APPENDIX F
Air Quality Emission Estimates

Introduction

Construction- and operation-related emissions that would be associated with the project-level Water Pollution Control Plant (WPCP) improvements have been quantified using the methods described below. Detailed emissions estimates are not provided for the program-level WPCP improvements. Impacts that would be associated with the program-level WPCP improvements are qualitatively assessed in EIR Section 4.5 (Air Quality) by comparing the scope of the program-level WPCP improvements to the scope of similar project-level WPCP improvements (e.g., dewatering Phase 1, a project-level improvement, and dewatering phase 2, a program-level improvement), for the use of associated emissions as surrogate emissions for program-level improvements where appropriate.

Construction Emission Estimates

EIR Figure 3-19 in Chapter 3 indicates the construction window for all project-level WPCP improvements. Total average daily construction emissions for years 2013 through 2018 and 2022 that would be associated with the project-level WPCP improvements were estimated using project-specific information provided by Carollo Engineers. Many of the improvements would be constructed concurrently so emissions associated with each of the project-level improvements were estimated separately, then added together as appropriate, to represent the total average daily construction emissions for the applicable years depending on the estimated construction start date as defined in EIR Appendix C. For each of the improvements, Carollo Engineers provided the following information:

1. A list of the types of off-road construction equipment to be used (see Section F.5, Equipment Hours);

2. The number of pieces of each type of off-road equipment (see Section F.5, Equipment Hours);

3. The number of on-road vehicle trips (for both construction workers and haul truck deliveries) per day (see Section F.6, Project Trips);

4. Daily equipment usage rates in terms of hours per day and total days for each piece of off-road equipment (see Section F.5, Equipment Hours); and

5. The horse-power (hp) rating for each type of off-road equipment used (see Section F.8, Off-Road Construction Equipment Emission Factors per Calendar Year).

This appendix contains the emissions estimate calculations and all of the assumptions used to estimate the construction criteria pollutant emissions that would be associated with the project-level WPCP improvements. Section F.1, Summary of Total Emissions (Tons per Year), and Section F.2, Summary of Total Emissions (Daily Average Pounds per Year) contain the summaries of total estimated air quality emissions. Section F.3, Worst-Case Maximum Daily Average, identifies the worst-case maximum daily average emissions that could occur based on the construction windows identified in EIR Figure 3-19 for all project-level WPCP improvements.

Off-Road Equipment Exhaust

Air pollutant emissions, including reactive organic gases (ROG), nitrogen oxides (NO_X), particulate matter less than 10 microns in diameter (PM_{10}), and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) that would be generated by off-road construction equipment (e.g., excavators, graders, loaders, cranes, etc.) were estimated using a variety of regulatory emission factors. The California Air Resources Board (CARB)'s Offroad emissions inventory database model was used to develop specific construction equipment ROG, NO_X, and PM_{10} emission factors for Santa Clara County based on the estimated year that construction activities would commence for each of the improvements (see Section F.9, below). The Offroad database provides data for only NO_X, PM, and total hydrocarbons, so factors identified by CARB[1] were applied to convert total hydrocarbon emissions rates to ROG emissions rates. PM_{10} and $PM_{2.5}$ construction equipment exhaust emission factors were calculated by multiplying the PM emission factors by the mass fractions of PM_{10} and $PM_{2.5}$ emissions in diesel exhaust, as provided by South Coast Air Quality Management District's (SCAQMD's) *Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM2.5 Significance Thresholds*.[2] Off-road equipment exhaust emissions were estimated using the following equation:

$E_{i,j,k} = (EF_{i,j,k} \times H_{j,k})$ (Equation 1)

Where:

$E_{i,j,k}$ = Total emissions of pollutant i from equipment type j during WPCP improvement k;

$EF_{i,j}$ = Emission factor (pounds/hour) for pollutant i from equipment type j during WPCP improvement k; and

$H_{j,k}$ = Total hours of operating time for equipment type j during WPCP improvement k.

[1] California Air Resources Board, Public Meeting to Consider Approval of Revisions to the State's On-road Motor Vehicle Emissions Inventory, Technical Support Document, Section 4.13, Factors for Converting THC Emissions Rates TOG/ROG, May 2000.

[2] South Coast Air Quality Management District, *Final –Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds*, October, 2006.

The sum of the total emissions for each WPCP improvement is then divided by the total number of workdays of the applicable WPCP improvement to obtain the average daily emissions for each of the improvements. See Section F.10, Average Daily On-Site Construction Exhaust Emissions, for the off-road equipment construction emissions estimated for each of the project-level WPCP improvements.

Motor Vehicle Exhaust

Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ from motor vehicles were calculated by multiplying the estimated vehicle-miles-traveled (VMT) by each type of vehicle estimated to be used during the construction phase by emission factors that were compiled by running CARB's EMFAC2011 Emissions Burden Model. Emission factors were estimated for average model years and average speed in Santa Clara County during the calendar years that the improvements are estimated to commence. Daily emissions by vehicle class (i.e., light-duty gasoline-fueled trucks and heavy-duty trucks) are estimated using the EMFAC2011 emission factors multiplied by the estimated project-related vehicle trips and the estimated trip lengths traveled by the vehicles. Emission factors for PM10 and PM2.5 include tire and break wear factors. Emissions for light-duty trucks include start-up emissions and evaporative loss emissions for ROG and TOG only.

Estimated daily trip amounts and the WPCP improvement durations were generated by Carollo Engineers (see Appendix C). The exact end points for the daily trips are not known at this time, so the on-road emission estimates were developed under the assumption that each worker trip would be 40 miles round trip, and each material haul trip would be 10 miles round trip. Note that the material haul trips include water deliveries as well as application of the water at the project sites. On-road vehicle exhaust emissions were estimated using the following equation:

$$E_{i,k,l} = (REF_{i,k,l} \times M_{k,l}) + (SEF_{i,ldt} \times D_{k,l}) \qquad \text{(Equation 2)}$$

Where:

$E_{i,k,l}$ = Total emissions of pollutant i from vehicle type k during WPCP improvement l;

$REF_{i,k,l}$ = Running emission factor (grams/mile) for pollutant i from vehicle type k during WPCP improvement l;

$M_{k,l}$ = Total miles traveled for vehicle type k during WPCP improvement l;

$SEF_{i,ldt}$ = Start-up and evaporative loss (for ROG and TOG only) emission factor (grams/vehicle/day) for pollutant i for light duty trucks (for heavy trucks, this equals zero); and

$D_{k,l}$ = Days of operation for vehicle type k during WPCP improvement l.

The sum of the total emissions for each pollutant is then divided by the total number of workdays to obtain the average daily emissions. See Section F.8, Average Daily Off-Site Construction Exhaust Emissions, for the on-road vehicle construction emissions estimated for each of the project-level WPCP improvements.

Operation Emissions Estimates

Motor Vehicle Emissions

The air pollutant emissions from motor vehicles that would be used during operations were estimated using the same methodology described above for emissions from construction phase motor vehicles. Emissions that would be associated with commuting workers, material hauling, and deliveries were estimated using the EMFAC2011 emission factors for light-duty gasoline-fueled trucks and heavy-duty (T7) diesel-fueled trucks multiplied by the estimated long-term operation and maintenance-related employee vehicle trips per year (up to 35 round trips each day for 365 days a year) and the estimated additional haul truck trips (up to four round trips each day for 365 days a year). For a conservative analysis, it is assumed that all of the WPCP improvements would be operational by 2017; therefore, EMFAC2011 vehicle emission factors for calendar year 2017 were used to estimate operation-related vehicle exhaust. The analysis also assumes that each employee vehicle round trip would be 25 miles and each haul truck round trip would consist of 50 miles. The on-road vehicle exhaust emissions were estimated using Equation 2 (see above). See Section F.12, Operation Emissions Estimates, for the on-road vehicle operation emissions estimated for each of the project-level WPCP improvements.

Natural, Digester, and Landfill Gas Combustion

Air pollutant emissions from blended gas that would be used during operations were estimated using gas combustion emission factors for ROG, NO_X, and PM_{10} obtained from U.S. Environmental Protection Agency (U.S. EPA)'s AP-42 emissions document[3]. $PM_{2.5}$ emission factors were calculated by multiplying the PM_{10} emission factors by the mass fraction of $PM_{2.5}$ emissions in gaseous fuel exhaust, as provided by South Coast Air Quality Management District's (SCAQMD's) *Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM2.5 Significance Thresholds*. The gases are blended in certain proportions based on their respective heat content to meet utilization equipment fuel requirements. The stream for Blend Gas 1 (BG1) has an average composition of 34% digester gas, 41% landfill gas, and 25% natural gas. The stream for Blend Gas 2 (BG2) has an average composition of 44% digester gas, 33% landfill gas, and 23% natural gas.

Air pollutant emissions were calculated by multiplying the estimated total million British thermal units (MMBtu) provided by Carollo Engineers that would be associated with the WPCP improvements by the emission factor for the blended gas, which is a composition of the emission factors for digester gas, landfill gas, and natural gas. For a conservative analysis the average gas compositions are based on the BG1 blend because BG1 has the largest content of natural gas, which results in the most controlled NO_X emissions. The AP-42 emission factors for digester gas and landfill gas are based on equipment with no emission control; however, such sources would be required to have emission controls per BAAQMD permit conditions. Therefore, the NO_X emission factors for digester gas and landfill gas have been reduced by 60% (see AP-42,

[3] U.S. Environmental Protection Agency, AP-42, Section 3.1, Stationary Gas Turbines, Tables 3.1-1 and 3.1-2a.

Section 3.1.4.1) to reflect emission controls that would be required by BAAQMD. The data provided by Carollo Engineers indicates that improvements B2-P1– Dewatering Phase 1 and the B4-P1–Thermal Drying Phase 1 would require 1,800 MMBtu and 86,250 MMBtu from a blend of natural gas, digester gas, and landfill gas, respectively. Blended gas combustion emissions were estimated using the following equation:

$E_{i,k,BG1} = (EF_{i,BG1} \times FI_k)$ (Equation 3)

Where:

$E_{i,k,BG1}$ = Emissions of pollutant i from combustion of BG1 blended fuel gas associated with WPCP improvement k

$EF_{i,BG1}$ = Emission factor (pounds/MMBtu) for pollutant i for BG1 blended fuel gas, which includes 25% natural gas, 41% landfill gas, and 34% digester gas, where:

$EF_{i,BG1}$ = $(EF_{i,NG} \times 0.25) + (EF_{i,LFG} \times 0.41) + (EF_{i,DG} \times 0.34)$, where:

$EF_{i,NG}$ = Natural gas emission factor for pollutant i;

$EF_{i,LFG}$ = Landfill gas emission factor for pollutant i; and

$EF_{i,DG}$ = Digester gas emission factor for pollutant i; and

FI_k = Fuel Input (MMBtu) for WPCP improvement k

Note that $EF_{i,NG}$ for NO_X is based on emission controls using water-steam injection technology. $EF_{i,LFG}$ and $EF_{i,DG}$ for NO_X are based on uncontrolled emission factors with a control factor of 60% based on water-steam injection technology. The emission factors for all other pollutants represent uncontrolled emissions. See Section F.12, Operation Emissions Estimates, for the blended gas operation emissions estimated for each of the project-level WPCP improvements.

F.1 SUMMARY OF TOTAL EMISSIONS (TONS PER YEAR)

Schedule of WPCP Project Component Start Dates

2013	2015	2016	2017	2018	2022
P2	H1	B2-P1 Sludge	SF2-108	B2-P1 Side Stream Removal	E2
B2-P1 Full Mechanical	P1	B4-P1			
	B2-P1 Cake	B5-P1			
	B2-P1 Db Sub	SF1-P1			
	B3-P1				
	B6				

Source: Figure 19 Schedule of WPCP Improvements (MS Project Schedule).

Annual Average

	Emissions (tons)				
Source	ROG	TOG	NOx	PM10	PM2.5
2013	0.71	0.80	9.82	0.39	0.33
2014	0.40	0.45	5.56	0.22	0.18
2015	1.59	1.79	17.50	0.74	0.64
2016	1.87	2.11	20.53	0.87	0.76
2017	0.15	0.17	1.38	0.07	0.06
2018	0.15	0.17	1.99	0.07	0.06
2022	0.07	0.08	0.53	0.03	0.03
Total	4.93	5.58	57.31	2.40	2.05
Annual Average	0.21	0.23	2.39	0.10	0.09

Note: Annual average is based on a period of 24 years (2013 through 2036).

Year 2013

	Emissions (tons)				
Source	ROG	TOG	NOx	PM10	PM2.5
P2 - Equalization Basin					
Off-site	0.25	0.28	4.45	0.16	0.12
On-site	0.32	0.36	3.37	0.15	0.14
Subtotal	0.56	0.64	7.82	0.31	0.26
B2-P1 - Dewatering Phase 1 - Full Mechanical					
Off-site	0.08	0.08	1.19	0.04	0.03
On-site	0.07	0.08	0.81	0.04	0.03
Subtotal	0.15	0.17	2.00	0.08	0.07
Total	0.71	0.80	9.82	0.39	0.33

F.1 SUMMARY OF TOTAL EMISSIONS (TONS PER YEAR)

Year 2014

	Emissions (tons)				
Source	ROG	TOG	NOx	PM10	PM2.5
P2 - Equalization Basin					
Off-site	0.14	0.16	2.54	0.09	0.07
On-site	0.16	0.18	1.69	0.08	0.07
Subtotal	0.30	0.34	4.23	0.17	0.14
B2-P1 - Dewatering Phase 1 - Full Mechanical					
Off-site	0.05	0.05	0.76	0.03	0.02
On-site	0.05	0.06	0.57	0.03	0.02
Subtotal	0.10	0.11	1.33	0.05	0.05
Total	0.40	0.45	5.56	0.22	0.18

Notes: For P2, it is assumed that 4 months of off-site trips and 3 months of on-site equipment operation would occur in 2014. For B2-P1, it is assumed that 4.5 months of c site trips and 3.5 months of on-site equipment operation would occur in 2014 (based on Figure 19 Schedule of WPCP Improvements and Appendix C).

Year 2015

	Emissions (tons)				
Source	ROG	TOG	NOx	PM10	PM2.5
H1 - Headworks Odor Control					
Off-site	0.03	0.03	0.13	0.01	0.00
On-site	0.07	0.08	0.75	0.04	0.03
Subtotal	0.10	0.11	0.88	0.04	0.04
P1 - Primary Treatment Odor Control					
Off-site	0.03	0.03	0.16	0.01	0.00
On-site	0.11	0.13	1.13	0.06	0.05
Subtotal	0.14	0.16	1.29	0.07	0.06
B2-P1 - Dewatering Phase 1 - Cake Storage					
Off-site	0.04	0.04	0.79	0.02	0.01
On-site	0.05	0.06	0.57	0.03	0.02
Subtotal	0.09	0.10	1.36	0.05	0.04
B2-P1 - Dewatering Phase 1 - Double-Ended Substation					
Off-site	0.04	0.04	0.10	0.01	0.00
On-site	0.07	0.08	0.76	0.04	0.03
Subtotal	0.11	0.12	0.86	0.04	0.04
B3-P1 - Covered Lagoons Phase 1					
Off-site	0.18	0.20	3.22	0.09	0.06
On-site	0.91	1.04	8.77	0.41	0.38
Subtotal	1.09	1.24	11.99	0.51	0.44
B6 - Back-up Sludge Pipeline					
Off-site	0.04	0.04	0.88	0.02	0.02
On-site	0.02	0.02	0.24	0.01	0.01
Subtotal	0.06	0.06	1.13	0.04	0.03
Total	1.59	1.79	17.50	0.74	0.64

Notes: For B3-P1, it is assumed that half of the emissions would occur in 2015 (based on Figure 19 Schedule of WPCP Improvements and Appendix C). All other identified project components would be completed in 2015.

