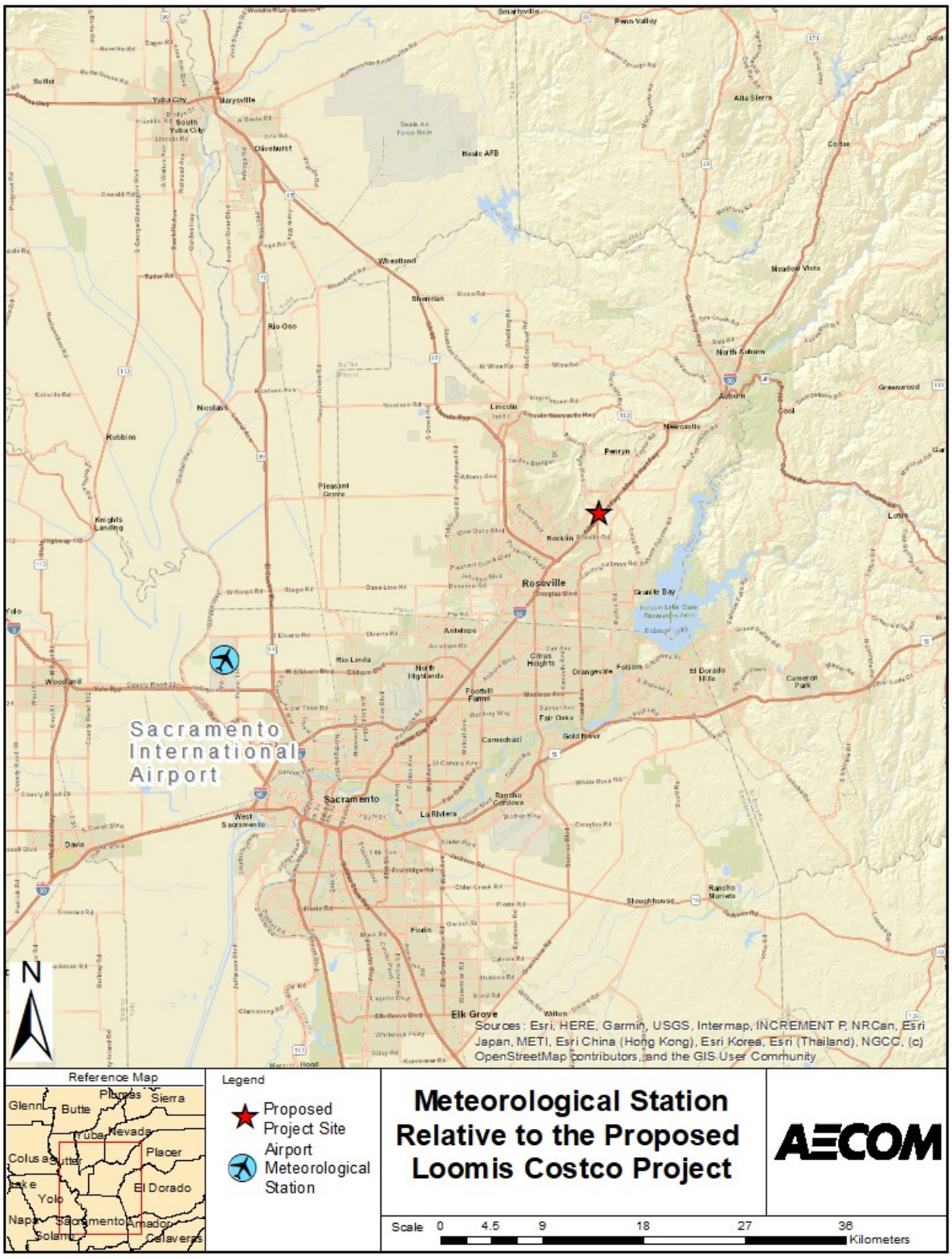


Figure 14

Locations of Meteorological Stations



Receptor Locations

Sensitive receptor locations for the proposed project are shown in **Figures 2 and 3**. The receptors were assigned a flagpole height of 1.8 meters for the ground level residences. CAPCOA recommends a receptor spacing of 25 meters for cases with emissions from short stacks or vents and that have a close property line. Given the proximity to residential dwellings along the east and northern properly line, 20-meter receptor intervals were used to adequately assess health risks in the near field. This 20-meter receptor spacing was used from the proposed project boundary line outward to 1,000 feet. This is consistent with other California air district guidance, such as the Bay Area Air Quality Management District (BAAQMD) (2017) since PCAPCD does not have receptor placement guidance. Beyond 1,000 feet and out to 2 kilometers, a receptor spacing of 100 meters was used as the area of maximum exposure typically occurs close to the source(s). This approach, of using a nested receptor grid with fine receptor spacing near the source to a coarser resolution farther away is consistent with CAPCOA and other California air district guidance.

Terrain elevations were obtained from commercially available digital terrain elevations developed by the U.S. Geological Survey by using its National Elevation Dataset (NED). The NED data provide terrain elevations with 1-meter vertical resolution and 10-meter (1/3 arc-second) horizontal resolution based on a Universal Transverse Mercator (UTM) coordinate system. The U.S. Geological Survey specifies coordinates in North American Datum 83, UTM Zone 10. Lakes Environmental software was used to process the NED data and assign elevations to the receptor locations and sources.

Construction Sources

Off-road construction equipment was represented by adjacent volume sources covering the footprint of the project site. The release height of these sources was set to 5 meters and the initial vertical dimension was set to 2.3 meters. The lateral dimensions of each volume source were set to 20 meters, which is consistent with South Coast Air Quality Management District guidance (SQAQMD, 2008) for adjacent volume sources over an area greater than 5 acres. PCAPCD does not have guidance pertaining to model set up options.

On-road emissions from construction-worker vehicles, haul trucks, and material delivery trucks, and on-site work trucks traveling to and from the project site were also modeled as adjacent volume sources. The release height of these sources was set to 4.25 meters and the initial vertical dimension was set to 2.3 meters. The initial lateral dimension varies depending on roadway width. In coordination with the project sponsor and the transportation consultant, Kittelson and Associates, it was assumed that construction-worker vehicles, and material delivery trucks would approach the project site from a single direction. All traffic would come from I-80 would exit onto Sierra College Boulevard and turn north until arriving at the proposed project site. All traffic exiting the project site would enter Sierra College Boulevard and travel south on Sierra College Boulevard to the southbound on-ramp toward I-80. On-road traffic within 1,000 feet of the Project site was modeled. **Figures 4** and **5** illustrate the proposed construction on-road vehicle routes modeled for the two construction options described earlier.