F.1 SUMMARY OF TOTAL EMISSIONS (TONS PER YEAR)

Year 2016

Source	Emissions (tons)				
	ROG	TOG	NOx	PM10	PM2.5
B2-P1 - Dewatering Phase 1 - Sludge Dewatering					
Off-site	0.01	0.01	0.10	0.00	0.00
On-site	0.04	0.05	0.46	0.02	0.02
Subtotal	0.06	0.06	0.56	0.03	0.02
B4-P1 - Thermal Drying Phase 1					
Off-site	0.05	0.05	1.05	0.03	0.01
On-site	0.07	0.08	0.81	0.04	0.04
Subtotal	0.12	0.14	1.86	0.06	0.05
B5-P1 - Greenhouse Drying Phase 1					
Off-site	0.04	0.04	0.27	0.01	0.01
On-site	0.12	0.14	1.22	0.06	0.06
Subtotal	0.16	0.18	1.49	0.07	0.06
SF1-P1 - Landscaping and Road Repairs Phase 1					
Off-site	0.03	0.04	0.58	0.01	0.01
On-site	0.40	0.46	4.05	0.19	0.17
Subtotal	0.43	0.49	4.62	0.20	0.18
B3-P1 - Covered Lagoons Phase 1					
Off-site	0.18	0.20	3.22	0.09	0.06
On-site	0.91	1.04	8.77	0.41	0.38
Subtotal	1.09	1.24	11.99	0.51	0.44
Total	1.87	2.11	20.53	0.87	0.76

Notes: For B3-P1, it is assumed that half of the emissions would occur in 2016 (based on Figure 19 Schedule of WPCP Improvements and Appendix C). All other identified project components would be completed in 2016.

Year 2017

Source	Emissions (tons)				
	ROG	TOG	NOx	PM10	PM2.5
SF2 108 - Warehouse					
Off-site	0.03	0.04	0.19	0.01	0.00
On-site	0.11	0.13	1.19	0.06	0.05
Total	0.15	0.17	1.38	0.07	0.06

Notes: SF2 108 would be completed in 2017.

Year 2018

Source	Emissions (tons)				
	ROG	TOG	NOx	PM10	PM2.5
B2-P1 - Dewatering Phase 1 - Side-Stream Nitrogen Removal					
Off-site	0.06	0.06	0.99	0.03	0.02
On-site	0.10	0.11	1.00	0.05	0.04
Total	0.15	0.17	1.99	0.07	0.06

Notes: B2-P1 would be completed in 2018.

Year 2022

Source	Emissions (tons)				
	ROG	TOG	NOx	PM10	PM2.5
E2 - Digester Gas Storage					
Off-site	0.02	0.03	0.05	0.01	0.00
On-site	0.05	0.06	0.48	0.02	0.02
Total	0.07	0.08	0.53	0.03	0.03

Notes: E2 would be completed in 2022.

F.2 SUMMARY OF EMISSIONS (DAILY AVERAGE POUNDS PER YEAR

Years 2013 and 2014

	Emissions (daily average pounds)				
Source	ROG	TOG	NOx	PM10	PM2.5
P2 - Equalization Basir					
Off-site	2.88	3.23	51.64	1.84	1.39
On-site	5.63	6.41	61.11	2.80	2.58
Subtotal	8.51	9.64	112.75	4.64	3.97
B2-P1 - Dewatering Phase 1 - Full Mechanica					
Off-site	0.83	0.93	13.14	0.48	0.36
On-site	1.18	1.34	13.54	0.64	0.59
Subtotal	2.01	2.27	26.68	1.12	0.95
Total	10.52	11.91	139.43	5.76	4.92

Year 2015

	Emissions (daily average pounds)				
Source	ROG	TOG	NOx	PM10	PM2.5
H1 - Headworks Odor Contro					
Off-site	0.30	0.33	1.29	0.06	0.04
On-site	0.85	0.97	9.46	0.45	0.41
Subtotal	1.15	1.29	10.75	0.52	0.45
P1 - Primary Treatment Odor Contrc					
Off-site	0.31	0.34	1.64	0.07	0.04
On-site	1.43	1.63	14.54	0.76	0.70
Subtotal	1.74	1.97	16.18	0.84	0.74
B2-P1 - Dewatering Phase 1 - Cake Storag					
Off-site	0.57	0.64	11.54	0.32	0.21
On-site	1.09	1.24	11.94	0.56	0.51
Subtotal	1.66	1.87	23.48	0.87	0.72
B2-P1 - Dewatering Phase 1 - Double-Ended Substatio					
Off-site	0.39	0.42	1.02	0.07	0.04
On-site	0.88	1.00	9.78	0.47	0.43
Subtotal	1.26	1.42	10.80	0.53	0.46
B3-P1 - Covered Lagoons Phase					
Off-site	1.35	1.50	23.88	0.68	0.45
On-site	7.44	8.47	71.71	3.38	3.11
Subtotal	8.79	9.98	95.58	4.06	3.56
B6 - Back-up Sludge Pipeline					
Off-site	1.39	1.56	34.34	0.91	0.62
On-site	0.82	0.93	9.28	0.45	0.42
Subtotal	2.21	2.49	43.62	1.36	1.04
Total	16.81	19.02	200.41	8.18	6.98

F.2 SUMMARY OF EMISSIONS (DAILY AVERAGE POUNDS PER YEAR

Year 2016

	Emissions (daily average pounds)				
Source	ROG	TOG	NOx	PM10	PM2.5
B2-P1 - Dewatering Phase 1 - Sludge Dewaterin					
Off-site	0.20	0.22	1.51	0.05	0.03
On-site	0.90	1.03	9.89	0.47	0.43
Subtotal	1.10	1.24	11.40	0.52	0.46
B4-P1 - Thermal Drying Phase ´					
Off-site	0.44	0.49	9.59	0.23	0.13
On-site	0.83	0.94	9.05	0.43	0.40
Subtotal	1.27	1.43	18.64	0.66	0.53
B5-P1 - Greenhouse Drying Phase ´					
Off-site	0.31	0.33	2.09	0.08	0.04
On-site	1.23	1.41	12.45	0.66	0.60
Subtotal	1.54	1.74	14.54	0.74	0.65
SF1-P1 - Landscaping and Road Repairs Phase					
Off-site	0.47	0.52	8.39	0.21	0.12
On-site	5.87	6.68	59.05	2.73	2.51
Subtotal	6.34	7.20	67.44	2.94	2.63
B3-P1 - Covered Lagoons Phase					
Off-site	1.35	1.50	23.88	0.68	0.45
On-site	7.44	8.47	71.71	3.38	3.11
Subtotal	8.79	9.98	95.58	4.06	3.56
Total	19.04	21.59	207.61	8.92	7.82

Year 2017

	Emissions (daily average pounds)				
Source	ROG	TOG	NOx	PM10	PM2.5
SF2 108 - Warehouse					
Off-site	0.25	0.27	1.40	0.06	0.03
On-site	1.18	1.34	12.21	0.59	0.54
Total	1.43	1.61	13.61	0.65	0.57

Year 2018

	Emissions (daily average pounds)				
Source	ROG	TOG	NOx	PM10	PM2.5
B2-P1 - Dewatering Phase 1 - Side-Stream Nitrogen Remov					
Off-site	0.40	0.44	7.16	0.20	0.11
On-site	1.71	1.94	17.83	0.85	0.78
Total	2.11	2.39	24.99	1.05	0.89

Year 2022

	Emissions (daily average pounds)				
Source	ROG	TOG	NOx	PM10	PM2.5
E2 - Digester Gas Storage					
Off-site	0.19	0.21	0.40	0.06	0.03
On-site	1.03	1.18	9.76	0.47	0.44
Total	1.22	1.38	10.16	0.53	0.46

F.3 WORST-CASE MAXIMUM DAILY AVERAGE

Year 2015

	Emissions (average pounds/day)				
Source	ROG	TOG	NOx	PM10	PM2.5
H1 - Headworks Odor Control					
Subtotal	1.15	1.29	10.75	0.52	0.45
P1 - Primary Treatment Odor Control					
Subtotal	1.74	1.97	16.18	0.84	0.74
P2 - Equalization Basin					
Subtotal	8.51	9.64	112.75	4.64	3.97
B2-P1 - Dewatering Phase 1 - Full Mechanical					
Subtotal	2.01	2.27	26.68	1.12	0.95
B2-P1 - Dewatering Phase 1 - Cake Storage					
Subtotal	1.66	1.87	23.48	0.87	0.72
B2-P1 - Dewatering Phase 1 - Double-Ended Substation					
Subtotal	1.26	1.42	10.80	0.53	0.46
B3-P1 - Covered Lagoons Phase 1					
Subtotal	8.79	9.98	95.58	4.06	3.56
B6 - Back-up Sludge Pipeline					
Subtotal	2.21	2.49	43.62	1.36	1.04
Total	27.33	30.93	339.85	13.94	11.89

Notes: For B3-P1, it is assumed that half of the emissions could occur in 2015 (based on Figure 19 Schedule of WPCP Improvements and Appendix Cf). All other identified project components could be completed in 2015.

F.3 WORST-CASE MAXIMUM DAILY AVERAGE

Year 2016

Source	Emissions (average pounds/day)				
	ROG	TOG	NOx	PM10	PM2.5
H1 - Headworks Odor Control					
Subtotal	1.15	1.29	10.75	0.52	0.45
P1 - Primary Treatment Odor Control					
Subtotal	1.74	1.97	16.18	0.84	0.74
P2 - Equalization Basin					
Subtotal	8.51	9.64	112.75	4.64	3.97
B2-P1 - Dewatering Phase 1 - Full Mechanical					
Subtotal	2.01	2.27	26.68	1.12	0.95
B2-P1 - Dewatering Phase 1 - Cake Storage					
Subtotal	1.66	1.87	23.48	0.87	0.72
B2-P1 - Dewatering Phase 1 - Double-Ended Substation					
Subtotal	1.26	1.42	10.80	0.53	0.46
B2-P1 - Dewatering Phase 1 - Sludge Dewatering					
Subtotal	1.10	1.24	11.40	0.52	0.46
B3-P1 - Covered Lagoons Phase 1					
Subtotal	8.79	9.98	95.58	4.06	3.56
B4-P1 - Thermal Drying Phase 1					
Subtotal	1.27	1.43	18.64	0.66	0.53
B5-P1 - Greenhouse Drying Phase 1					
Subtotal	1.54	1.74	14.54	0.74	0.65
B6 - Back-up Sludge Pipeline					
Subtotal	2.21	2.49	43.62	1.36	1.04
SF1-P1 - Landscaping and Road Repairs Phase 1					
Subtotal	6.34	7.20	67.44	2.94	2.63
Total	36.48	41.30	440.48	18.28	15.70

Notes: For B3-P1, it is assumed that half of the emissions could occur in 2016 (based on Figure 19 Schedule of WPCP Improvements and Appendix C). All other identified project components could be completed in 2016.

F.3 WORST-CASE MAXIMUM DAILY AVERAGE

Year 2017

Source	Emissions (average pounds/day)				
	ROG	TOG	NOx	PM10	PM2.5
H1 - Headworks Odor Control					
Subtotal	1.15	1.29	10.75	0.52	0.45
P1 - Primary Treatment Odor Control					
Subtotal	1.74	1.97	16.18	0.84	0.74
B2-P1 - Dewatering Phase 1 - Cake Storage					
Subtotal	1.66	1.87	23.48	0.87	0.72
B2-P1 - Dewatering Phase 1 - Double-Ended Substation					
Subtotal	1.26	1.42	10.80	0.53	0.46
B3-P1 - Covered Lagoons Phase 1					
Subtotal	8.79	9.98	95.58	4.06	3.56
B5-P1 - Greenhouse Drying Phase 1					
Subtotal	1.54	1.74	14.54	0.74	0.65
SF1-P1 - Landscaping and Road Repairs Phase 1					
Subtotal	6.34	7.20	67.44	2.94	2.63
SF2 108 - Warehouse					
Subtotal	1.43	1.61	13.61	0.65	0.57
Total	23.91	27.08	252.39	11.15	9.79

Notes: For B3-P1 and B5-P1, it is assumed that half of the emissions could occur in 2017 (based on Figure 19 Schedule of WPCP Improvements and Appendix C). All other identified project components could be completed in 2017.

F.4 WORST-CASE MAXIMUM EMISSIONS (TONS)

Year 2015

Source	Emissions (tons)				
	ROG	TOG	NOx	PM10	PM2.5
H1 - Headworks Odor Control					
Subtotal	0.10	0.11	0.88	0.04	0.04
P1 - Primary Treatment Odor Control					
Subtotal	0.14	0.16	1.29	0.07	0.06
P2 - Equalization Basin					
Subtotal	0.30	0.34	4.23	0.17	0.14
B2-P1 - Dewatering Phase 1 - Full Mechanical					
Subtotal	0.15	0.17	2.00	0.08	0.07
B2-P1 - Dewatering Phase 1 - Cake Storage					
Subtotal	0.09	0.10	1.36	0.05	0.04
B2-P1 - Dewatering Phase 1 - Double-Ended Substation					
Subtotal	0.11	0.12	0.86	0.04	0.04
B3-P1 - Covered Lagoons Phase 1					
Subtotal	1.09	1.24	11.99	0.51	0.44
B6 - Back-up Sludge Pipeline					
Subtotal	0.06	0.06	1.13	0.04	0.03
Total	2.03	2.30	23.73	0.99	0.84

Notes: For B3-P1, it is assumed that half of the emissions could occur in 2015 (based on Figure 19 Schedule of WPCP Improvements and Appendix C). All other identified project components could be completed in 2015.

Year 2016

Source	Emissions (tons)				
	ROG	TOG	NOx	PM10	PM2.5
H1 - Headworks Odor Control					
Subtotal	0.10	0.11	0.88	0.04	0.04
P1 - Primary Treatment Odor Control					
Subtotal	0.14	0.16	1.29	0.07	0.06

F.4 WORST-CASE MAXIMUM EMISSIONS (TONS)

P2 - Equalization Basin					
Subtotal	0.30	0.34	4.23	0.17	0.14
B2-P1 - Dewatering Phase 1 - Full Mechanical					
Subtotal	0.09	0.10	1.36	0.05	0.04
B2-P1 - Dewatering Phase 1 - Cake Storage					
Subtotal	0.09	0.10	1.36	0.05	0.04
B2-P1 - Dewatering Phase 1 - Double-Ended Substation					
Subtotal	0.11	0.12	0.86	0.04	0.04
B2-P1 - Dewatering Phase 1 - Sludge Dewatering					
Subtotal	0.06	0.06	0.56	0.03	0.02
B3-P1 - Covered Lagoons Phase 1					
Subtotal	1.09	1.24	11.99	0.51	0.44
B4-P1 - Thermal Drying Phase 1					
Subtotal	0.12	0.14	1.86	0.06	0.05
B5-P1 - Greenhouse Drying Phase 1					
Subtotal	0.16	0.18	1.49	0.07	0.06
B6 - Back-up Sludge Pipeline					
Subtotal	0.06	0.06	1.13	0.04	0.03
SF1-P1 - Landscaping and Road Repairs Phase 1					
Subtotal	0.43	0.49	4.62	0.20	0.18
Total	2.69	3.05	31.07	1.30	1.11

Notes: For B3-P1, it is assumed that half of the emissions could occur in 2016 (based on Figure 19 Schedule of WPCP Improvements and Appendix C). All other identified project components could be completed in 2016.

F.4 WORST-CASE MAXIMUM EMISSIONS (TONS)

Year 2017

	Emissions (tons)				
Source	ROG	TOG	NOx	PM10	PM2.5
H1 - Headworks Odor Control					
Subtotal	0.10	0.11	0.88	0.04	0.04
P1 - Primary Treatment Odor Control					
Subtotal	0.14	0.16	1.29	0.07	0.06
B2-P1 - Dewatering Phase 1 - Cake Storage					
Subtotal	0.09	0.10	1.36	0.05	0.04
B2-P1 - Dewatering Phase 1 - Double-Ended Substation					
Subtotal	0.11	0.12	0.86	0.04	0.04
B3-P1 - Covered Lagoons Phase 1					
Subtotal	1.09	1.24	11.99	0.51	0.44
B5-P1 - Greenhouse Drying Phase 1					
Subtotal	0.08	0.09	0.75	0.04	0.03
SF1-P1 - Landscaping and Road Repairs Phase 1					
Subtotal	0.43	0.49	4.62	0.20	0.18
SF2 108 - Warehouse					
Subtotal	0.15	0.17	1.38	0.07	0.06
Total	2.19	2.48	23.13	1.01	0.88

Notes: For B3-P1 and B5-P1, it is assumed that half of the emissions could occur in 2017 (based on Figure 19 Schedule of WPCP Improvements and Appendix C). All other identified project components could be completed in 2017.