Construction is anticipated to occur Monday through Friday from 8 a.m. to 5 p.m. (1,170 hours over the 6-month construction phase period). As such, these hours were modeled in AERMOD using the EMISFACT HRDOW keywords. This would include construction diesel particulate matter emissions.

Operational Sources

Operational emission sources evaluated in the dispersion modeling include bulk transfer (loading), pressure driven losses (breathing), fueling/hose permeation and spillage processes associated with the fueling station, along with delivery trucks idling and exhaust from diesel engines powering TRUs and on-road vehicles. Modeling assumed loading and breathing processes as point sources, while refueling and spillage were included as adjacent volume sources. The stack height used for the point source modeling of loading and breathing processes was 12 feet. The exhaust gas temperature used was 65°F for loading and 60°F for breathing, which are defined by CAPCOA for underground tanks. A mass emission rate and subsequent gas exit velocity were derived based on formulas provided by ARB that incorporate the emission factors (described in Section 2.0), annual gasoline throughput and

diameter of the release point (which is recommended by CAPCOA to be 2 inches). The modeled stack parameters are summarized in **Table 2**. Velocity calculations are provided in **Attachment B**.

Modeling assumed the emissions from refueling and spillage associated with the project site's fueling station as adjacent volume sources. To be consistent with the CAPCOA guidance, the release height of the refueling sources was set to 1 meter and the initial vertical dimension was set to 1.86 meters. The initial lateral dimension was determined by taking width of the proposed fueling station canopy (160 feet) and dividing that evenly across 5 volume sources. Spillage was represented in the model using the same locations and dimensions of the refueling volume sources, but with a release height of 0.0 meters, effectively at ground level. For the vehicles in queue waiting to refuel, adjacent volume sources were used to characterize these emissions in the model. The release height was set to 1.7 meters and the initial vertical dimension was set to 0.79 meters. The initial lateral dimension was determined by taking the width of the all the proposed queue lanes together and dividing that evenly across 7 volume sources.

Modeling parameters used to characterize emissions associated with diesel truck idling were based on guidance provided in CAPCOA Workshop's Health Risk Assessments and Land Use presentation (2010). The guidance provides a high vertical or horizontal exhaust release from a point stack. This HRA conservatively assumes that all exhaust parameters from delivery trucks associated with the proposed project would have high horizontal releases. The exhaust parameters used in this HRA for delivery trucks are listed in **Table 5**. The location of the truck emissions was determined based on a typical semitrailer length as defined by the California Department of Transportation (2018). A semitrailer has a maximum length of 48 feet. The location of the delivery truck stacks included in this modeling were located 48 feet away from the delivery bay as the trucks would be positioned with the truck cab farthest from the bay and the trailer closest. A sensitivity analysis was conducted to determine the worst-case location of the truck with a TRU in the model. A 1 g/s emission rate was used along with the stack parameters listed in **Table 5**. Of the four idling truck locations, the worst-case position was located closest to the warehouse building and farther from Sierra College Boulevard. Therefore, the truck with a TRU and the TRU stack were both positioned at the truck bay closest to the warehouse building.

In addition, CAPCOA provides point stack parameters to use in the modeling of TRU emissions sources. The exhaust parameters for the TRU sources are provided in **Table 5**. The location of the TRU emission uses the same methodology described above for the location of the truck emissions, which is approximately 48 feet from the delivery bays given that the location of the exhaust vent/stack would be at the front of the trailer.

Modeling assumed the on-road emissions from operational vehicles associated with the project site as adjacent volume sources. The release height of customer and worker traffic sources was set to 1.7 meters and the initial vertical dimension was set to 0.79 meters. The initial lateral dimensions vary depending on roadway width. For truck deliveries, both to the warehouse and gasoline, the release for these sources was set to 4.25 meters and the initial vertical dimension was set to 2.3 meters. The initial lateral dimensions vary depending on roadway width. On-road traffic within 1/4 mile of the project site was modeled based on inbound and outbound traffic routes outlined in the TIA. **Figures 7** through **12** illustrate the proposed operational on-road vehicle routes modeled for each option. The EMFAC TOG Speciation profile was used to model TACs from vehicles as shown in **Table 6**.

TABLE 5
MODELING PARAMETERS FOR TAC SOURCES

Point Sources						
Source	Model IDs	Stack Orientation	Release Height (m)	Temperature (K)	Exit Velocity (m/s)	Diameter (m)
Gasoline Loading	GAS_L1-L15	Capped[1]	3.66	291.48	0.0071	0.051
Gasoline Breathing	GAS_B1-B15	Capped[1]	3.66	288.71	0.0021	0.051
Non-TRU Delivery Truck	TRUCK1-3	Horizontal[1]	3.84	366.00	51.71	0.100
TRU Delivery Truck	TRUCKTRU	Horizontal[1]	3.84	366.00	51.71	0.100
TRU	TRU	Vertical	3.96	501.00	49.00	0.044
Gasoline Delivery Truck	TRUCKGAS	Horizontal[1]	3.84	366.00	51.71	0.100

Volume Sources				
Source	IDs	Release Height (m)	Initial Sigma-Y (m)	Initial Sigma-Z (m)
Gasoline Spillage	SPILL1-60	0.00	4.00	1.86
Gasoline Refueling	REFUEL1-60	1.00	4.00	1.86
Vehicles in Queue	QUEUE 1-28	1.70	1.86	0.79

[1] For capped and horizontal stacks, AERMOD conducts internal computations that suppress the plume momentum. See Section 6.1 of EPA's AERMOD Implementation Guide (USEPA 2018).

Table 6
Proposed EMFAC GasOline Tog speciation

	EMFAC Gasoline TOG Speciation
Toxic Compounds	**(% of TOG)**
Acetaldehyde	0.28%
Acrolein	0.13%
Benzene	2.47%
1,3-Butadiene	0.55%
Ethylbenzene	1.05%
Formaldehyde	1.58%
Hexane	1.60%
Methanol	0.12%
Methyl Ethyl Ketone	0.02%
Naphthalene	0.05%
Propylene	3.06%
Styrene	0.12%
Toluene	5.76%
Xylenes	4.80%
Notes: EMFAC = Emission Factors; TOG = total organic gases Source: EMFAC2017 Model	

4.0 Health Risk Analysis Methodology

Pollutant Concentrations

Emissions from the above sources were run in AERMOD to determine air pollutant concentrations at sensitive receptor locations. AERMOD was run using unit emissions. Each source group was modeled assuming emissions of 1 gram per second (g/s) divided by the number of sources for point sources or 1 g/s divided by the number of volume

sources. The unitized AERMOD results for each source group are output in µg/m^3 per g/s [(µg/m^3)(g/s)$^{-1}$]. Maximum hourly and period-average plot files generated by AERMOD as described above were input to HARP2 with corresponding TAC emission rates for the project operational emissions to calculate project pollutant concentration contributions. These concentrations were then used to estimate the acute and long-term effects of TACs on nearby sensitive receptor locations.

Receptor Exposure and Health Risk Calculations

Exposure factors were used to calculate the dose associated with exposure to the estimated unit concentration results obtained using AERMOD. ARB created the HARP2 software to assist in the development of emissions inventories, dispersion modeling, and risk assessment. For this project, HARP2 was used solely to estimate cancer risk via HARP2's Air Dispersion Modeling and Risk Tool (ADMRT), Version 19121; ADMRT was developed to encapsulate the exposure factors and guidance of the 2015 OEHHA Health Risk Assessment (OEHHA, 2015). AECOM evaluated the 30-year cancer risk for resident receptors through the inhalation, soil ingestion, mother's milk, and homegrown produce pathways, using the OEHHA-Derived Method. Factors that affect the dose that a receptor would receive include but are not limited to age-specific daily breathing rates as well as exposure time, frequencies, and duration. The general formula for calculating residential inhalation risk is as follows:

$$\mathbf{RISK_{inh\text{-}res} = DOSE_{air} \times CPF \times ASF \times ED/AT \times FAH}$$

Where:

$RISK_{inh\text{-}res}$ = Residential inhalation cancer risk
$DOSE_{air}$ = Daily inhalation dose (milligrams/kilogram [mg/kg]-day)
CPF = Inhalation cancer potency factor (mg/kg-day^{-1})
ASF = Age sensitivity factor for a specified age group (unitless)
ED = Exposure duration (in years) for a specified age group
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

The inhalation risk was calculated in HARP2 using the OEHHA 2015 recommended default values for these parameters:

CPF = Substance-specific
ASF = 10 for 3rd trimester of pregnancy to age 2, 3 for age 2 to 16, 1 for age 16 to 30
ED = 0.25 years for 3rd trimester, 2 years for age 0 to 2, 7 years for age 2 to 9, 14 years for age 2 to 16, 14 years for age 16 to 30
AT = 70 years
FAH = 1.0 (no adjustment)

The daily inhalation dose is defined as:

$$\mathbf{DOSE_{air} = C_{air} \times \{BR/BW\} \times A \times EF \times 10^{-6}}$$

Where:

$DOSE_{air}$ = Dose through inhalation (mg/kg-day)
C_{air} = Concentration in air (µg/m^3)
{BR/BW}= Daily Breathing rate normalized to body weight (Liters/kilogram body weight - day)
A = Inhalation absorption factor (unitless)
EF = Exposure frequency (unitless), days/365 days
10^{-6} = Micrograms to milligrams conversion, liters to cubic meters conversion

The daily inhalation dose will be calculated in HARP2 using OEHHA 2015 recommended default values for these parameters:

C_{air} = Concentration as calculated from AERMOD

{BR/BW} = OEHHA derived method (i.e. 95th percentile) estimates (361 for 3rd trimester of pregnancy, 1090 for age 0 to 2, 745 for age 2 to 16, 335 for age 16 to 30)
A = 1
EF = 0.96 (350 days/365 days in a year for a resident)

Non-cancer health risks for chronic exposure (a one-year average exposure and an 8-hour average chronic non-cancer health impact from repeated 8-hour exposure) and acute exposure (one-hour average) were calculated by HARP2 using the hazard index (HI) approach for the receptors and toxic substances emitted from the project.

For each TAC, the hazard quotient (HQ) was calculated by dividing the predicted exposure from the model by the reference exposure level (REL) for the substance. The HQs were then summed to calculate the HQ. Because substances may affect different target organ systems, such as the pulmonary or gastrointestinal systems, the HIs were calculated separately for each target organ system, and the highest HI was used to characterize the potential health risks.

The cancer potency factors and RELs used are consistent with the current values published by CARB (2018c). The RELs are intended to represent exposure levels below which adverse health effects do not occur. Therefore, an HI below one indicates that the project will not cause adverse health risks.

HARP2 Output Options

Maximum impact locations include the maximum exposed individual resident (MEIR) and the maximum exposed individual worker (MEIW). The off-site location with the highest estimated impact level for acute exposure is the Point of Maximum Impact (PMI). The PMI typically occurs on or near the property line, where air toxic concentrations are highest. The MEIR is the off-site location of a residence that has the highest estimated impact for each health effect. The MEIW is conservatively assumed to occur at the PMI.

The following HARP2 options were used for the risk analysis to estimate impacts at the PMI, the MEIR, and the MEIW:

- 30-year Resident Cancer Risk – RMP Using the Derived Method
- 9-year (child resident) Cancer Risk – RMP Using the Derived Method
- Worker Cancer Risk – OEHHA Derived Method
- Chronic Hazard Index – OEHHA Derived Method
- 8-hour Average Chronic Noncancer Health Impact – OEHHA Derived Method
- Acute Hazard Index

HRA Results

Health risks are provided in terms of cancer and non-cancer risks, where the non-cancer risks are further divided into chronic (long-term and 8-hour) and acute (short-term) risks. Health risks were evaluated for each of the three configuration options of the proposed project.