F.5 PROJECT LEVEL EQUIPMENT HOURS

H1 - Headworks Odor Control (Year 2015)

	Excavation				Foundation - Rebar				Backfilling/Paving				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	5	6	30													30
Jackhammers									1	3	6	18					18
Roller									1	2	6	12					12
Paving equipment									1	1	3	3					3
Dozer/Loader									1	3	6	18					18
Graders									1	2	6	12					12
Cranes					1	21	6	128					1	128	6	770	899
Forklifts					1	21	6	128					1	128	6	770	899
On-site Hauling	2	5	6	60					3	3	6	54					114
Water Truck	1	5	2	10	1	21	2	42	1	3	2	6	1	128	1	128	186
Total days		5				21				4				128			158

P1 - Primary Treatment Odor Control (Year 2015)

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	4	6	24													24
Jackhammers									1	3	6	18					18
Roller									1	1	6	6					6
Paving equipment									1	1	3	3					3
Dozer/Loader									1	3	6	18					18
Graders									1	2	6	12					12
Cranes					1	21	6	128					1	128	6	770	899
Forklifts					1	21	6	128					1	128	6	770	899
On-site Hauling	2	4	6	48					2	3	7	42					90
Water Truck	1	4	2	8	1	21	2	42	1	3	2	6	1	128	1	128	184
Total days		4				21				3				128			156

F.5 PROJECT LEVEL EQUIPMENT HOURS

P2 - Equalization Basin (Year 2013)

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	69	6	414													414
Jackhammers									3	61	6	1,098					1,098
Roller									1	63	6	378					378
Paving equipment									1	1	3	3					3
Dozer/Loader									4	73	6	1,752					1,752
Graders									2	58	6	696					696
Cranes					1	43	6	257									257
Forklifts					1	43	6	257									257
On-site Hauling	4	69	6	1,656					5	88	6	2,640					4,296
Water Truck	1	69	2	138	1	43	2	86	1	88	2	176					400
Total days		69				43				88							200

P2 - Equalization Basin Pipeline (Year 2013)

	Pipeline Unpaved				Pipeline Paved				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	10	6	60	1	8	6	48	108
Jackhammers									0
Roller									0
Paving equipment					1	8	3	24	24
Dozer/Loader	1	10	6	60	1	8	6	48	108
Graders									0
Cranes	1	10	3	30	1	8	3	24	54
Forklifts									0
On-site Hauling									0
Water Truck									0
Total Days		10				8			18

F.5 PROJECT LEVEL EQUIPMENT HOURS

B2-P1 - Dewatering Phase 1 - Sludge Dewatering (Year 2016

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	5	6	30													30
Jackhammers									1	3	6	18					18
Roller									1	2	6	12					12
Paving equipment									1	1	3	3					3
Dozer/Loader									1	3	6	18					18
Graders									1	2	6	12					12
Cranes					1	21	6	128					1	64	6	385	514
Forklifts					1	21	6	128					1	64	6	385	514
On-site Hauling	2	5	6	60					3	3	6	54					114
Water Truck	1	5	2	10	1	21	2	42	1	3	2	6	1	64	1	64	122
Total days		5				21				3				64			93

B2-P1 - Dewatering Phase 1 - Full Mechanical Dewatering Facility (Year 2013

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	11	6	66													66
Jackhammers									1	10	10	100					100
Roller									1	5	6	30					30
Paving equipment									1	1	6	6					6
Dozer/Loader									1	13	6	78					78
Graders									1	10	6	60					60
Cranes					1	43	6	257					1	128	6	770	1,027
Forklifts					1	43	6	257					1	128	6	770	1,027
On-site Hauling	4	11	6	264					4	7	6	168					432
Water Truck	1	11	2	22	1	21	2		1	13	2	26	1	128	1	128	176
Total Days		11				43				13				128			195

F.5 PROJECT LEVEL EQUIPMENT HOURS

B2-P1 - Dewatering Phase 1 - Full Mechanical Dewatering Facility Pipeline (Year 2013

	Pipeline Unpaved				Pipeline Paved				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	30	6	180	1	4	6	24	204
Jackhammers									0
Roller									0
Paving equipment					1	4	3	12	12
Dozer/Loader	1	30	6	180	1	4	6	24	204
Graders									0
Cranes	1	30	3	90	1	4	3	12	102
Forklifts									0
On-site Hauling									0
Water Truck									0
Total Days		30				4			34

B2-P1 - Dewatering Phase 1 - Cake Storage (Year 2015

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	5	6	30													30
Jackhammers									2	4	6	48					48
Roller									1	2	6	12					12
Paving equipment									1	1	3	3					3
Dozer/Loader									1	6	6	36					36
Graders									1	5	6	30					30
Cranes					1	21	6	128					1	64	6	385	514
Forklifts					1	21	6	128					1	64	6	385	514
On-site Hauling	4	5	6	120					3	5	6	90					210
Water Truck	1	5	2	10	1	21	2	42	1	6	2	12	1	64	1	64	128
Total days		5				21				6				64			96

F.5 PROJECT LEVEL EQUIPMENT HOURS

B2-P1 - Dewatering Phase 1 - Side-Stream Nitrogen Removal (Year 2018

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	11	6	66													66
Jackhammers									2	5	6	60					60
Roller									1	7	6	42					42
Paving equipment									1	1	6	6					6
Dozer/Loader									1	14	6	84					84
Graders									1	7	6	42					42
Cranes		1		0	1	43	6	257					1	86	6	514	770
Forklifts		1		0	1	43	6	257					1	86	6	514	770
On-site Hauling	4	7	6	168					4	12	6	288					456
Water Truck	1	11	2	22	1	43	2	86	1	14	2	28	1	86	1	86	222
Total days		11				43				14				86			154

B2-P1 - Dewatering Phase 1 - Side-Stream Nitrogen Removal Pipeline (Year 2018

	Pipeline Unpaved				Pipeline Unpaved				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	36	6	216	1	19	6	111	327
Jackhammers									0
Roller									0
Paving equipment					1	19	3	57	57
Dozer/Loader	1	36	6	216	1	19	6	111	327
Graders									0
Cranes	1	36	3	108	1	19	3	56	164
Forklifts									0
On-site Hauling									0
Water Truck									0
Total Days		36				19			55

F.5 PROJECT LEVEL EQUIPMENT HOURS

B2-P1 - Dewatering Phase 1 - Double-Ended Substation (Year 2015

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	4	6	24													24
Jackhammers									1	3	6	18					18
Roller									1	1	6	6					6
Paving equipment									1	1	3	3					3
Dozer/Loader									1	3	6	18					18
Graders									1	2	6	12					12
Cranes					1	21	6	128					1	128	6	770	899
Forklifts					1	21	6	128					1	128	6	770	899
On-site Hauling	3	3	6	54					3	3	6	54					108
Water Truck	1	4	2	8	1	21	2	43	1	3	2	6	1	128	1	128	233
Total days		4				21				3				128			156

B3-P1 - Covered Lagoons Phase 1 (Year 2015

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	2	108	6	1,296													1,296
Jackhammers									12	207	6	14,904					14,904
Roller									1	156	6	936					936
Paving equipment									1	68	6	408					408
Dozer/Loader									3	145	6	2,610					2,610
Graders									5	150	6	4,500					4,500
Cranes					1	43	6	257					1	128	6	770	1,027
Forklifts					1	43	6	257					1	128	6	770	1,027
On-site Hauling	12	111	6	7,992					12	100	6	7,200					15,192
Water Truck	1	11	4	44	1	43	2	86	1	156	4	624	1	128	1	128	882
Total days		111				43				207				128			489

F.5 PROJECT LEVEL EQUIPMENT HOURS

B4-P1 - Thermal Drying Phase 1 (Year 2016)

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	5	6	30													30
Jackhammers									1	3	18	54					54
Roller									1	2	6	12					12
Paving equipment									1	1	3	2					2
Dozer/Loader									1	3	6	18					18
Graders									1	2	6	12					12
Cranes					1	43	6	257					1	128	6	770	1,027
Forklifts					1	43	6	257					1	128	6	770	1,027
On-site Hauling	2	5	6	60					3	3	6	54					114
Water Truck	1	5	2	10	1	43	2	86	1	3	2	6	1	128	1	128	230
Total days		5				43				3				128			179

B5-P1 - Greenhouse Drying Phase 1 (Year 2016)

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	7	6	42													42
Jackhammers									1	15	6	90					90
Roller									1	5	6	30					30
Paving equipment									1	1	6	6					6
Dozer/Loader									1	12	6	72	1	128	6	770	842
Graders									1	10	6	60	1	128	6	770	830
Cranes					1	43	6	257									257
Forklifts					1	43	6	257									257
On-site Hauling	4	10	6	240					3	10	6	180					420
Water Truck	1	10	2	20	1	43	2	86	1	12	2	24	1	128	1	128	258
Total days		10				43				15				128			196

F.5 PROJECT LEVEL EQUIPMENT HOURS

B6 - Back-up Sludge Pipeline (Year 2015

	14-Inch Pipeline			
Equipment Type	no.	days	hr/day	tot. hrs.
Excavators	1	52	6	309
Jackhammers				
Roller				
Paving equipment				
Dozer/Loader	1	52	6	309
Graders				
Cranes	1	52	3	155
Forklifts				
On-site Hauling				
Water Truck				
Total days		52		52

E2 - Digester Gas Storage (Year 2022)

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	4	6	24													24
Jackhammers									1	3	6	18					18
Roller									1	1	6	6					6
Paving equipment									1	1	1	1					1
Dozer/Loader									1	3	6	18					18
Graders									1	2	6	12					12
Cranes					1	43	6	257					1	128	6	770	1,027
Forklifts					1	43	6	257					1	128	6	770	1,027
On-site Hauling	2	5	6	60					3	3	6	54					114
Water Truck	1	5	2	10	1	43	2	86		3	2	0	1	128	1	128	224
Total days		5				43				3				128			179

F.5 PROJECT LEVEL EQUIPMENT HOURS

E2 - Digester Gas Storage Pipeline (Year 2022)

	Pipeline to Storage Sphere			
Equipment Type	no.	days	hr/day	tot. hrs.
Excavators	1	6	6	36
Jackhammers				
Roller				
Paving equipment				
Dozer/Loader	1	6	6	36
Graders				
Cranes	1	6	3	18
Forklifts				
On-site Hauling				
Water Truck				
Total days		6		6

SF1-P1-100 - Landscaping and Road Repairs Phase 1 (Year 2016

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	4	25	6	600													600
Jackhammers									6	48	6	1,728					1,728
Roller									1	24	6	144					144
Paving equipment									1	17	6	102					102
Dozer/Loader									4	20	6	480					480
Graders									4	45	6	1,080					1,080
Cranes													1	64	6	385	385
Forklifts													1	64	6	385	385
On-site Hauling	10	24	6	1,440					10	19	6	1,140					2,580
Water Truck	10	25	6	1,500					1	48	6	288	1	64	1	64	1,852
Total days		25								48				64			137

F.5 PROJECT LEVEL EQUIPMENT HOURS

SF2 108 - Warehouse (Year 2017)

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	8	6	48													48
Jackhammers									2	11	6	132					132
Roller									1	5	6	30					30
Paving equipment									1	1	6	6					6
Dozer/Loader									1	14	6	84					84
Graders					1	43	6	257	1	13	6	78					335
Cranes					1	43	6	257					1	128	6	770	1,027
Forklifts													1	128	6	770	770
On-site Hauling	5	10	6	300					4	8	6	192					492
Water Truck	1	10	2	20	1	43	2	86	1	14	2	28	1	128	1	128	262
Total days		10				43				14				128			195

F.6 PROJECT ROUND TRIPS

Truck trips include haul, material, and water truck trips as identified in Appendex C. All trips are round trips and it is assumed that there are an average of 21.4 work-days per month.

H1 - Headworks Odor Control (Year 2015)

Construction Phase	Days/Phase	Worker Vehicles		Haul Trucks	
		Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	21	5	107	3	64
Excavation	2	10	20	40	80
Foundation - Rebar	21	10	214	6	128
Foundation - Concrete	3	10	30	14	42
Backfilling	1	10	10	28	28
Mechanical/Electrical	128	10	1,284	4	514
Demobilizatior	21	5	107	4	86
Total	199	NA	1,772	NA	942
Average Daily Trips	NA	8.9		4.7	

P1 - Primary Treatment Odor Control (Year 2015)

Construction Phase	Days/Phase	Worker Vehicles		Haul Trucks	
		Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	21	5	107	5	107
Excavatior	1	10	10	41	41
Foundation - Reba	21	10	214	7	150
Foundation - Concrete	2	10	20	16	32
Backfilling	1	10	5	29	15
Mechanical/Electrica	128	10	1,284	6	770
Demobilizatior	21	5	107	6	128
Total	196	NA	1,747	NA	1,243
Average Daily Trips	NA	8.9		6.3	

P2 - Equalization Basin (Year 2013)

Construction Phase	Days/Phase	Worker Vehicles		Haul Trucks	
		Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	21	10	214	10	214
Excavation	70	40	2,800	392	27,440
Foundation - Rebar	43	20	856	106	4,537
Foundation - Concrete	26	30	780	68	1,768
Backfilling	71	30	2,130	237	16,827
Mechanical/Electrical	0	0	0	0	0
Demobilization	21	10	214	10	214
Pipeline - Unpaved	10	15	150	9	90
Pipeline - Paved	8	15	120	18	144
Total	271	NA	7,264	NA	51,234
Average Daily Trips	NA	26.8		189.3	

F.6 PROJECT ROUND TRIPS

Truck trips include haul, material, and water truck trips as identified in Appendex C. All trips are round trips and it is assumed that there are an average of 21.4 work-days per month.

B2-P1 - Dewatering Phase 1 - Sludge Dewatering (Year 2016)

		Worker Vehicles		Haul Trucks	
Construction Phase	Days/Phase	Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	21	5	107	6	128
Excavation	2	10	20	41	82
Foundation - Rebar	21	10	214	7	150
Foundation - Concrete	3	10	30	16	48
Backfilling	1	10	5	29	15
Mechanical/Electrical	64	5	321	6	385
Demobilization	21	5	107	8	171
Total	134	NA	804	NA	979
Average Daily Trips	NA	6.0		7.3	

B2-P1 - Dewatering Phase 1 - Full Mechanical Dewatering Facility (Year 2013)

		Worker Vehicles		Haul Trucks	
Construction Phase	Days/Phase	Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	43	5	214	49	2,097
Excavation	9	10	90	91	819
Foundation - Rebar	43	10	428	57	2,440
Foundation - Concrete	15	10	150	60	900
Backfilling	3	10	30	79	237
Mechanical/Electrical	128	10	1,284	50	6,420
Demobilization	21	5	107	50	1,070
Pipeline - Unpaved	30	15	450	5	150
Pipeline - Paved	4	15	60	10	40
Total	296	NA	2,813	NA	14,173
Average Daily Trips	NA	9.5		47.8	

B2-P1 - Dewatering Phase 1 - Cake Storage (Year 2015)

		Worker Vehicles		Haul Trucks	
Construction Phase	Days/Phase	Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	21	5	107	50	1,070
Excavation	4	10	40	87	348
Foundation - Rebar	21	10	214	53	1,134
Foundation - Concrete	3	10	30	60	180
Backfilling	1	10	10	75	75
Mechanical/Electrical	64	10	642	50	3,210
Demobilization	21	5	107	50	1,070
Total	136	NA	1,150	NA	7,087
Average Daily Trips	NA	8.4		52.0	

F.6 PROJECT ROUND TRIPS

Truck trips include haul, material, and water truck trips as identified in Appendex C. All trips are round trips and it is assumed that there are an average of 21.4 work-days per month.

B2-P1 - Dewatering Phase 1 - Side-Stream Nitrogen Removal (Year 2018)

Construction Phase	Days/Phase	Worker Vehicles		Haul Trucks	
		Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	43	10	428	50	2,140
Excavation	1	50	50	160	160
Foundation - Rebar	43	20	856	56	2,397
Foundation - Concrete	18	20	360	60	1,080
Backfilling	10	15	150	100	1,000
Mechanical/Electrical	86	0	0	50	4,280
Demobilization	21	10	214	50	1,070
Pipeline - Unpaved	36	15	540	5	180
Pipeline - Paved	19	15	278	11	204
Total	276	NA	2,876	NA	12,510
Average Daily Trips	NA	10.4		45.3	

B2-P1 - Dewatering Phase 1 - Double-Ended Substation (Year 2115)

Construction Phase	Days/Phase	Worker Vehicles		Haul Trucks	
		Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	21	5	107	1	21
Excavation	1	10	10	38	38
Foundation - Rebar	21	10	214	4	86
Foundation - Concrete	2	10	20	12	24
Backfilling	1	10	10	26	26
Mechanical/Electrical	128	15	1,926	3	385
Demobilization	21	5	107	1	21
Total	197	NA	2,394	NA	602
Average Daily Trips	NA	12.2		3.1	

B3-P1 - Covered Lagoons Phase 1 (Year 2015)

Construction Phase	Days/Phase	Worker Vehicles		Haul Trucks	
		Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	43	10	428	50	2,140
Excavation	95	20	1,900	185	17,575
Foundation - Rebar	43	20	856	79	3,381
Foundation - Concrete	140	40	5,600	120	16,800
Backfilling	69	20	1,380	147	10,143
Mechanical/Electrical	128	20	2,568	50	6,420
Demobilization	21	10	214	50	1,070
Total	539	NA	12,946	NA	57,529
Average Daily Trips	NA	24.0		106.7	

F.6 PROJECT ROUND TRIPS

Truck trips include haul, material, and water truck trips as identified in Appendex C. All trips are round trips and it is assumed that there are an average of 21.4 work-days per month.

B4-P1 - Thermal Drying Phase 1 (Year 2016)

		Worker Vehicles		Haul Trucks	
Construction Phase	Days/Phase	Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	21	5	107	49	1,049
Excavation	2	10	20	86	172
Foundation - Rebar	43	10	428	52	2,226
Foundation - Concrete	3	10	30	60	180
Backfilling	1	10	5	74	37
Mechanical/Electrical	128	10	1,284	50	6,420
Demobilization	21	5	107	50	1,070
Total	220	NA	1,981	NA	11,153
Average Daily Trips	NA	9.0		50.8	

B5-P1 - Greenhouse Drying Phase 1 (Year 2016)

		Worker Vehicles		Haul Trucks	
Construction Phase	Days/Phase	Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	43	10	428	7	300
Excavation	8	10	80	47	376
Foundation - Rebar	43	10	428	13	556
Foundation - Concrete	14	10	140	17	238
Backfilling	3	10	30	35	105
Mechanical/Electrical	128	10	1,284	7	899
Demobilization	21	5	107	6	128
Total	260	NA	2,497	NA	2,602
Average Daily Trips	NA	9.6		10.0	

B6 - Back-up Sludge Pipeline (Year 2015)

		Worker Vehicles		Haul Trucks	
Construction Phase	Days/Phase	Trips/day	Trips/Phase	Trips/day	Trips/Phase
14-inch Pipeline	52	15	773	156	8,034
Total	52	NA	773	NA	8,034
Average Daily Trips	NA	15.0		156.0	

E2 - Digester Gas Storage (Year 2022)

		Worker Vehicles		Haul Trucks	
Construction Phase	Days/Phase	Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	43	5	214	4	171
Excavation	1	10	10	41	41
Foundation - Rebar	43	10	428	7	300
Foundation - Concrete	2	10	20	15	30
Backfilling	1	10	10	29	29
Mechanical/Electrical	128	10	1,284	5	642
Demobilization	21	5	107	4	86
Pipeline to Storage Sphere	6	15	90	49	294
Total	245	NA	2,163	NA	1,592
Average Daily Trips	NA	8.8		6.5	

F.6 PROJECT ROUND TRIPS

Truck trips include haul, material, and water truck trips as identified in Appendex C. All trips are round trips and it is assumed that there are an average of 21.4 work-days per month.

SF1-P1 - Landscaping and Road Repairs Phase 1 (Year 2016)

Construction Phase	Days/Phase	Worker Vehicles		Haul Trucks	
		Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	21	10	214	2	43
Excavation	18	15	270	209	3,762
Foundation - Rebar	0	0	0	0	0
Foundation - Concrete	0	0	0	0	0
Backfilling	13	15	195	161	2,093
Mechanical/Electrical	64	10	642	2	128
Demobilization	21	10	214	2	43
Total	138	NA	1,535	NA	6,069
Average Daily Trips	NA	11.1		44.0	

SF2 108 - Warehouse (Year 2017)

Construction Phase	Days/Phase	Worker Vehicles		Haul Trucks	
		Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	43	5	214	3	128
Excavation	11	10	110	44	484
Foundation - Rebar	43	10	428	6	257
Foundation - Concrete	20	10	200	12	240
Backfilling	4	10	40	40	160
Mechanical/Electrical	128	10	1,284	4	514
Demobilization	21	5	107	6	128
Total	270	NA	2,383	NA	1,911
Average Daily Trips	NA	8.8		7.1	

F.7 ON-ROAD EMISSION FACTORS

Emission Factors

Vehicle Type (Calendar Year)	Running Exhaust Emission Factors (grams/mile				
	ROG	TOG	NOx	PM10*	PM2.5*
Light duty truck (2013)	0.3930	0.4280	0.3970	0.0500	0.0230
Heavy duty truck (2013)	0.4630	0.5270	12.1450	0.4120	0.3210
Light duty truck (2015)	0.3280	0.3570	0.3260	0.0490	0.0220
Heavy duty truck (2015)	0.2730	0.3110	9.8590	0.2450	0.1710
Light duty truck (2016)	0.3020	0.3280	0.2960	0.0490	0.0220
Heavy duty truck (2016)	0.1650	0.1880	8.3500	0.1700	0.1010
Light duty truck (2017)	0.2770	0.3010	0.2680	0.0490	0.0210
Heavy duty truck (2017)	0.1530	0.1740	7.6070	0.1580	0.0900
Light duty truck (2018)	0.2530	0.2760	0.2430	0.0490	0.0210
Heavy duty truck (2018)	0.1560	0.1780	6.9370	0.1580	0.0900
Light duty truck (2022)	0.1990	0.2160	0.1740	0.0480	0.0210
Heavy duty truck (2022)	0.1860	0.2120	1.8210	0.1520	0.0850

*PM10 and PM2.5 emission factors include tire and break wear.

Vehicle Type (Calendar Year)	Start and Evap. Loss Emiss. Factors (g/veh/day)				
	ROG	TOG	NOx	PM10	PM2.5
Light duty truck - 2013	7.5360	7.7870	2.3870	0.0380	0.0340
Light duty truck - 2015	6.5980	6.8020	2.0200	0.0330	0.0300
Light duty truck - 2016	6.1710	6.3540	1.8510	0.0320	0.0290
Light duty truck - 2017	5.7760	5.9400	1.6950	0.0320	0.0290
Light duty truck - 2018	5.4000	5.5480	1.5500	0.3000	0.0270
Light duty truck - 2022	4.2570	4.3590	1.1120	0.0280	0.0260

Vehicle emission factors were obtained from EMFAC2011 for Santa Clara County.
Heavy truck = T7 Single Construction
Light duty truck = LDT1

F.8 AVERAGE DAILY OFF-SITE CONSTRUCTION EXHAUST EMISSIONS

H1 - Headworks Odor Control (Year 2015)

Vehicle Type	Trips/proj	miles/trip	days	ROG	TOG	NOx	PM10	PM2.5
Light duty truck (2015)	1,772	40	199	54.14	58.76	51.83	7.67	3.45
Heavy duty truck (2015)	942	10	199	5.67	6.46	204.70	5.09	3.55
Total Emissions (pounds/improvement)				59.81	65.22	256.53	12.76	7.00
Average Daily Emissions (average lbs/day)				0.30	0.33	1.29	0.06	0.04

P1 - Primary Treatment Odor Control (Year 2015)

Vehicle Type	Trips/proj	miles/trip	days	ROG	TOG	NOx	PM10	PM2.5
Light duty truck (2015)	1,747	40	196	53.38	57.94	51.10	7.56	3.40
Heavy duty truck (2015)	1,243	10	196	7.48	8.52	270.19	6.71	4.69
Total Emissions (pounds/improvement)				60.86	66.46	321.28	14.28	8.09
Average Daily Emissions (average lbs/day)				0.31	0.34	1.64	0.07	0.04

P2 - Equalization Basin (Year 2013)

Vehicle Type	Trips/proj	miles/trip	days	ROG	TOG	NOx	PM10	PM2.5
Light duty truck (2013)	7,264	40	271	256.24	278.81	255.73	32.05	14.75
Heavy duty truck (2013)	51,234	10	271	522.96	595.24	13,717.69	465.35	362.57
Total Emissions (pounds/improvement)				779.19	874.05	13,973.42	497.40	377.32
Average Daily Emissions (average lbs/day)				2.88	3.23	51.64	1.84	1.39

B2-P1 - Dewatering Phase 1 - Sludge Dewatering (Year 2016)

Vehicle Type	Trips/proj	miles/trip	days	ROG	TOG	NOx	PM10	PM2.5
Light duty truck (2013)	804	40	134	23.23	25.13	21.53	3.48	1.57
Heavy duty truck (2013)	979	10	134	3.56	4.06	180.24	3.67	2.18
Total Emissions (pounds/improvement)				26.79	29.19	201.77	7.15	3.75
Average Daily Emissions (average lbs/day)				0.20	0.22	1.51	0.05	0.03

B2-P1 - Dewatering Phase 1 - Full Mechanical Dewatering Facility (Year 2013)

Vehicle Type	Trips/proj	miles/trip	days	ROG	TOG	NOx	PM10	PM2.5
Light duty truck (2013)	2,813	40	296	102.41	111.26	100.04	12.43	5.73
Heavy duty truck (2013)	14,173	10	296	144.67	164.66	3,794.72	128.73	100.30
Total Emissions (pounds/improvement)				247.08	275.92	3,894.76	141.16	106.02
Average Daily Emissions (average lbs/day)				0.83	0.93	13.14	0.48	0.36

B2-P1 - Dewatering Phase 1 - Cake Storage (Year 2015)

Vehicle Type	Trips/proj	miles/trip	days	ROG	TOG	NOx	PM10	PM2.5
Light duty truck (2013)	1,150	40	136	35.25	38.25	33.67	4.98	2.24
Heavy duty truck (2013)	7,087	10	136	42.65	48.59	1,540.40	38.28	26.72
Total Emissions (pounds/improvement)				77.90	86.84	1,574.07	43.26	28.96
Average Daily Emissions (average lbs/day)				0.57	0.64	11.54	0.32	0.21

B2-P1 - Dewatering Phase 1 - Side-Stream Nitrogen Removal (Year 2018)

Vehicle Type	Trips/proj	miles/trip	days	ROG	TOG	NOx	PM10	PM2.5
Light duty truck (2018)	2,876	40	276	67.44	73.36	62.56	12.61	5.34
Heavy duty truck (2018)	12,510	10	276	43.02	49.09	1,913.23	43.58	24.82
Total Emissions (pounds/improvement)				110.47	122.46	1,975.79	56.18	30.16
Average Daily Emissions (average lbs/day)				0.40	0.44	7.16	0.20	0.11

B2-P1 - Dewatering Phase 1 - Double-Ended Substation (Year 2115)

Vehicle Type	Trips/proj	miles/trip	days	ROG	TOG	NOx	PM10	PM2.5
Light duty truck (2013)	2,394	40	197	72.10	78.31	69.70	10.36	4.66
Heavy duty truck (2013)	602	10	197	3.62	4.12	130.76	3.25	2.27
Total Emissions (pounds/improvement)				75.72	82.44	200.46	13.61	6.93
Average Daily Emissions (average lbs/day)				0.39	0.42	1.02	0.07	0.04

F.8 AVERAGE DAILY OFF-SITE CONSTRUCTION EXHAUST EMISSIONS

B3-P1 - Covered Lagoons Phase 1 (Year 2015)

Vehicle Type	Trips/proj	miles/trip	days	ROG	TOG	NOx	PM10	PM2.5
Light duty truck (2015)	12,946	40	539	382.30	415.65	374.57	55.98	25.15
Heavy duty truck (2015)	57,529	10	539	346.24	394.44	12,503.98	310.73	216.88
Total Emissions (pounds/improvement)				728.54	810.08	12,878.55	366.71	242.03
Average Daily Emissions (average lbs/day)				1.35	1.50	23.88	0.68	0.45

B4-P1 - Thermal Drying Phase 1 (Year 2016)

Vehicle Type	Trips/proj	miles/trip	days	ROG	TOG	NOx	PM10	PM2.5
Light duty truck (2016)	1,981	40	220	55.74	60.37	52.60	8.58	3.86
Heavy duty truck (2016)	11,153	10	220	40.57	46.23	2,053.11	41.80	24.83
Total Emissions (pounds/improvement)				96.31	106.60	2,105.72	50.38	28.69
Average Daily Emissions (average lbs/day)				0.44	0.49	9.59	0.23	0.13

B5-P1 - Greenhouse Drying Phase 1 (Year 2016)

Vehicle Type	Trips/proj	miles/trip	days	ROG	TOG	NOx	PM10	PM2.5
Light duty truck (2016)	2,497	40	260	70.04	75.87	66.24	10.81	4.86
Heavy duty truck (2016)	2,602	10	260	9.47	10.79	479.02	9.75	5.79
Total Emissions (pounds/improvement)				79.51	86.66	545.26	20.56	10.66
Average Daily Emissions (average lbs/day)				0.31	0.33	2.09	0.08	0.04

B6 - Back-up Sludge Pipeline (Year 2015)

Vehicle Type	Trips/proj	miles/trip	days	ROG	TOG	NOx	PM10	PM2.5
Light duty truck (2015)	773	40	52	23.09	25.09	22.44	3.34	1.50
Heavy duty truck (2015)	8,034	10	52	48.35	55.08	1,746.19	43.39	30.29
Total Emissions (pounds/improvement)				71.45	80.17	1,768.63	46.74	31.79
Average Daily Emissions (average lbs/day)				1.39	1.56	34.34	0.91	0.62

E2 - Digester Gas Storage (Year 2022)

Vehicle Type	Trips/proj	miles/trip	days	ROG	TOG	NOx	PM10	PM2.5
Light duty truck (2022)	2,163	40	245	40.26	43.56	33.79	9.17	4.02
Heavy duty truck (2022)	1,592	10	245	6.53	7.44	63.93	5.34	2.98
Total Emissions (pounds/improvement)				46.79	51.00	97.72	14.51	7.00
Average Daily Emissions (average lbs/day)				0.19	0.21	0.40	0.06	0.03

SF1-P1 - Landscaping and Road Repairs Phase 1 (Year 2016)

Vehicle Type	Trips/proj	miles/trip	days	ROG	TOG	NOx	PM10	PM2.5
Light duty truck (2016)	1,535	40	138	42.76	46.33	40.63	6.64	2.99
Heavy duty truck (2016)	6,069	10	138	22.08	25.15	1,117.20	22.75	13.51
Total Emissions (pounds/improvement)				64.83	71.49	1,157.83	29.39	16.50
Average Daily Emissions (average lbs/day)				0.47	0.52	8.39	0.21	0.12

SF2 108 - Warehouse (Year 2017)

Vehicle Type	Trips/proj	miles/trip	days	ROG	TOG	NOx	PM10	PM2.5
Light duty truck (2018)	2,383	40	270	61.65	66.79	57.33	10.32	4.43
Heavy duty truck (2018)	1,911	10	270	6.45	7.33	320.51	6.66	3.79
Total Emissions (pounds/improvement)				68.10	74.12	377.84	16.97	8.22
Average Daily Emissions (average lbs/day)				0.25	0.27	1.40	0.06	0.03

All trips per day are roundtrips.