Cancer Risk

The HRA included estimates of health risks associated with long-term (multi-year) exposures resulting from emissions of carcinogens. The maximum individual excess cancer risk is an estimate of the highest increased cancer risk an off-site individual can expect from a 30-year exposure to emissions of toxic substances from the facility. None of the TACs listed in Section 2.0 are multi-pathway TACs for cancer risk, therefore the HARP2 model calculates the individual excess cancer risk by summing the contributions due to the inhalation pathway only. The only multi-pathway toxic air contaminants emitted by the facility are benzene (blood), MTBE (kidney, liver, eye) and toluene (central nervous system, reproductive) for non-cancer chronic health effects; these toxics are not multi-pathway carcinogens.

Option A

Table 7 presents the locations and cancer risks for the off-site MEIR and the MEIW for the proposed project Option A scenario. At the MEIR, cancer risk is calculated on a 30-year basis for an adult, and on a 9-year basis for a child, to account for variable residence times. Cancer risk for the MEIW is calculated on a 25-year exposure basis assuming most workers will be present during the same hours as gas station operation. Cancer risks are below the significance level of 10 in a million at the residential and worker receptors. For construction the 8-hour worker period was assumed to be 8 a.m. to 4 p.m. to overlap with construction emissions and for operations the 8-hour worker period was assumed to be 5 a.m. to 1 p.m. to overlap with gasoline dispensing and delivery truck traffic.

Table 7
Summary of Cancer Risks (Option A)

Phase	Cancer Risk (in a Million)		
	30-Yr Resident (MEIR)	9-Yr (Child)	25-Yr (Offsite Worker) (MEIW)
Construction	4.22	4.22	0.12
Operations	2.76	2.05	4.05
Total Cancer Risk	6.98	6.27	4.17
Significance Threshold	10.0	10.0	10.0
Exceed Threshold?	No	No	No

Notes: units are in micrograms per cubic meter.
1 MEIR Receptor Location: 655924.60 E, 4297230.73 N
2 MEIW Receptor Location: 655884.60 E, 4296930.73 N

The locations of the MEIR and MEIW for cancer risk are shown in **Figure 15** for the proposed project Option A scenario. The MEIW is located south of the southwestern property boundary. The MEIR is located north of the property. The 30-year cancer risk at the MEIR and 25-year cancer risk at the MEIW by chemical is presented in **Table 8**. **Figures 15** and **16** illustrate the cancer risk above 1 in a million for residential receptors and for workers using contour plots, respectively. These figures are only presented for Option A as this is the controlling scenario with the highest cancer risk out of the three options. The aerial extent of the cancer risk exceeding 1 in a million for Options B and C would be smaller than Option A.

Table 8
MEIR and MEIW Cancer Risks by Substance (Option A)

TAC	Cancer Risk (in a million)						
	Project Phase	Diesel Particulate Matter	Benzene	Toluene	Xylenes	MTBE	Total
MEIR Cancer Risk	Construction	4.22E+00	1.17E-05	0.00E+00	0.00E+00	0.00E+00	4.22E+00
	Operations	1.25E+00	1.02E+00	0.00E+00	0.00E+00	2.74E-01	2.54E+00
MEIW Cancer Risk	Construction	1.21E-01	2.05E-06	0.00E+00	0.00E+00	0.00E+00	1.21E-01
	Operations	5.93E-01	2.54E+00	0.00E+00	0.00E+00	7.18E-01	3.85E+00

Option B

Table 9 presents the locations and cancer risks for the off-site MEIR and the MEIW for the proposed project Option B scenario. At the MEIR, cancer risk is calculated on a 30-year basis for an adult, and on a 9-year basis for a child, to account for variable residence times. Cancer risk for the MEIW is calculated on a 25-year exposure basis assuming most workers will be present during the same hours as gas station operation. Cancer risks are below the significance level of 10 in a million at the residential and worker receptors. For construction the 8-hour worker period was

assumed to be 8 a.m. to 4 p.m. to overlap with construction emissions and for operations the 8-hour worker period was assumed to be 5 a.m. to 1 p.m. to overlap with gasoline dispensing and delivery truck traffic.

Table 9
Summary of Cancer Risks (Option B)

Phase	Cancer Risk (in a Million)		
	30-Yr Resident (MEIR)	9-Yr (Child)	25-Yr (Offsite Worker) (MEIW)
Construction	3.96	3.96	0.10
Operations	1.67	1.21	3.47
Total Cancer Risk	5.63	5.17	3.57
Significance Threshold	10.0	10.0	10.0
Exceed Threshold?	No	No	No

Notes: units are in micrograms per cubic meter.
1 MEIR Receptor Location: 655924.60 E, 4297230.73 N
2 MEIW Receptor Location: 655884.60 E, 4296930.73 N

The locations of the MEIR and MEIW are shown in **Figure 15** for the proposed project Option B scenario. The MEIW is located south of the southwestern property boundary. The MEIR is located north of the property. The 30-year cancer risk at the MEIR and 25-year cancer risk at the MEIW by chemical is presented in **Table 10**.

Table 10
MEIR and MEIW Cancer Risks by Substance (Option B)

TAC	Cancer Risk (in a million)						
	Project Phase	Diesel Particulate Matter	Benzene	Toluene	Xylenes	MTBE	Total
MEIR Cancer Risk	Construction	3.96E+00	1.17E-05	0.00E+00	0.00E+00	0.00E+00	3.96E+00
	Operations	2.77E-01	9.78E-01	0.00E+00	0.00E+00	2.79E-01	1.53E+00
MEIW Cancer Risk	Construction	9.84E-02	1.50E-06	0.00E+00	0.00E+00	0.00E+00	9.84E-02
	Operations	9.04E-02	2.51E+00	0.00E+00	0.00E+00	7.18E-01	3.32E+00

Option C

Table 11 presents the locations and cancer risks for the off-site MEIR and the MEIW for the proposed project Option C scenario. At the MEIR, cancer risk is calculated on a 30-year basis for an adult, and on a 9-year basis for a child, to account for variable residence times. Cancer risk for the MEIW is calculated on a 25-year exposure basis assuming most workers will be present during the same hours as gas station operation. Cancer risks are below the significance level of 10 in a million at the residential and worker receptors. For construction the 8-hour worker period was assumed to be 8 a.m. to 4 p.m. to overlap with construction emissions and for operations the 8-hour worker period was assumed to be 5 a.m. to 1 p.m. to overlap with gasoline dispensing and delivery truck traffic.