F.9 OFF-ROAD CONSTRUCTION EQUIPMENT EMISSION FACTORS PER CALENDAR YEA

Calendar Year 2013

Equipment	Offroad HP Range	Equipment Emission Rates (lb/hour)				
		ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	176 to 250	0.063	0.072	0.918	0.030	0.027
Jackhammers* (25 hp)	1 to 50	0.047	0.054	0.172	0.016	0.015
Roller (95 hp)	51 to 120	0.056	0.064	0.489	0.037	0.034
Paving Equipment (175 hp)	121 to 175	0.081	0.092	0.882	0.044	0.041
Dozer/Loader (105 hp)	51 to 120	0.044	0.050	0.396	0.032	0.029
Graders (173 hp)	121 to 175	0.120	0.136	1.178	0.066	0.061
Cranes (150 hp)	121 to 175	0.081	0.092	0.830	0.045	0.041
Forklifts (150 hp)	121 to 175	0.030	0.034	0.458	0.018	0.017
Dump Truck (350 hp)	251 to 500	0.140	0.159	1.600	0.062	0.057
Water Truck (189 hp)	176 to 250	0.099	0.113	1.093	0.048	0.044

Calendar Year 2015

Equipment	Offroad HP Range	Equipment Emission Rates (lb/hour)				
		ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	176 to 250	0.058	0.066	0.793	0.026	0.024
Jackhammers* (25 hp)	1 to 50	0.044	0.050	0.167	0.015	0.014
Roller (95 hp)	51 to 120	0.053	0.060	0.458	0.034	0.032
Paving Equipment (175 hp)	121 to 175	0.075	0.086	0.813	0.041	0.038
Dozer/Loader (105 hp)	51 to 120	0.041	0.046	0.368	0.029	0.027
Graders (173 hp)	121 to 175	0.119	0.136	1.166	0.066	0.061
Cranes (150 hp)	121 to 175	0.079	0.090	0.799	0.043	0.040
Forklifts (150 hp)	121 to 175	0.028	0.031	0.407	0.016	0.015
Dump Truck (350 hp)	251 to 500	0.131	0.150	1.478	0.057	0.053
Water Truck (189 hp)	176 to 250	0.095	0.108	1.004	0.045	0.041

Calendar Year 2016

Equipment	Offroad HP Range	Equipment Emission Rates (lb/hour)				
		ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	176 to 250	0.055	0.062	0.720	0.024	0.022
Jackhammers* (25 hp)	1 to 50	0.042	0.048	0.164	0.015	0.013
Roller (95 hp)	51 to 120	0.050	0.057	0.435	0.032	0.030
Paving Equipment (175 hp)	121 to 175	0.068	0.078	0.732	0.037	0.034
Dozer/Loader (105 hp)	51 to 120	0.039	0.044	0.353	0.027	0.025
Graders (173 hp)	121 to 175	0.118	0.134	1.143	0.065	0.059
Cranes (150 hp)	121 to 175	0.076	0.087	0.771	0.042	0.039
Forklifts (150 hp)	121 to 175	0.026	0.030	0.379	0.015	0.014
Dump Truck (350 hp)	251 to 500	0.126	0.144	1.393	0.054	0.050
Water Truck (189 hp)	176 to 250	0.094	0.107	0.970	0.043	0.040

Calendar Year 2017

Equipment	Offroad HP Range	Equipment Emission Rates (lb/hour)				
		ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	176 to 250	0.051	0.059	0.652	0.022	0.020
Jackhammers* (25 hp)	1 to 50	0.041	0.047	0.162	0.014	0.013
Roller (95 hp)	51 to 120	0.047	0.054	0.416	0.031	0.028
Paving Equipment (175 hp)	121 to 175	0.064	0.073	0.679	0.034	0.031
Dozer/Loader (105 hp)	51 to 120	0.037	0.042	0.333	0.025	0.023
Graders (173 hp)	121 to 175	0.114	0.130	1.105	0.063	0.058
Cranes (150 hp)	121 to 175	0.075	0.085	0.753	0.041	0.038
Forklifts (150 hp)	121 to 175	0.025	0.028	0.344	0.014	0.012
Dump Truck (350 hp)	251 to 500	0.120	0.137	1.305	0.051	0.047
Water Truck (189 hp)	176 to 250	0.088	0.100	0.891	0.040	0.037

F.9 OFF-ROAD CONSTRUCTION EQUIPMENT EMISSION FACTORS PER CALENDAR YEAR

Calendar Year 2018

Equipment	Offroad HP Range	Equipment Emission Rates (lb/hour)				
		ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	176 to 250	0.044	0.050	0.519	0.017	0.016
Jackhammers* (25 hp)	1 to 50	0.036	0.041	0.154	0.012	0.011
Roller (95 hp)	51 to 120	0.040	0.045	0.361	0.025	0.023
Paving Equipment (175 hp)	121 to 175	0.055	0.063	0.584	0.029	0.027
Dozer/Loader (105 hp)	51 to 120	0.032	0.036	0.295	0.021	0.020
Graders (173 hp)	121 to 175	0.107	0.122	1.028	0.058	0.053
Cranes (150 hp)	121 to 175	0.072	0.082	0.717	0.039	0.036
Forklifts (150 hp)	121 to 175	0.022	0.025	0.287	0.011	0.010
Dump Truck (350 hp)	251 to 500	0.107	0.122	1.114	0.043	0.039
Water Truck (189 hp)	176 to 250	0.076	0.087	0.754	0.033	0.030

Calendar Year 2022

Equipment	Offroad HP Range	Equipment Emission Rates (lb/hour)				
		ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	176 to 250	0.030	0.035	0.267	0.009	0.008
Jackhammers* (25 hp)	1 to 50	0.024	0.028	0.129	0.007	0.007
Roller (95 hp)	51 to 120	0.027	0.031	0.260	0.016	0.015
Paving Equipment (175 hp)	121 to 175	0.035	0.040	0.345	0.017	0.015
Dozer/Loader (105 hp)	51 to 120	0.021	0.024	0.195	0.011	0.011
Graders (173 hp)	121 to 175	0.081	0.092	0.754	0.042	0.039
Cranes (150 hp)	121 to 175	0.059	0.067	0.574	0.032	0.029
Forklifts (150 hp)	121 to 175	0.014	0.016	0.157	0.006	0.005
Dump Truck (350 hp)	251 to 500	0.077	0.087	0.636	0.024	0.022
Water Truck (189 hp)	176 to 250	0.052	0.059	0.432	0.018	0.016

Notes:
All emission rates were derived using the 2011 Offroad emissions inventory database. PM10 and PM2.5 emissions are

based on PM emissions with PM10 and PM2.5 fractions applied to the PM EF (SCAQMD, 2006); PM = PM10; PM2.5 = PM*0.92. ROG and TOG emissions are based on THC emissions with conversion factors recommended by CARB (2000). ROG = HC*1.26639; TOG = HC*1.4447

References:
CARB (California Air Resources Board), 2000.
SCAQMD (South Coast Air Quality Management District). 2006.

F.10 AVERAGE DAILY ON-SITE CONSTRUCTION EXHAUST EMISSIONS

H1 - Headworks Odor Control (Year 2015)

		Total Emissions (pounds)				
Equipment	Total Hours	ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	30	1.74	1.98	23.80	0.77	0.71
Jackhammers* (25 hp)	18	0.79	0.90	3.01	0.27	0.25
Roller (95 hp)	12	0.63	0.72	5.50	0.41	0.38
Paving Equipment (175 hp)	3	0.23	0.26	2.44	0.12	0.11
Dozer/Loader (105 hp)	18	0.73	0.83	6.62	0.52	0.48
Graders (173 hp)	12	1.43	1.63	14.00	0.79	0.73
Cranes (150 hp)	899	70.87	80.68	718.43	39.05	35.93
Forklifts (150 hp)	899	24.82	28.25	366.07	14.46	13.30
Dump Truck (350 hp)	114	14.98	17.05	168.44	6.55	6.02
Water Truck (189 hp)	186	17.72	20.17	186.83	8.31	7.64
Total (pounds) =		133.93	152.47	1,495.15	71.26	65.56
Average Daily (pounds/day) =		0.85	0.97	9.46	0.45	0.41

P1 - Primary Treatment Odor Control (Year 2015)

		Total Emissions (pounds)				
Equipment	Total Hours	ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	18	1.04	1.19	14.28	0.46	0.43
Jackhammers* (25 hp)	6	0.26	0.30	1.00	0.09	0.08
Roller (95 hp)	3	0.16	0.18	1.38	0.10	0.09
Paving Equipment (175 hp)	18	1.36	1.55	14.64	0.74	0.68
Dozer/Loader (105 hp)	12	0.49	0.55	4.42	0.35	0.32
Graders (173 hp)	899	107.40	122.27	1,048.35	59.15	54.42
Cranes (150 hp)	899	70.87	80.68	718.43	39.05	35.93
Forklifts (150 hp)	90	2.48	2.83	36.66	1.45	1.33
Dump Truck (350 hp)	184	24.17	27.52	271.87	10.57	9.72
Water Truck (189 hp)	156	14.86	16.92	156.70	6.97	6.41
Total (pounds) =		223.10	253.99	2,267.72	118.93	109.42
Average Daily (pounds/day) =		1.43	1.63	14.54	0.76	0.70

P2 - Equalization Basin (Year 2013)

		Total Emissions (pounds)				
Equipment	Total Hours	ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	414	26.14	29.76	380.23	12.22	11.25
Jackhammers* (25 hp)	1,098	51.84	59.02	188.57	17.87	16.44
Roller (95 hp)	378	21.10	24.02	184.86	13.82	12.71
Paving Equipment (175 hp)	3	0.24	0.28	2.64	0.13	0.12
Dozer/Loader (105 hp)	1,752	76.44	87.02	693.20	55.24	50.82
Graders (173 hp)	696	83.30	94.83	820.14	45.97	42.29
Cranes (150 hp)	257	20.85	23.73	213.06	11.50	10.58
Forklifts (150 hp)	257	7.62	8.68	117.59	4.65	4.28
Dump Truck (350 hp)	4,296	600.55	683.69	6,875.27	268.10	246.65
Water Truck (189 hp)	400	39.67	45.17	437.15	19.07	17.54
Total (pounds) =		927.75	1,056.18	9,912.71	448.57	412.69
Average Daily (pounds/day) =		4.64	5.28	49.56	2.24	2.06

F.10 AVERAGE DAILY ON-SITE CONSTRUCTION EXHAUST EMISSIONS

P2 - Equalization Basin Pipeline (Year 2013)

Equipment	Total Hours	Total Emissions (pounds) ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	108	6.82	7.76	99.19	3.19	2.93
Jackhammers* (25 hp)	0	0.00	0.00	0.00	0.00	0.00
Roller (95 hp)	0	0.00	0.00	0.00	0.00	0.00
Paving Equipment (175 hp)	24	1.94	2.21	21.16	1.06	0.98
Dozer/Loader (105 hp)	108	4.71	5.36	42.73	3.41	3.13
Graders (173 hp)	0	0.00	0.00	0.00	0.00	0.00
Cranes (150 hp)	54	4.38	4.99	44.80	2.42	2.22
Forklifts (150 hp)	0	0.00	0.00	0.00	0.00	0.00
Dump Truck (350 hp)	0	0.00	0.00	0.00	0.00	0.00
Water Truck (189 hp)	0	0.00	0.00	0.00	0.00	0.00
Total (pounds) =		17.85	20.32	207.88	10.07	9.27
Average Daily (pounds/day) =		0.99	1.13	11.55	0.56	0.51

B2-P1 - Dewatering Phase 1 - Sludge Dewatering (Year 2016)

Equipment	Total Hours	Total Emissions (pounds) ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	30	1.64	1.87	21.61	0.71	0.65
Jackhammers* (25 hp)	18	0.76	0.87	2.96	0.26	0.24
Roller (95 hp)	12	0.60	0.68	5.22	0.39	0.36
Paving Equipment (175 hp)	3	0.21	0.23	2.20	0.11	0.10
Dozer/Loader (105 hp)	18	0.70	0.80	6.36	0.49	0.45
Graders (173 hp)	12	1.41	1.61	13.71	0.78	0.71
Cranes (150 hp)	514	39.21	44.64	395.91	21.57	19.84
Forklifts (150 hp)	514	13.48	15.35	194.80	7.66	7.05
Dump Truck (350 hp)	114	14.39	16.38	158.82	6.19	5.70
Water Truck (189 hp)	122	11.44	13.02	118.28	5.31	4.88
Total (pounds) =		83.84	95.44	919.87	43.47	39.99
Average Daily (pounds/day) =		0.90	1.03	9.89	0.47	0.43

B2-P1 - Dewatering Phase 1 - Full Mechanical Dewatering Facility (Year 2013)

Equipment	Total Hours	Total Emissions (pounds) ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	66	4.17	4.74	60.62	1.95	1.79
Jackhammers* (25 hp)	100	4.72	5.38	17.17	1.63	1.50
Roller (95 hp)	30	1.67	1.91	14.67	1.10	1.01
Paving Equipment (175 hp)	6	0.48	0.55	5.29	0.27	0.24
Dozer/Loader (105 hp)	78	3.40	3.87	30.86	2.46	2.26
Graders (173 hp)	60	7.18	8.17	70.70	3.96	3.65
Cranes (150 hp)	1,027	83.39	94.93	852.22	45.98	42.30
Forklifts (150 hp)	1,027	30.48	34.70	470.35	18.61	17.12
Dump Truck (350 hp)	432	60.39	68.75	691.37	26.96	24.80
Water Truck (189 hp)	176	17.46	19.87	192.35	8.39	7.72
Total (pounds) =		213.35	242.88	2,405.60	111.30	102.39
Average Daily (pounds/day) =		1.09	1.25	12.34	0.57	0.53

F.10 AVERAGE DAILY ON-SITE CONSTRUCTION EXHAUST EMISSIONS

B2-P1 - Dewatering Phase 1 - Full Mechanical Dewatering Facility Pipeline (Year 2013)

		Total Emissions (pounds)				
Equipment	Total Hours	ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	204	12.88	14.66	187.36	6.02	5.54
Jackhammers* (25 hp)	0	0.00	0.00	0.00	0.00	0.00
Roller (95 hp)	0	0.00	0.00	0.00	0.00	0.00
Paving Equipment (175 hp)	12	0.97	1.10	10.58	0.53	0.49
Dozer/Loader (105 hp)	204	8.90	10.13	80.72	6.43	5.92
Graders (173 hp)	0	0.00	0.00	0.00	0.00	0.00
Cranes (150 hp)	102	8.28	9.43	84.62	4.57	4.20
Forklifts (150 hp)	0	0.00	0.00	0.00	0.00	0.00
Dump Truck (350 hp)	0	0.00	0.00	0.00	0.00	0.00
Water Truck (189 hp)	0	0.00	0.00	0.00	0.00	0.00
Total (pounds) =		31.03	35.32	363.28	17.55	16.15
Average Daily (pounds/day) =		0.91	1.04	10.68	0.52	0.47

B2-P1 - Dewatering Phase 1 - Cake Storage (Year 2015)

		Total Emissions (pounds)				
Equipment	Total Hours	ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	30	1.74	1.98	23.80	0.77	0.71
Jackhammers* (25 hp)	48	2.10	2.39	8.03	0.73	0.67
Roller (95 hp)	12	0.63	0.72	5.50	0.41	0.38
Paving Equipment (175 hp)	3	0.23	0.26	2.44	0.12	0.11
Dozer/Loader (105 hp)	36	1.46	1.66	13.25	1.04	0.96
Graders (173 hp)	30	3.58	4.08	34.99	1.97	1.82
Cranes (150 hp)	514	40.50	46.10	410.53	22.32	20.53
Forklifts (150 hp)	514	14.18	16.14	209.18	8.26	7.60
Dump Truck (350 hp)	210	27.59	31.41	310.29	12.06	11.10
Water Truck (189 hp)	128	12.19	13.88	128.57	5.72	5.26
Total (pounds) =		104.20	118.63	1,146.58	53.41	49.14
Average Daily (pounds/day) =		1.09	1.24	11.94	0.56	0.51

B2-P1 - Dewatering Phase 1 - Side-Stream Nitrogen Removal (Year 2018)

		Total Emissions (pounds)				
Equipment	Total Hours	ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	66	2.89	3.29	34.28	1.14	1.05
Jackhammers* (25 hp)	60	2.15	2.45	9.21	0.74	0.68
Roller (95 hp)	42	1.67	1.90	15.17	1.07	0.98
Paving Equipment (175 hp)	6	0.33	0.38	3.50	0.17	0.16
Dozer/Loader (105 hp)	84	2.68	3.05	24.81	1.80	1.66
Graders (173 hp)	42	4.49	5.11	43.18	2.44	2.24
Cranes (150 hp)	770	55.16	62.79	552.18	30.19	27.77
Forklifts (150 hp)	770	16.66	18.96	220.91	8.56	7.88
Dump Truck (350 hp)	456	48.91	55.68	508.13	19.49	17.93
Water Truck (189 hp)	222	16.96	19.31	167.45	7.25	6.67
Total (pounds) =		151.89	172.92	1,578.82	72.85	67.03
Average Daily (pounds/day) =		0.99	1.12	10.25	0.47	0.44

F.10 AVERAGE DAILY ON-SITE CONSTRUCTION EXHAUST EMISSIONS

B2-P1 - Dewatering Phase 1 - Side-Stream Nitrogen Removal Pipeline (Year 2018)