Table 11
Summary of Cancer Risks (Option C)

Phase	Cancer Risk (in a Million)		
	30-Yr Resident (MEIR)	9-Yr (Child)	25-Yr (Offsite Worker) (MEIW)
Construction	3.96	3.96	0.10
Operations	1.73	1.25	3.48
Total Cancer Risk	5.68	5.21	3.58
Significance Threshold	10.0	10.0	10.0
Exceed Threshold?	No	No	No

Notes: units are in micrograms per cubic meter.
1 MEIR Receptor Location: 655924.60 E, 4297230.73 N
2 MEIW Receptor Location: 655884.60 E, 4296930.73 N

The locations of the MEIR and MEIW are shown in **Figure 15** for the proposed project Option C scenario. The MEIW is located south of the southwestern property boundary. The MEIR is located north of the property. The 30-year cancer risk at the MEIR and 25-year cancer risk at the MEIW by chemical is presented in **Table 12**.

Table 12
MEIR and MEIW Cancer Risks by Substance (Option C)

TAC	Cancer Risk (in a million)						
	Project Phase	Diesel Particulate Matter	Benzene	Toluene	Xylenes	MTBE	Total
MEIR Cancer Risk	Construction	3.96E+00	1.17E-05	0.00E+00	0.00E+00	0.00E+00	3.96E+00
	Operations	3.29E-01	9.81E-07	0.00E+00	0.00E+00	2.79E-01	1.59E+00
MEIW Cancer Risk	Construction	9.84E-02	1.50E-06	0.00E+00	0.00E+00	0.00E+00	9.84E-02
	Operations	9.88E-02	2.51E+00	0.00E+00	0.00E+00	7.18E-01	3.33E+00

Chronic Non-Cancer Risks

Table 13 presents the locations and chronic non-cancer hazard index (HI) for the PMI, the MEIR, and the MEIW for proposed project Options A, B, and C. The HIs are well below the significance level of 1 for all scenarios. The PMI is located south of the southwestern property boundary.

Table 13
Summary of Chronic Non-Cancer Risks

Scenario	Receptor	Location, UTM		Hazard Index
		East (m)	North (m)	
Option A	MEIW	655884.60	4296930.73	0.04
	MEIR	655724.60	4296790.73	0.01
Option B	MEIW	655884.60	4296930.73	0.04
	MEIR	655724.60	4296790.73	0.01
Option C	MEIW	655884.60	4296930.73	0.04
	MEIR	655724.60	4296790.73	0.01

8-hour Chronic Non-Cancer Risks

For the 8-hour Benzene chronic risk, the daily 8-hour average ground level concentrations were calculated using the postfile output from AERMOD and an 8-hour period from hour ending 9 a.m. to hour ending 5 p.m. **Table 14** presents the locations and 8-hour chronic HIs for the PMI, the MEIR and the MEIW for proposed project Options A, B, and C. The PMI is located south of the southwestern property boundary. The 8-hour HIs are below the significance level of 1.

Table 14
Summary of 8-hour Chronic Non-Cancer Risks – Option A

Scenario	Receptor	Location, UTM		Hazard Index	Significance Threshold	Exceed Threshold?
		East (m)	North (m)			
Option A	PMI	655864.60	4296930.73	0.16	1.0	No
	MEIW	655884.60	4296930.73	0.15	1.0	No
	MEIR	655724.60	4296790.73	0.02	1.0	No
Option B	PMI	655864.60	4296930.73	0.16	1.0	No
	MEIW	655884.60	4296930.73	0.15	1.0	No
	MEIR	655724.60	4296790.73	0.02	1.0	No
Option C	PMI	655864.60	4296930.73	0.16	1.0	No
	MEIW	655884.60	4296930.73	0.15	1.0	No
	MEIR	655724.60	4296790.73	0.02	1.0	No

Acute Non-Cancer Risks

Table 15 presents the locations and acute HI for the PMI, the MEIR and the MEIW for proposed project Options A, B, and C. The PMI is located west of the Costco property. The acute HIs are below the significance level of 1.

Table 15
Summary of Acute Non-Cancer Risks – Option A

Scenario	Receptor	Location, UTM		Hazard Index	Significance Threshold	Exceed Threshold?
		East (m)	North (m)			
Option A	PMI	655784.60	4296990.73	0.26	1.0	No
	MEIW	655864.60	4296930.73	0.16	1.0	No
	MEIR	656104.60	4297010.73	0.10	1.0	No
Option B	PMI	655784.60	4296990.73	0.25	1.0	No
	MEIW	655864.60	4296930.73	0.16	1.0	No
	MEIR	656104.60	4297010.73	0.09	1.0	No
Option C	PMI	655784.60	4296990.73	0.25	1.0	No
	MEIW	655864.60	4296930.73	0.16	1.0	No
	MEIR	656104.60	4297010.73	0.09	1.0	No

Figure 15
Locations of PMI, MEIR and MEIW for Cancer Risk (Options A/B/C)