Equipment	Total Hours	Total Emissions (pounds)				
		ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	327	14.30	16.28	169.84	5.64	5.19
Jackhammers* (25 hp)	0	0.00	0.00	0.00	0.00	0.00
Roller (95 hp)	0	0.00	0.00	0.00	0.00	0.00
Paving Equipment (175 hp)	57	3.16	3.60	33.28	1.65	1.52
Dozer/Loader (105 hp)	327	10.43	11.87	96.58	7.00	6.44
Graders (173 hp)	0	0.00	0.00	0.00	0.00	0.00
Cranes (150 hp)	164	11.71	13.33	117.19	6.41	5.89
Forklifts (150 hp)	0	0.00	0.00	0.00	0.00	0.00
Dump Truck (350 hp)	0	0.00	0.00	0.00	0.00	0.00
Water Truck (189 hp)	0	0.00	0.00	0.00	0.00	0.00
Total (pounds) =		39.59	45.08	416.89	20.70	19.04
Average Daily (pounds/day) =		0.72	0.82	7.58	0.38	0.35

B2-P1 - Dewatering Phase 1 - Double-Ended Substation (Year 2015)

Equipment	Total Hours	Total Emissions (pounds)				
		ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	24	1.39	1.58	19.04	0.62	0.57
Jackhammers* (25 hp)	18	0.79	0.90	3.01	0.27	0.25
Roller (95 hp)	6	0.32	0.36	2.75	0.21	0.19
Paving Equipment (175 hp)	3	0.23	0.26	2.44	0.12	0.11
Dozer/Loader (105 hp)	18	0.73	0.83	6.62	0.52	0.48
Graders (173 hp)	12	1.43	1.63	14.00	0.79	0.73
Cranes (150 hp)	899	70.87	80.68	718.43	39.05	35.93
Forklifts (150 hp)	899	24.82	28.25	366.07	14.46	13.30
Dump Truck (350 hp)	108	14.19	16.15	159.58	6.20	5.71
Water Truck (189 hp)	233	22.18	25.25	233.84	10.40	9.56
Total (pounds) =		136.94	155.90	1,525.78	72.64	66.83
Average Daily (pounds/day) =		0.88	1.00	9.78	0.47	0.43

B3-P1 - Covered Lagoons Phase 1 (Year 2015)

Equipment	Total Hours	Total Emissions (pounds)				
		ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	1,296	75.04	85.43	1,028.12	33.45	30.78
Jackhammers* (25 hp)	14,904	651.87	742.11	2,493.23	226.39	208.28
Roller (95 hp)	936	49.18	55.98	429.02	32.09	29.53
Paving Equipment (175 hp)	408	30.78	35.04	331.85	16.69	15.35
Dozer/Loader (105 hp)	2,610	105.99	120.66	960.32	75.49	69.45
Graders (173 hp)	4,500	537.72	612.16	5,248.74	296.15	272.46
Cranes (150 hp)	1,027	81.00	92.21	821.06	44.63	41.06
Forklifts (150 hp)	1,027	28.36	32.29	418.37	16.52	15.20
Dump Truck (350 hp)	15,192	1,995.94	2,272.24	22,447.29	872.70	802.88
Water Truck (189 hp)	882	84.03	95.66	885.95	39.39	36.24
Total (pounds) =		3,639.91	4,143.79	35,063.94	1,653.51	1,521.23
Average Daily (pounds/day) =		7.44	8.47	71.71	3.38	3.11

F.10 AVERAGE DAILY ON-SITE CONSTRUCTION EXHAUST EMISSIONS

B4-P1 - Thermal Drying Phase 1 (Year 2016)

		Total Emissions (pounds)				
Equipment	Total Hours	ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	30	1.64	1.87	21.61	0.71	0.65
Jackhammers* (25 hp)	54	2.28	2.60	8.88	0.79	0.73
Roller (95 hp)	12	0.60	0.68	5.22	0.39	0.36
Paving Equipment (175 hp)	2	0.10	0.12	1.10	0.06	0.05
Dozer/Loader (105 hp)	18	0.70	0.80	6.36	0.49	0.45
Graders (173 hp)	12	1.41	1.61	13.71	0.78	0.71
Cranes (150 hp)	1,027	78.42	89.28	791.82	43.14	39.68
Forklifts (150 hp)	1,027	26.97	30.70	389.59	15.32	14.10
Dump Truck (350 hp)	114	14.39	16.38	158.82	6.19	5.70
Water Truck (189 hp)	230	21.56	24.55	222.99	10.00	9.20
Total (pounds) =		148.07	168.57	1,620.12	77.86	71.63
Average Daily (pounds/day) =		0.83	0.94	9.05	0.43	0.40

B5-P1 - Greenhouse Drying Phase 1 (Year 2016)

		Total Emissions (pounds)				
Equipment	Total Hours	ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	42	2.30	2.61	30.26	0.99	0.91
Jackhammers* (25 hp)	90	3.80	4.33	14.80	1.31	1.21
Roller (95 hp)	30	1.50	1.70	13.06	0.97	0.89
Paving Equipment (175 hp)	6	0.41	0.47	4.39	0.22	0.20
Dozer/Loader (105 hp)	842	32.84	37.38	297.47	23.10	21.25
Graders (173 hp)	830	97.66	111.18	948.96	53.63	49.34
Cranes (150 hp)	257	19.61	22.32	197.96	10.78	9.92
Forklifts (150 hp)	257	6.74	7.67	97.40	3.83	3.52
Dump Truck (350 hp)	420	53.01	60.34	585.14	22.81	20.98
Water Truck (189 hp)	258	24.19	27.54	250.14	11.22	10.32
Total (pounds) =		242.04	275.55	2,439.57	128.88	118.57
Average Daily (pounds/day) =		1.23	1.41	12.45	0.66	0.60

B6 - Back-up Sludge Pipeline (Year 2015)

		Total Emissions (pounds)				
Equipment	Total Hours	ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	309	17.89	20.37	245.13	7.98	7.34
Jackhammers* (25 hp)	0	0.00	0.00	0.00	0.00	0.00
Roller (95 hp)	0	0.00	0.00	0.00	0.00	0.00
Paving Equipment (175 hp)	0	0.00	0.00	0.00	0.00	0.00
Dozer/Loader (105 hp)	309	12.55	14.28	113.69	8.94	8.22
Graders (173 hp)	0	0.00	0.00	0.00	0.00	0.00
Cranes (150 hp)	155	12.18	13.87	123.50	6.71	6.18
Forklifts (150 hp)	0	0.00	0.00	0.00	0.00	0.00
Dump Truck (350 hp)	0	0.00	0.00	0.00	0.00	0.00
Water Truck (189 hp)	0	0.00	0.00	0.00	0.00	0.00
Total (pounds) =		42.62	48.52	482.32	23.63	21.74
Average Daily (pounds/day) =		0.82	0.93	9.28	0.45	0.42

F.10 AVERAGE DAILY ON-SITE CONSTRUCTION EXHAUST EMISSIONS

E2 - Digester Gas Storage (Year 2022)

		Total Emissions (pounds)				
Equipment	Total Hours	ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	24	0.73	0.83	6.41	0.21	0.19
Jackhammers* (25 hp)	18	0.44	0.50	2.31	0.13	0.12
Roller (95 hp)	6	0.16	0.19	1.56	0.10	0.09
Paving Equipment (175 hp)	1	0.04	0.04	0.34	0.02	0.02
Dozer/Loader (105 hp)	18	0.38	0.43	3.50	0.21	0.19
Graders (173 hp)	12	0.97	1.11	9.05	0.51	0.47
Cranes (150 hp)	1,027	60.49	68.87	589.43	32.37	29.78
Forklifts (150 hp)	1,027	14.63	16.66	160.77	5.88	5.41
Dump Truck (350 hp)	114	8.74	9.95	72.46	2.69	2.47
Water Truck (189 hp)	224	11.57	13.18	96.70	3.97	3.65
Total (pounds) =		98.16	111.75	942.55	46.07	42.39
Average Daily (pounds/day) =		0.55	0.62	5.27	0.26	0.24

E2 - Digester Gas Storage Pipeline (Year 2022)

		Total Emissions (pounds)				
Equipment	Total Hours	ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	36	1.09	1.25	9.62	0.32	0.29
Jackhammers* (25 hp)	0	0.00	0.00	0.00	0.00	0.00
Roller (95 hp)	0	0.00	0.00	0.00	0.00	0.00
Paving Equipment (175 hp)	0	0.00	0.00	0.00	0.00	0.00
Dozer/Loader (105 hp)	36	0.75	0.86	7.00	0.41	0.38
Graders (173 hp)	0	0.00	0.00	0.00	0.00	0.00
Cranes (150 hp)	18	1.06	1.21	10.33	0.57	0.52
Forklifts (150 hp)	0	0.00	0.00	0.00	0.00	0.00
Dump Truck (350 hp)	0	0.00	0.00	0.00	0.00	0.00
Water Truck (189 hp)	0	0.00	0.00	0.00	0.00	0.00
Total (pounds) =		2.91	3.31	26.95	1.29	1.19
Average Daily (pounds/day) =		0.48	0.55	4.49	0.22	0.20

SF1-P1-100 - Landscaping and Road Repairs Phase 1 (Year 2016)

		Total Emissions (pounds)				
Equipment	Total Hours	ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	600	32.80	37.34	432.24	14.19	13.06
Jackhammers* (25 hp)	1,728	72.95	83.05	284.18	25.22	23.20
Roller (95 hp)	144	7.18	8.17	62.67	4.66	4.29
Paving Equipment (175 hp)	102	6.98	7.95	74.66	3.74	3.44
Dozer/Loader (105 hp)	480	18.71	21.30	169.50	13.16	12.11
Graders (173 hp)	1,080	127.02	144.60	1,234.19	69.76	64.17
Cranes (150 hp)	385	29.41	33.48	296.93	16.18	14.88
Forklifts (150 hp)	385	10.11	11.51	146.10	5.75	5.29
Dump Truck (350 hp)	2,580	325.61	370.68	3,594.42	140.11	128.90
Water Truck (189 hp)	1,852	173.62	197.66	1,795.59	80.56	74.11
Total (pounds) =		804.39	915.74	8,090.47	373.33	343.46
Average Daily (pounds/day) =		5.87	6.68	59.05	2.73	2.51

F.10 AVERAGE DAILY ON-SITE CONSTRUCTION EXHAUST EMISSIONS

SF2 108 - Warehouse (Year 2017)

Equipment	Total Hours	Total Emissions (pounds)				
		ROG	TOG	NOx	PM10	PM2.5
Excavators (188 hp)	48	2.47	2.81	31.30	1.04	0.95
Jackhammers* (25 hp)	132	5.39	6.14	21.38	1.86	1.71
Roller (95 hp)	30	1.42	1.62	12.49	0.92	0.84
Paving Equipment (175 hp)	6	0.38	0.44	4.07	0.20	0.19
Dozer/Loader (105 hp)	84	3.08	3.51	28.00	2.13	1.96
Graders (173 hp)	335	38.26	43.55	369.97	20.93	19.26
Cranes (150 hp)	1,027	76.97	87.62	773.16	42.19	38.82
Forklifts (150 hp)	770	18.95	21.58	265.11	10.43	9.60
Dump Truck (350 hp)	492	59.17	67.36	642.28	24.92	22.92
Water Truck (189 hp)	262	23.10	26.30	233.53	10.47	9.63
Total (pounds) =		229.20	260.93	2,381.29	115.09	105.88
Average Daily (pounds/day) =		1.18	1.34	12.21	0.59	0.54

F.11 OFFROAD EMISSION INVENTORY DATABASE FACTORS

CalendarYear	Equipment Type	Horsepower Bin	BaseNOx	NOx (lb/hr)	BasePM	PM (lb/hour)	BaseHC	HC (lb/hr)	Base Activity	Population
2013	Cranes	50	0.247654083	0.157628309	0.024743663	0.01574899	0.071676816	0.045621276	3142.253895	8.038696209
2013	Cranes	120	11.24251918	0.595446502	0.832733283	0.044104716	1.125087328	0.059588897	37761.64325	96.92370857
2013	Cranes	175	24.60390427	0.829655849	1.327542034	0.044765375	1.900969572	0.064101636	59311.10909	145.3855629
2013	Cranes	250	38.52528932	1.124528105	1.769801588	0.051659356	2.667098457	0.077850867	68518.14397	163.3003716
2013	Cranes	500	47.37085759	1.395229359	1.964677009	0.057866274	2.994432269	0.088195993	67904.04357	156.6397376
2013	Excavators	50	24.64630443	0.152107837	1.918818077	0.011842233	3.376516281	0.020838604	324063.5711	499.2769684
2013	Excavators	120	38.29336891	0.370087311	2.883393833	0.027866639	3.165470879	0.03059278	206942.35	361.1225555
2013	Excavators	175	75.70118644	0.627104702	3.77236521	0.031250078	5.208373372	0.043145895	241430.7728	458.8116226
2013	Excavators	250	94.20664295	0.918429376	3.028579491	0.029525905	5.113790021	0.049854817	205147.2773	394.4349361
2013	Excavators	500	118.5162289	1.043303292	3.855726487	0.033942121	6.533872637	0.057517953	227194.2009	401.1791604
2013	Graders	50	0.22580194	0.231884099	0.030045572	0.030854874	0.088832237	0.091225006	1947.541384	6.367762508
2013	Graders	120	9.940480322	0.8397993	0.824332595	0.0696419	1.043832349	0.088185847	23673.46656	67.78585895
2013	Graders	175	77.81978585	1.178362508	4.361888691	0.066048577	6.241115172	0.094504194	132081.232	317.1556552
2013	Graders	250	88.77583565	1.058105764	2.857522679	0.034058381	4.890928694	0.05829424	167801.4404	251.8347366
2013	Graders	500	16.51073216	0.980626011	0.628639698	0.037336954	1.110738899	0.065970391	33673.86132	47.03927788
2013	Trucks	50	1.151085176	0.141656146	0.119596069	0.014717867	0.270088385	0.033237922	16251.82113	11.3816853
2013	Off-Highway Trucks	120	1.930918067	0.529434218	0.155524863	0.042643023	0.194461472	0.053318967	7294.269997	6.389718062
2013	Off-Highway Trucks	175	29.61857016	0.773621002	1.69103422	0.044168897	2.389477637	0.062411861	76571.26707	61.10167897
2013	Off-Highway Trucks	250	64.76576832	1.092881021	2.824603979	0.04766339	4.641312408	0.078319186	118522.9994	104.6316333
2013	Off-Highway Trucks	500	225.0574814	1.600387676	8.776100312	0.062407002	15.52336604	0.110386927	281253.7047	232.4259945
2013	Pavers	50	0.778832249	0.206631177	0.080679337	0.021404951	0.210703479	0.055901522	7538.380811	23.93757044
2013	Pavers	120	9.339430494	0.470212691	0.726821284	0.036593301	0.852875278	0.042939747	39724.28085	116.2966964
2013	Pavers	175	11.90567802	0.881642342	0.597468436	0.044243887	0.860707089	0.063737304	27007.95423	78.59502294
2013	Pavers	250	5.571255867	0.826657404	0.139980396	0.020770152	0.224727847	0.033344894	13478.99588	33.91155812
2013	Pavers	500	1.707267292	1.017719503	0.059097433	0.035228584	0.084847133	0.050578244	3355.084161	8.378149653
2013	Rollers	50	15.09168648	0.162441062	1.373016584	0.014778618	3.050492988	0.032834324	185811.226	604.7627158
2013	Rollers	120	32.35950546	0.489040631	2.418549455	0.036550897	2.916962956	0.044083288	132338.7197	451.009483
2013	Rollers	175	25.46558478	0.613558244	1.187991886	0.028623031	1.62584931	0.039172603	83009.51063	260.7654829

F.11 OFFROAD EMISSION INVENTORY DATABASE FACTORS

CalendarYear	Equipment Type	Horsepower Bin	BaseNOx	NOx (lb/hr)	BasePM	PM (lb/hour)	BaseHC	HC (lb/hr)	Base Activity	Population
2013	Rollers	250	4.618433761	1.048200972	0.165334055	0.037524262	0.267343748	0.060676409	8812.115012	31.98067243
2013	Rollers	500	2.909404029	1.659336268	0.119816343	0.068335508	0.180960842	0.103208384	3506.708176	13.12027587
2013	Rough Terrain Forklifts	50	0.746374093	0.223797683	0.063397083	0.019009395	0.138519855	0.041534698	6670.078819	27.46804502
2013	Rough Terrain Forklifts	120	61.77083402	0.421812747	3.753582407	0.025631982	4.103773363	0.028023321	292882.7282	1176.863653
2013	Rough Terrain Forklifts	175	9.18593457	0.457895582	0.363372769	0.018113213	0.470114521	0.023434019	40122.39877	157.4676719
2013	Rough Terrain Forklifts	250	1.199584573	1.172392492	0.052923537	0.051723871	0.080596308	0.078769358	2046.387333	9.234946172
2013	Rough Terrain Forklifts	500	0.374213845	1.530951004	0.011388104	0.046590015	0.018833593	0.077050351	488.8645606	2.131141424
2013	Tractors/Loaders /Backhoes	50	23.09768	0.171739272	2.189433905	0.016279201	5.014465592	0.037284293	268985.4187	586.3140873
2013	Tractors/Loaders /Backhoes	120	429.738191	0.395664416	34.24644031	0.031531053	37.41709006	0.034450303	2172235.732	3981.011366
2013	Tractors/Loaders /Backhoes	175	68.36618904	0.623224934	3.460619892	0.031546948	4.805002049	0.043802311	219394.9096	445.3535576
2013	Tractors/Loaders /Backhoes	250	38.80911719	0.868440029	1.252089104	0.028018269	2.087951379	0.046722541	89376.61991	178.141423
2013	Tractors/Loaders /Backhoes	500	47.5584639	1.244262196	1.616888615	0.04230232	2.673928886	0.069957445	76444.44084	160.7767201
2015	Cranes	50	0.239328295	0.158137234	0.024094188	0.015920342	0.069653904	0.046024127	3026.843054	7.518337821
2015	Cranes	120	10.62556189	0.584228026	0.789883886	0.043430391	1.064532895	0.058531488	36374.7079	90.64967316
2015	Cranes	175	22.83372969	0.799322755	1.241169529	0.043448664	1.77868207	0.062264951	57132.69028	135.9745097
2015	Cranes	250	35.91080789	1.088180531	1.656941269	0.050209153	2.514902649	0.076207367	66001.56292	152.7296626
2015	Cranes	500	43.64197647	1.334412619	1.814732027	0.055487893	2.804563301	0.085753327	65410.01762	146.5001827
2015	Excavators	50	23.10765348	0.148049518	1.76124697	0.011284217	3.235540236	0.020729936	312161.1436	466.9579267
2015	Excavators	120	34.74649047	0.348612484	2.599439972	0.026080252	2.915845242	0.029254755	199341.6305	337.7464824
2015	Excavators	175	65.03052917	0.559250047	3.225254223	0.027736566	4.615624427	0.039693483	232563.339	429.1119711
2015	Excavators	250	78.38291728	0.793299228	2.550528773	0.025813437	4.51757328	0.045721536	197612.4884	368.9024963
2015	Excavators	500	101.0725561	0.923671138	3.344036161	0.030560122	6.066825382	0.055442859	218849.6576	375.2101556
2015	Graders	50	0.217442563	0.23181377	0.028917288	0.030828489	0.085303226	0.090941084	1876.010758	5.955566482

F.11 OFFROAD EMISSION INVENTORY DATABASE FACTORS

CalendarYear	Equipment Type	Horsepower Bin	BaseNOx	NOx (lb/hr)	BasePM	PM (lb/hour)	BaseHC	HC (lb/hr)	Base Activity	Population
2015	Graders	120	9.47119973	0.830662307	0.790857595	0.069361392	0.999432444	0.087654245	22803.97135	63.39796577
2015	Graders	175	74.19970137	1.166386307	4.186619438	0.065811796	6.002590554	0.094358054	127230.0625	296.6256338
2015	Graders	250	85.76814085	1.061235276	2.793045004	0.034559195	4.911737986	0.060774427	161638.3148	235.5330486
2015	Graders	500	16.02557565	0.988102699	0.622116707	0.038358385	1.160551859	0.071557144	32437.06481	43.99434595
2015	Off-Highway Trucks	50	1.121413474	0.143266649	0.116624139	0.014899366	0.264460809	0.033786302	15654.91318	10.64492958
2015	Off-Highway Trucks	120	1.540112751	0.438381328	0.1250663	0.035599167	0.153983233	0.043830151	7026.361082	5.976100816
2015	Off-Highway Trucks	175	25.43105789	0.68957254	1.421754421	0.038551397	2.094021872	0.056780178	73758.90543	57.14646405
2015	Off-Highway Trucks	250	57.34065328	1.004480174	2.549336624	0.044658684	4.294537161	0.075230699	114169.806	97.85865086
2015	Off-Highway Trucks	500	200.1546832	1.477572742	7.781525413	0.057444421	14.0534163	0.103744487	270923.6271	217.3806672
2015	Pavers	50	0.727210895	0.200292031	0.074879238	0.020623611	0.197900145	0.054506639	7261.506027	22.38805106
2015	Pavers	120	8.658956295	0.452575323	0.678573168	0.0354668	0.795468052	0.041576513	38265.26041	108.7686147
2015	Pavers	175	10.58017805	0.813359706	0.53203792	0.040900843	0.774973119	0.059576682	26015.9877	73.50743431
2015	Pavers	250	5.278101781	0.813020669	0.135428176	0.020860891	0.224621329	0.034599898	12983.93014	31.71640567
2015	Pavers	500	1.41342582	0.874683569	0.046914911	0.029032795	0.070505594	0.043631638	3231.856345	7.835817871
2015	Rollers	50	14.23666213	0.159080737	1.283564637	0.014342576	2.896504923	0.032365602	178986.6248	565.6154034
2015	Rollers	120	29.21510138	0.458354854	2.185495045	0.034288167	2.64432318	0.041486708	127478.0931	421.8148771
2015	Rollers	175	22.52758667	0.563466605	1.057285731	0.026445141	1.474450704	0.036879393	79960.6808	243.8856926
2015	Rollers	250	3.806718011	0.896916299	0.135709878	0.031975156	0.222701885	0.052471696	8488.457651	29.91050947
2015	Rollers	500	2.682036895	1.587985337	0.110434842	0.065386465	0.169960788	0.100630696	3377.91141	12.27097824
2015	Rough Terrain Forklifts	50	0.69868729	0.21748697	0.058075468	0.018077698	0.132270191	0.041172987	6425.095622	25.68999206
2015	Rough Terrain Forklifts	120	52.13583262	0.369593154	3.031025126	0.021487067	3.427227831	0.024295765	282125.5319	1100.68328
2015	Rough Terrain Forklifts	175	7.870566322	0.407286916	0.31083637	0.016085194	0.421323979	0.021802719	38648.75599	147.2745234
2015	Rough Terrain Forklifts	250	1.117258767	1.133567272	0.049733327	0.050459278	0.076201776	0.077314085	1971.226225	8.637152503
2015	Rough Terrain Forklifts	500	0.364198133	1.546787047	0.011189597	0.047523371	0.018664982	0.079272104	470.9092101	1.993189039
2015	Tractors/Loaders /Backhoes	50	21.67243386	0.167286276	1.967937314	0.015190214	4.474452725	0.034537632	259105.939	548.3609858
2015	Tractors/Loaders /Backhoes	120	384.9457839	0.367937438	30.26164611	0.028924573	33.54779097	0.032065524	2092452.379	3723.313774

F.11 OFFROAD EMISSION INVENTORY DATABASE FACTORS

CalendarYear	Equipment Type	Horsepower Bin	BaseNOx	NOx (lb/hr)	BasePM	PM (lb/hour)	BaseHC	HC (lb/hr)	Base Activity	Population
2015	Tractors/Loaders /Backhoes	175	60.47053146	0.572266871	3.06696318	0.029024409	4.363867589	0.041297749	211336.824	416.5250694
2015	Tractors/Loaders /Backhoes	250	34.65921519	0.805148827	1.134066212	0.026344857	1.956600954	0.045452701	86093.93455	166.6100277
2015	Tractors/Loaders /Backhoes	500	42.30070705	1.148902262	1.452978051	0.039463401	2.511971158	0.068226031	73636.73736	150.3693714
2016	Cranes	50	0.234099305	0.159028052	0.023801033	0.016168488	0.069107156	0.046945788	2944.125917	7.211012118
2016	Cranes	120	10.19028221	0.576036781	0.757975291	0.042846865	1.021229032	0.057728086	35380.66505	86.94420326
2016	Cranes	175	21.41873686	0.770855009	1.166817568	0.041993474	1.675130518	0.06028753	55571.37623	130.4163049
2016	Cranes	250	34.7414043	1.082322452	1.60548172	0.050016657	2.4462787	0.076210574	64197.88158	146.4865605
2016	Cranes	500	40.43002628	1.270934812	1.688983232	0.053093895	2.633936731	0.082798904	63622.50194	140.5117219
2016	Excavators	50	22.08143736	0.145449427	1.646466055	0.010845197	3.098998632	0.020412964	303630.4481	447.870174
2016	Excavators	120	32.04820562	0.330574409	2.361869644	0.024362477	2.698656484	0.027836403	193894.0507	323.940482
2016	Excavators	175	59.46974856	0.525797318	2.954051963	0.026118029	4.326242495	0.038250148	226207.8811	411.5712405
2016	Excavators	250	69.23429597	0.720394538	2.27358733	0.02365706	4.148245075	0.04316319	192212.1623	353.8229373
2016	Excavators	500	89.18840198	0.837965289	2.973006713	0.02793274	5.624302176	0.052842857	212868.9652	359.8727595
2016	Graders	50	0.212063732	0.23243129	0.028306454	0.031025134	0.08352925	0.091551777	1824.743402	5.712121894
2016	Graders	120	9.193241815	0.828937363	0.769456564	0.069380454	0.972578112	0.087695543	22180.78766	60.80645887
2016	Graders	175	70.71077191	1.142771381	3.996497839	0.064588227	5.746546974	0.092871132	123753.1374	284.5005227
2016	Graders	250	82.99795307	1.055811981	2.715390378	0.034542318	4.838211332	0.061546596	157221.0859	225.9052078
2016	Graders	500	15.43678024	0.978540244	0.604607471	0.038326175	1.157638553	0.073382914	31550.62931	42.19599721
2016	Off-Highway Trucks	50	1.093019185	0.143562377	0.113616436	0.014922927	0.258088278	0.033898551	15227.09793	10.20979876
2016	Off-Highway Trucks	120	1.504366371	0.440237132	0.122176754	0.035753753	0.152563577	0.04464614	6834.345683	5.73181685
2016	Off-Highway Trucks	175	23.02908722	0.641986328	1.283645678	0.035784439	1.936037818	0.053971302	71743.23253	54.81049863
2016	Off-Highway Trucks	250	53.83362242	0.969540286	2.415238134	0.043498293	4.110358306	0.074027305	111049.7897	93.85850092
2016	Off-Highway Trucks	500	183.5660441	1.393185628	7.15540225	0.054306359	13.13071109	0.099656328	263519.8647	208.4948379
2016	Pavers	50	0.702867642	0.199026253	0.072119811	0.020421677	0.191503578	0.054226767	7063.064621	21.47289884
2016	Pavers	120	8.115308831	0.436077718	0.63272911	0.033999823	0.744211524	0.039990353	37219.5528	104.3225002
2016	Pavers	175	9.260775688	0.731931713	0.464359574	0.036700975	0.683933804	0.054055174	25305.02648	70.50268453
2016	Pavers	250	4.965372342	0.786337829	0.128677296	0.020377893	0.217763472	0.034485965	12629.10714	30.41994003
2016	Pavers	500	1.359493364	0.864945138	0.045350411	0.028853114	0.070216289	0.044673434	3143.536633	7.515514595
2016	Rollers	50	13.63594264	0.156649173	1.216129384	0.013970847	2.772827225	0.03185413	174095.3037	542.4948474
2016	Rollers	120	26.98112318	0.435199096	2.005855243	0.032353968	2.440564432	0.039365723	123994.3898	404.5724285
2016	Rollers	175	20.42427443	0.525210829	0.957865494	0.02463154	1.356380422	0.034879363	77775.52666	233.9164223

F.11 OFFROAD EMISSION INVENTORY DATABASE FACTORS

CalendarYear	Equipment Type	Horsepower Bin	BaseNOx	NOx (lb/hr)	BasePM	PM (lb/hour)	BaseHC	HC (lb/hr)	Base Activity	Population
2016	Rollers	250	3.575714537	0.866158899	0.127576861	0.030903427	0.211643665	0.051267248	8256.486285	28.68786311
2016	Rollers	500	2.468001014	1.502313592	0.101335043	0.06168434	0.157377177	0.095798126	3285.600326	11.76937974
2016	Rough Terrain Forklifts	50	0.667728798	0.213689917	0.054331663	0.017387491	0.125368357	0.04012101	6249.511521	24.63986701
2016	Rough Terrain Forklifts	120	45.89118206	0.334464764	2.571325686	0.018740372	3.015799663	0.021979794	274415.6454	1055.690854
2016	Rough Terrain Forklifts	175	7.129001047	0.379277148	0.280383907	0.014916986	0.38965436	0.020730393	37592.56827	141.25441
2016	Rough Terrain Forklifts	250	1.09245589	1.139543637	0.04891744	0.051025911	0.075086472	0.078322898	1917.356835	8.28409322
2016	Rough Terrain Forklifts	500	0.356070777	1.554757521	0.010990898	0.047990966	0.018410943	0.080390064	458.04027	1.91171382
2016	Tractors/Loaders/Backhoes	50	20.72346148	0.164455518	1.839203364	0.014595397	4.200775827	0.033336167	252025.1287	525.9457354
2016	Tractors/Loaders/Backhoes	120	359.3543122	0.353126895	27.90804589	0.027424414	31.32296347	0.030780153	2035270.138	3571.116566
2016	Tractors/Loaders/Backhoes	175	54.06990634	0.526070512	2.755937612	0.02681376	3.984016245	0.038762291	205561.4413	399.4988513
2016	Tractors/Loaders/Backhoes	250	31.66642351	0.756292821	1.051999413	0.025125023	1.846841742	0.044108333	83741.17173	159.7995405
2016	Tractors/Loaders/Backhoes	500	37.72294968	1.053354669	1.309908763	0.036577164	2.333527635	0.065160128	71624.40305	144.2227504
2017	Cranes	50	0.227433655	0.159897994	0.02334835	0.016415136	0.068051567	0.047843883	2844.734301	6.873542465
2017	Cranes	120	9.563075803	0.559469316	0.712159585	0.041663524	0.95805207	0.05604899	34186.23874	82.87528343
2017	Cranes	175	20.20799314	0.75269096	1.102838191	0.041077624	1.588514152	0.059167688	53695.32575	124.3129251
2017	Cranes	250	32.23361459	1.039280977	1.490338836	0.048051726	2.284542488	0.073658557	62030.60635	139.6311055
2017	Cranes	500	37.52801173	1.220926383	1.56841782	0.051026489	2.468235684	0.080300925	61474.65113	133.9358846
2017	Excavators	50	20.70831707	0.141170565	1.475892689	0.010061301	2.843897475	0.019387119	293380.0983	426.9102047
2017	Excavators	120	29.11708793	0.310833716	2.097013088	0.022386249	2.45130291	0.0261684	187348.3242	308.7803241
2017	Excavators	175	52.40680155	0.479539725	2.607296029	0.023857629	3.921257326	0.035880813	218571.2625	392.3100326
2017	Excavators	250	60.54850796	0.652029504	2.003727661	0.021577568	3.772350477	0.04062336	185723.2152	337.2643042
2017	Excavators	500	77.62937407	0.754846076	2.611110617	0.025389701	5.135279573	0.049934006	205682.659	343.0309995
2017	Graders	50	0.205230624	0.232801101	0.027441976	0.031128503	0.080956224	0.091831802	1763.141351	5.444799115
2017	Graders	120	8.854003454	0.826242232	0.74075931	0.06912654	0.937766665	0.087510969	21431.97991	57.96076477
2017	Graders	175	66.06852599	1.105052893	3.738496935	0.062529575	5.394941378	0.090235032	119575.3188	271.1861237
2017	Graders	250	79.10731571	1.041479014	2.610671872	0.034370525	4.705560992	0.061950566	151913.4129	215.3330231
2017	Graders	500	14.65800069	0.961637472	0.577508606	0.037887426	1.135862482	0.074518207	30485.50231	40.22125798
2017	Off-Highway Trucks	50	0.998871922	0.135780477	0.095434203	0.012972736	0.214200213	0.029117054	14713.04184	9.731988271