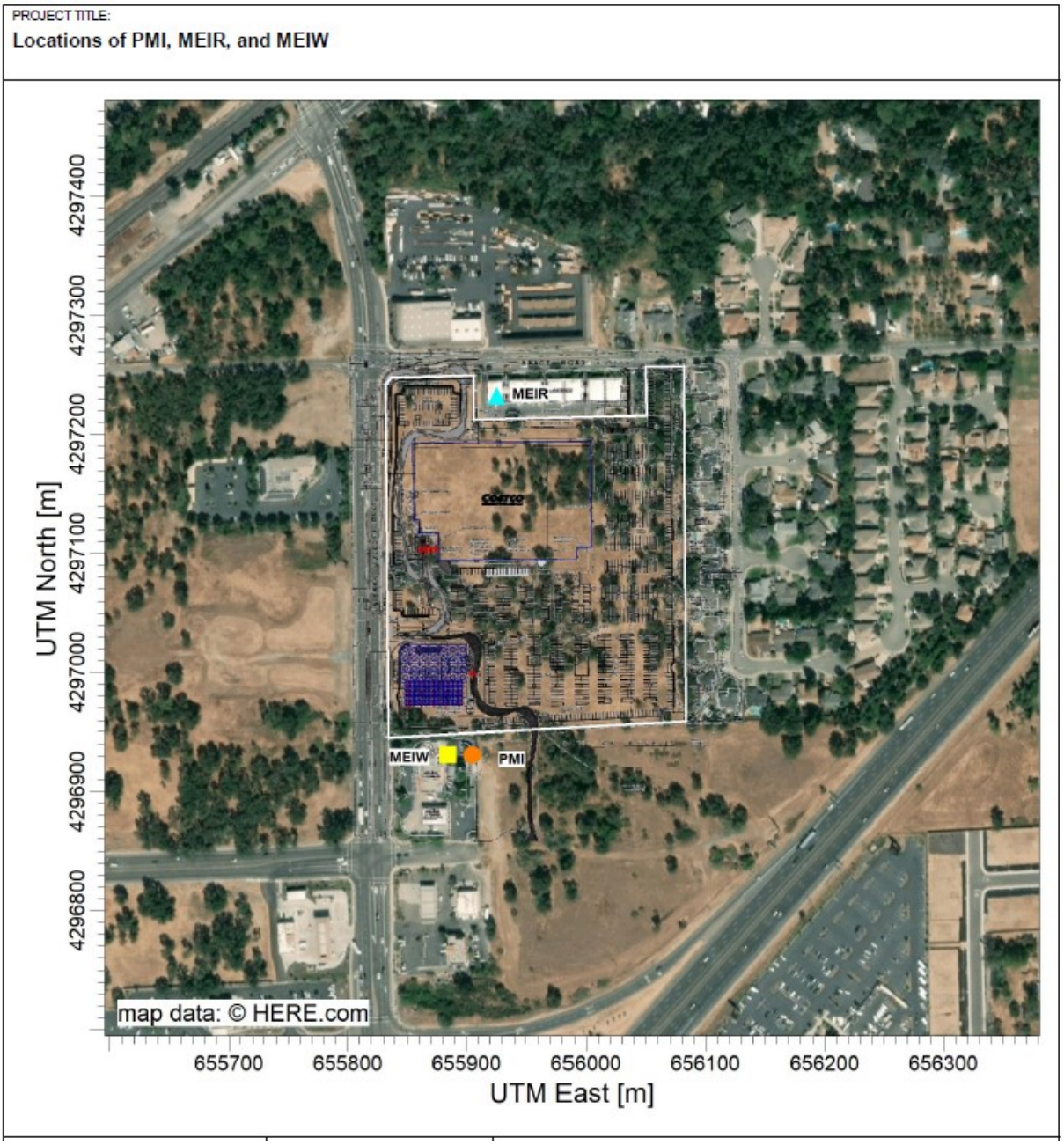


Figure 16
Plot of Cancer Risk Concentrations > 1 in-a-million for Residential Sensitive Receptors for Controlling Project Scenario (Option A)

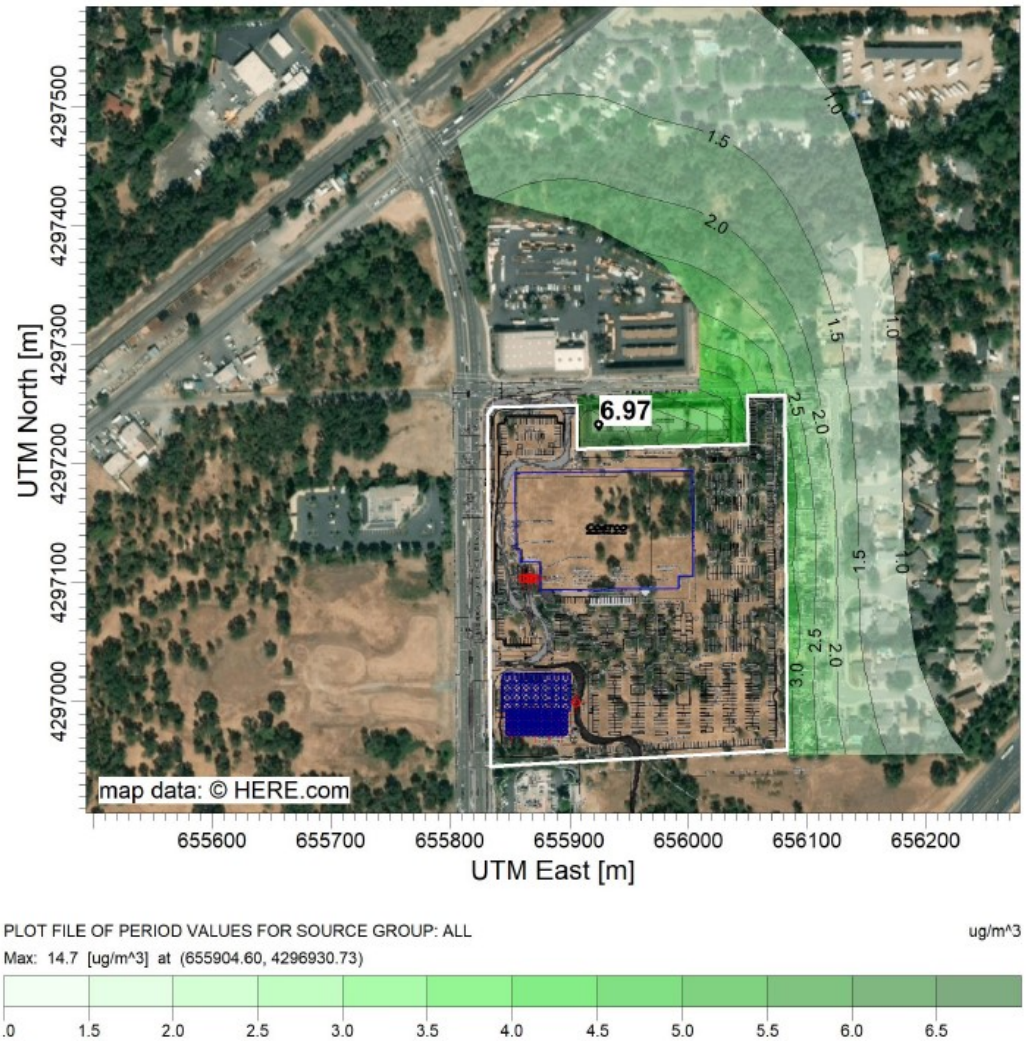
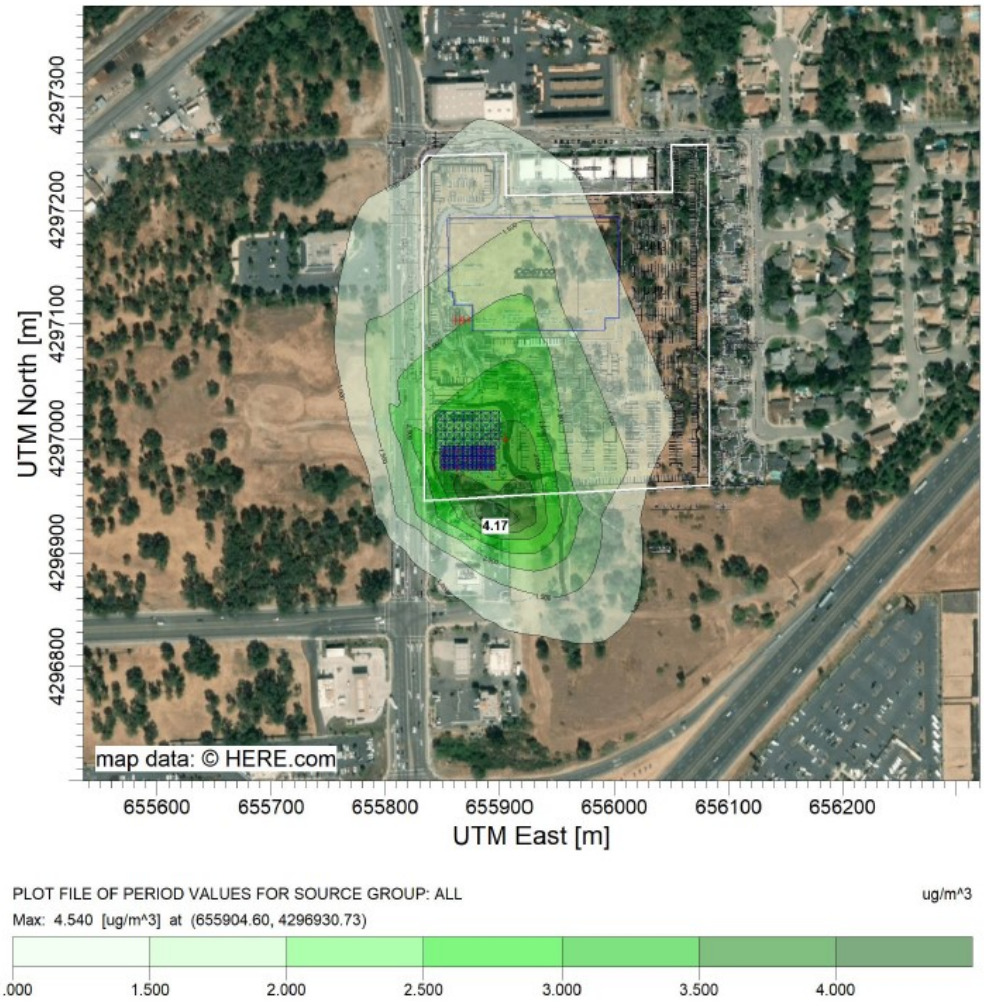


Figure 17
Plot of Cancer Risk Concentrations > 1 in-a-million for Worker Sensitive Receptors for Controlling Project Scenario (Option A)



6.0 Cumulative Health Risk

This section assesses cumulative cancer risk at off-site sensitive receptors that could result from existing sources, project sources, and other nearby projects.

Cumulative Projects

There are no known other projects located within 1,000 feet of the project site and this project is not adding any new sensitive receptors. Therefore, the cumulative modeling analysis only includes the proposed project.

Cumulative Analysis for Off-site Sensitive Receptors

There are three other gasoline dispensing stations (Arco, Chevron, and 7-Eleven) located within 1,000 feet of the Project as well as the highly traveled I-80 corridor. The Arco station has 16 dispensers, the Chevron station has 12 dispensers, and the 7-Eleven has 12 dispensers, for a total of 40 dispensers. These three gasolines dispensing stations are approximately the same distance from the MEIR as the proposed gasoline dispensing station.

Based on the cancer risk at the MEIR presented in Tables 7, 9 and 11 for the 3 proposed options, over 95% of the cancer risk is due to DPM from construction equipment. The cancer risk due to operations of the project is less than

3.0 in a million for any of the 3 proposed options. At the residences closer to the gasoline dispensing stations, the cancer risk due to operations is 0.89, 0.56 and 0.62 in a million for proposed options A, B and C, respectively. For the 40 dispensers at the other three gasoline dispensing stations, the project cancer risk could be scaled by the number of dispensers such that the cancer risk due to these three existing gasolines dispensing stations would be approximately 0.5 in a million.

The residences located east of the Project, closest to the I-80 corridor, likely receive the highest cancer risk due to DPM from trucks traveling on the highway. Several of these residences are within 500 feet of I-80 but these are further from the Project and the gasoline dispensing stations. The wind direction to expose these residences to DPM emissions from I-80 is different than that of the Project. Therefore, impacts on these residences would be either from the Project or from the on-road sources along I-80 and not the sum of the two. Given that the exposures from the Project are below 2 in a million for these residences, the cumulative risks would be less than significant.

7.0 Uncertainties

In accordance with risk assessment guidance, the following discussion summarizes the main uncertainties associated with the emissions estimation, air dispersion modeling, and risk estimation components of the HRA methodology.

Emissions Estimates

Uncertainties exist in estimating emissions from operational TAC emissions from potential stationary sources associated with the fueling station as new CAPCOA guidance regarding estimating risk from fueling stations will be released in the coming months.

Air Dispersion Modeling

In addition to the uncertainty associated with emission estimates, uncertainty exists regarding the pollutant concentrations estimated by the air dispersion model. The limitations of the air dispersion model provide a source of uncertainty in the estimation of exposure concentrations. According to EPA, errors attributable 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 (EPA, 2017). AECOM's methodologies use conservative assumptions and techniques to produce conservative results; thus, predicted exposure concentrations are likely to be at or above actual exposure concentrations.

The source parameters used to model emission sources add uncertainty. For all emission sources, AECOM uses source parameters that are either recommended as defaults or expected to produce more conservative (worst-case) results. Discrepancies might exist between the actual emissions characteristics of a source and its representation in the model; exposure concentrations used in this assessment represent approximate exposure concentrations.

Health Risk Analysis

Numerous assumptions must be made 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 exposure variables used in this HRA are high-end estimates. For example, it is assumed that residential receptors would be exposed to project emissions for 8,760 hours per year. This assumption is highly conservative because most residents do not remain in their homes for this period, and the gas station is anticipated to only operate daily from 5 a.m. to 10 p.m. The combination of several high-end estimates used as exposure parameters may substantially overestimate chemical intake. The excess lifetime cancer risks calculated in this assessment are therefore likely to be higher than may be required to be protective of public health.

The OEHHA Cancer Potency Factor (CPF) for diesel PM is used to estimate cancer risks associated with exposure to diesel PM from the project and off-site emissions. However, the CPF derived by OEHHA for diesel PM is highly uncertain in the estimation of both response and dose. In the past, because of 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 diesel PM as Probably Carcinogenic to Humans (Group 2); EPA had also

concluded that the existing data did not provide an adequate basis for quantitative risk assessment (EPA, 2002). However, based on two recent scientific studies (Benbrahim-Tallaa et al., 2012; Attfield et al, 2012), IARC recently reclassified diesel PM as Carcinogenic to Humans (Group 1) (IARC, 2012), 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 IARC may provide additional impetus for EPA to identify a quantitative dose/response relationship between exposure to diesel PM and cancer.

OEHHA notes that the conservative assumptions used in a risk assessment are intended to avoid underestimation of actual risks posed by a site and are designed to err on the side of health protection (OEHHA, 2015). The estimated risks in this HRA 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. Although it is difficult to quantify the uncertainties associated with all the assumptions made in this risk assessment, the use of conservative assumptions is likely to result in substantial overestimates of exposure, and hence, risk.

8.0 References

AECOM. 2018 (June). Loomis Costco Draft Environmental Impact Report.

Attfield MD, Schleiff PL, Lubin JH, Blair A, Stewart PA, Vermeulen R, Coble JB, Silverman DT. 2012. The Diesel Exhaust in Miners Study: A Nested Case-Control Study of Lung Cancer and Diesel Exhaust. J Natl Cancer Inst.

Bay Area Air Quality Management District (BAAQMD). 2017 (May). California Environmental Quality Act Air Quality Guidelines (BAAQMD CEQA Guidelines). Available: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed September 2019.

Benbrahim-Tallaa, L. et al. 2012. Carcinogenicity of Diesel-engine and Gasoline-engine Exhausts and Some Nitroarenes, Lancet Oncology. July 2012.

California Air Pollution Control Officers Association (CAPCOA). 1997 (November). Gasoline Service Station Industrywide Risk Assessment Guidelines.

---------. 2010. *Health Risk Assessments for Land Use Projects.* http://www.capcoa.org/wp-content/uploads/2010/05/2010_CAPCOA_HRA_Land_Use_Workshop.pdf. Accessed November 2018.

California Air Resources Board (CARB). 2011 (May). EMFAC2011 Idling Emissions Worsheet.. https://www.arb.ca.gov/msei/emfac2011_idling_emission_rates.xlsx. Accessed November 2018.

---------. 2013. Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities. https://www.arb.ca.gov/vapor/gdf-emisfactor/gdf%20umbrella%20document%20-%2020%20nov%202013.pdf. Accessed March 2019.

---------. 2015. Meteorological data for AERMOD. https://www.arb.ca.gov/toxics/harp/metfiles2.htm. Accessed September 2019.

---------. 2017. Hotspots Analysis Reporting Program 2 Air Dispersion Modeling and Risk Tool (Version 19121). https://ww3.arb.ca.gov/toxics/harp/harp.htm. Accessed September 2019.

---------. 2018a. EMFAC2017 Volume III – Technical Documentation. https://ww3.arb.ca.gov/msei/downloads/emfac2017-volume-iii-technical-documentation.pdf. Accessed March 2018.

---------. 2018b. Staff Report: Initial Statement of Reasons Figure 1. https://www.arb.ca.gov/regact/2018/fillpipe2018/fpisor.pdf. Accessed February 2019.

---------. 2018c. Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values Table 1. https://www.arb.ca.gov/toxics/healthval/contable.pdf. Accessed November 2018.

Kittelson & Associates. 2019 (August). Transportation Impact Analysis Loomis Costco Warehouse.

Loomis Municipal Code. 13.30.070 Noise Standards. http://qcode.us/codes/loomis/view.php?topic=13-3-13_30-13_30_070. Accessed February 2019.

International Agency for Research on Cancer (IARC). 2012. Press Release No. 213. IARC: Diesel Engine Exhaust Carcinogenic. June.

Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Guidance Manual. February.

California Department of Transportation (Caltrans). http://www.dot.ca.gov/trafficops/trucks/docs/truck-legend.pdf. Accessed November 2018.

South Coast Air Quality Management District (SCAQMD). 2008 (July). Final Localized Significance Threshold Methodology. http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf. Accessed February 2019.

USEPA. 2002. Health Assessment Document for Diesel Engine Exhaust. National Center for Environmental Assessment, Office of Research and Development, Washington, DC. EPA/600/8-90/057F. May.———.. 2017. Guideline on Air Quality Models (Revised). 40 Code of Federal Regulations, Part 51, Appendix W. Office of Air Quality Planning and Standards. January.

———.. 2018 (April). AERMOD Implementation Guide. https://www3.epa.gov/ttn/scram/models/aermod/aermod_implementation_guide.pdf. Accessed November 2018.

Attachment A

Data Assumption Tables

Attachment B

Health Risk Assessment Modeling Inputs