F.11 OFFROAD EMISSION INVENTORY DATABASE FACTORS

CalendarYear	Equipment Type	Horsepower Bin	BaseNOx	NOx (lb/hr)	BasePM	PM (lb/hour)	BaseHC	HC (lb/hr)	Base Activity	Population
2017	Off-Highway Trucks	120	1.332438426	0.403547697	0.109358267	0.033120688	0.135833119	0.041138968	6603.622991	5.463572363
2017	Off-Highway Trucks	175	20.62245948	0.59498249	1.143259134	0.032984386	1.771368205	0.05110608	69321.23158	52.24541072
2017	Off-Highway Trucks	250	47.82118802	0.891347985	2.143272795	0.039948859	3.735774941	0.069631801	107300.8271	89.46599744
2017	Off-Highway Trucks	500	166.1993632	1.305451264	6.447231703	0.05064127	12.09038592	0.094966727	254623.6198	198.7374447
2017	Pavers	50	0.672231235	0.197001791	0.068288397	0.020012364	0.181714245	0.053252556	6824.620538	20.46798419
2017	Pavers	120	7.724968462	0.429605894	0.601247717	0.033436973	0.709404356	0.039451849	35963.04694	99.44028986
2017	Pavers	175	8.295137751	0.678518156	0.414399235	0.033896653	0.616914378	0.050461803	24450.74662	67.20321476
2017	Pavers	250	4.541722146	0.744376374	0.119182466	0.019533694	0.205329961	0.033653043	12202.75738	28.99631094
2017	Pavers	500	1.132292261	0.745563571	0.039818256	0.026218532	0.063106984	0.041553113	3037.413053	7.163794467
2017	Rollers	50	12.8811557	0.153148392	1.124952311	0.013374936	2.577837683	0.030648779	168217.969	517.1065183
2017	Rollers	120	24.93149728	0.416189378	1.832323515	0.030587557	2.244766498	0.037472598	119808.4267	385.6387594
2017	Rollers	175	18.16231428	0.483362431	0.850554741	0.022636224	1.222299297	0.032529641	75149.87971	222.9693191
2017	Rollers	250	3.180352966	0.797305436	0.112268322	0.028145349	0.18951417	0.047510663	7977.753128	27.34529385
2017	Rollers	500	1.973459503	1.243249096	0.079379325	0.050007753	0.12591545	0.079324795	3174.680776	11.21858209
2017	Rough Terrain Forklifts	50	0.614313815	0.203464608	0.047223566	0.015640743	0.112872385	0.037384045	6038.532417	23.48674076
2017	Rough Terrain Forklifts	120	39.4247988	0.297375567	2.118024676	0.015975954	2.613052595	0.019709879	265151.5667	1006.285358
2017	Rough Terrain Forklifts	175	6.249750978	0.344116409	0.245869873	0.013537797	0.352826229	0.019426901	36323.46966	134.6438156
2017	Rough Terrain Forklifts	250	1.061088016	1.145494821	0.047790987	0.051592636	0.073477887	0.079322863	1852.62822	7.896404221
2017	Rough Terrain Forklifts	500	0.346181492	1.564389347	0.010729979	0.048488625	0.018053963	0.081585606	442.5771534	1.822247128
2017	Tractors/Loaders/Backhoes	50	19.71959271	0.161956641	1.713022649	0.014069023	3.928147986	0.032261805	243516.938	501.3318917
2017	Tractors/Loaders/Backhoes	120	327.7447815	0.333317712	24.95408959	0.025378406	28.48055563	0.028964835	1966560.853	3403.99114
2017	Tractors/Loaders/Backhoes	175	48.42729856	0.487633188	2.479843156	0.024970499	3.655580018	0.036809448	198621.8319	380.8026216
2017	Tractors/Loaders/Backhoes	250	28.76574225	0.711019019	0.964756392	0.023846426	1.727564325	0.042701178	80914.12881	152.3210486
2017	Tractors/Loaders/Backhoes	500	33.6098352	0.971292497	1.189127403	0.034364659	2.168210193	0.062659227	69206.4137	137.47324
2018	Cranes	50	0.213163812	0.156240185	0.022537546	0.016519081	0.062346231	0.045697188	2728.668208	6.506805404

F.11 OFFROAD EMISSION INVENTORY DATABASE FACTORS

CalendarYear	Equipment Type	Horsepower Bin	BaseNOx	NOx (lb/hr)	BasePM	PM (lb/hour)	BaseHC	HC (lb/hr)	Base Activity	Population
2018	Cranes	120	8.551316642	0.521558036	0.634201958	0.038680959	0.850884389	0.051896756	32791.42898	78.45348229
2018	Cranes	175	18.4578175	0.716745278	1.009047389	0.039182853	1.455877454	0.056533948	51504.53883	117.6802234
2018	Cranes	250	29.26246066	0.983616467	1.34991921	0.045375636	2.086088661	0.070120937	59499.73725	132.1811041
2018	Cranes	500	33.19749883	1.125978935	1.384627013	0.046963202	2.210169183	0.074963598	58966.46518	126.789751
2018	Excavators	50	18.69258086	0.132849399	1.220245309	0.008672363	2.460387164	0.017486133	281410.0939	404.1324602
2018	Excavators	120	24.93357921	0.277495399	1.707738791	0.019006082	2.072639247	0.0230672	179704.4511	292.3053857
2018	Excavators	175	42.57900087	0.406184531	2.103306723	0.020064601	3.292726022	0.031411126	209653.4832	371.3783763
2018	Excavators	250	46.2643742	0.519399435	1.53579391	0.017242003	3.075853491	0.034531896	178145.6471	319.2696063
2018	Excavators	500	59.81738124	0.606388131	2.029649666	0.020575215	4.260921876	0.043194342	197290.739	324.7286203
2018	Graders	50	0.191685365	0.226685009	0.025126531	0.02971436	0.073034366	0.08636964	1691.204605	5.15429249
2018	Graders	120	7.919023205	0.770424875	0.657596653	0.063976176	0.8339147	0.081129782	20557.54809	54.86827489
2018	Graders	175	58.96198067	1.028138189	3.328192697	0.05803472	4.838182034	0.084364868	114696.6065	256.7170195
2018	Graders	250	73.59105734	1.010066335	2.438692178	0.033472014	4.460520377	0.061222404	145715.2958	203.8439546
2018	Graders	500	13.3921305	0.915961652	0.52409068	0.035845452	1.072401095	0.073347424	29241.6838	38.07525742
2018	Off-Highway Trucks	50	0.897578051	0.127201059	0.075971951	0.010766432	0.163202694	0.023128413	14112.74491	9.212739165
2018	Off-Highway Trucks	120	1.197930552	0.378242517	0.09771462	0.030853061	0.122989637	0.038833561	6334.193005	5.172064093
2018	Off-Highway Trucks	175	16.69295064	0.502097216	0.912690166	0.027452258	1.486335963	0.044706605	66492.90257	49.45786289
2018	Off-Highway Trucks	250	38.81577161	0.754268773	1.681531245	0.032675545	3.104479432	0.0603263	102922.9181	84.69254952
2018	Off-Highway Trucks	500	136.0771068	1.1143134	5.220623691	0.042750842	10.34332584	0.084699821	244234.8925	188.1338314
2018	Pavers	50	0.629231844	0.192244161	0.062252422	0.019019483	0.166287597	0.050804517	6546.17378	19.37591727
2018	Pavers	120	6.689235134	0.387829604	0.507854495	0.029444474	0.598203881	0.034682766	34495.74282	94.13466472
2018	Pavers	175	6.846510654	0.583845769	0.339747969	0.028972483	0.513536727	0.043792562	23453.14814	63.61759503
2018	Pavers	250	3.864295131	0.660287819	0.102969475	0.01759428	0.183101778	0.031286397	11704.88088	27.44921613
2018	Pavers	500	1.013276445	0.695576765	0.036074664	0.024763921	0.059309808	0.040713987	2913.485603	6.781571044
2018	Rollers	50	11.79590266	0.146210906	0.970896439	0.012034318	2.23328121	0.027681652	161354.6206	489.51636
2018	Rollers	120	20.75099181	0.361137401	1.45888402	0.025389513	1.806810084	0.031444603	114920.2035	365.0630481
2018	Rollers	175	14.64020503	0.406199929	0.683637535	0.018967871	1.013299856	0.028114519	72083.73995	211.0728169
2018	Rollers	250	2.345516282	0.613025914	0.080683897	0.021087604	0.142256051	0.037180149	7652.258182	25.88628887
2018	Rollers	500	1.600553902	1.051214195	0.065077115	0.042741445	0.105549193	0.069322757	3045.152758	10.62001595
2018	Rough Terrain Forklifts	50	0.575032378	0.198555477	0.043574638	0.01504608	0.107500298	0.037119254	5792.158313	22.23360843
2018	Rough Terrain Forklifts	120	31.94995895	0.2512448	1.56754068	0.012326665	2.109085559	0.01658521	254333.2958	952.5951198

F.11 OFFROAD EMISSION INVENTORY DATABASE FACTORS

CalendarYear	Equipment Type	Horsepower Bin	BaseNOx	NOx (lb/hr)	BasePM	PM (lb/hour)	BaseHC	HC (lb/hr)	Base Activity	Population
2018	Rough Terrain Forklifts	175	4.995298933	0.286744523	0.193671287	0.011117289	0.297404668	0.017071883	34841.46018	127.4599104
2018	Rough Terrain Forklifts	250	0.941139461	1.059221244	0.044476101	0.050056376	0.06826672	0.076831929	1777.04038	7.475092489
2018	Rough Terrain Forklifts	500	0.173797666	0.818796396	0.006724961	0.03168267	0.011721133	0.055220658	424.5198603	1.725021344
2018	Tractors/Loaders /Backhoes	50	17.92755197	0.153501559	1.438483015	0.012316762	3.301907964	0.028272015	233581.367	474.5833867
2018	Tractors/Loaders /Backhoes	120	278.5678494	0.295355169	20.20324079	0.021420748	23.74972932	0.025180958	1886324.524	3222.371588
2018	Tractors/Loaders /Backhoes	175	39.64573511	0.416188874	2.027933802	0.021288633	3.071542032	0.032244114	190517.996	360.4849418
2018	Tractors/Loaders /Backhoes	250	24.70800899	0.636699285	0.83777093	0.021588472	1.545978837	0.039838241	77612.80579	144.1939767
2018	Tractors/Loaders /Backhoes	500	26.54355172	0.799712094	0.946181362	0.028506836	1.820811664	0.05485796	66382.7693	130.1383712
2022	Cranes	50	0.221643868	0.158039369	0.023739964	0.016927376	0.066012103	0.047068801	2804.919665	6.368498167
2022	Cranes	120	6.651607107	0.39466312	0.487918361	0.028949903	0.647127856	0.03839636	33707.77133	76.78589219
2022	Cranes	175	15.19004141	0.573817454	0.834227219	0.031513682	1.231050783	0.046504049	52943.81097	115.1788383
2022	Cranes	250	24.71147369	0.808060536	1.145690482	0.037463863	1.821961482	0.059577797	61162.43177	129.3714913
2022	Cranes	500	26.92809322	0.888506905	1.143663537	0.037735793	1.937275007	0.06392143	60614.25764	124.0947357
2022	Excavators	50	16.25482356	0.112383587	0.727740268	0.005031495	1.805903921	0.012485768	289273.9777	395.5423088
2022	Excavators	120	17.56549788	0.190178724	0.977062987	0.010578498	1.445321397	0.015648254	184726.2145	286.0922062
2022	Excavators	175	24.81515507	0.230290069	1.204657822	0.011179488	2.296227882	0.021309497	215512.1594	363.4844385
2022	Excavators	250	24.47312708	0.267284977	0.804579881	0.008787276	2.197286508	0.023997819	183123.8504	312.4832812
2022	Excavators	500	31.06073407	0.30631292	1.070776589	0.010559722	3.145751254	0.031022585	202803.9437	317.8262596
2022	Graders	50	0.186769418	0.214867095	0.023156315	0.026639962	0.066562018	0.076575639	1738.464589	5.044733973
2022	Graders	120	6.960122878	0.658727647	0.5637452	0.053354597	0.730782314	0.069163508	21132.01991	53.7020068
2022	Graders	175	44.44291098	0.753897369	2.484094108	0.042138374	3.781777469	0.064151335	117901.7537	251.2602985
2022	Graders	250	60.09596757	0.80241768	1.978349865	0.026415465	3.90320559	0.052116661	149787.2469	199.5110919
2022	Graders	500	11.9094215	0.792407521	0.465605832	0.030979638	1.073977742	0.071458386	30058.83006	37.26593806
2022	Off-Highway Trucks	50	0.790693353	0.10900763	0.053997927	0.007444335	0.129130736	0.017802395	14507.11948	9.016915191
2022	Off-Highway Trucks	120	0.945992812	0.290574061	0.069365032	0.021306377	0.097346933	0.029901383	6511.199299	5.062127827
2022	Off-Highway Trucks	175	9.702059724	0.283889253	0.483486288	0.014147157	1.019811439	0.029840417	68351.01808	48.40659734
2022	Off-Highway Trucks	250	22.8363314	0.431692541	0.937922951	0.017730271	2.158342165	0.040800784	105799.0547	82.89234316

F.11 OFFROAD EMISSION INVENTORY DATABASE FACTORS

CalendarYear	Equipment Type	Horsepower Bin	BaseNOx	NOx (lb/hr)	BasePM	PM (lb/hour)	BaseHC	HC (lb/hr)	Base Activity	Population
2022	Off-Highway Trucks	500	79.79153631	0.635637363	2.958762602	0.02357017	7.603353118	0.060570025	251059.9314	184.1348997
2022	Pavers	50	0.56630446	0.168314973	0.047356503	0.014075129	0.130303672	0.038728388	6729.103785	18.964067
2022	Pavers	120	5.265623577	0.296991902	0.375944264	0.021204023	0.460725866	0.025985878	35459.71149	92.13375882
2022	Pavers	175	4.157446645	0.344894157	0.199863469	0.016580307	0.336451364	0.027911389	24108.53625	62.2653533
2022	Pavers	250	2.20607305	0.366701926	0.064024248	0.010642356	0.13705017	0.022781005	12031.96873	26.86576158
2022	Pavers	500	0.812895664	0.542852984	0.028333847	0.018921387	0.05586586	0.037307308	2994.901703	6.637423449
2022	Rollers	50	10.44274579	0.125919676	0.677622023	0.008170834	1.675904929	0.02020823	165863.606	479.111307
2022	Rollers	120	15.38285344	0.260435879	0.951481108	0.016108833	1.274446509	0.021576725	118131.5991	357.3033476
2022	Rollers	175	8.510943572	0.229721001	0.397609057	0.010731965	0.671658622	0.018128905	74098.089	206.5862992
2022	Rollers	250	1.661857735	0.422536789	0.056328689	0.01432189	0.113263357	0.028797853	7866.097239	25.33605556
2022	Rollers	500	1.063711765	0.679634127	0.044346039	0.02833388	0.080666584	0.051540055	3130.248239	10.3942792
2022	Rough Terrain Forklifts	50	0.487060862	0.163607463	0.026320822	0.008841365	0.072599851	0.024386844	5954.01768	21.7610157
2022	Rough Terrain Forklifts	120	24.52098746	0.187583673	0.918708384	0.007028049	1.588486785	0.012151802	261440.5301	932.3469657
2022	Rough Terrain Forklifts	175	2.80282744	0.156516567	0.102443511	0.00572069	0.201397595	0.011246522	35815.08977	124.7506503
2022	Rough Terrain Forklifts	250	0.125123054	0.136993619	0.003178848	0.003480428	0.010725695	0.011743254	1826.699008	7.316203554
2022	Rough Terrain Forklifts	500	0.034462658	0.15794688	0.000650629	0.002981918	0.00408932	0.018741888	436.3828848	1.688354666
2022	Tractors/Loaders/Backhoes	50	15.43963865	0.128605409	0.887452718	0.007392091	2.322020793	0.019341413	240108.6977	464.4957458
2022	Tractors/Loaders/Backhoes	120	188.5934129	0.194522753	11.07774365	0.011426026	15.97841775	0.016480776	1939037.05	3153.87756
2022	Tractors/Loaders/Backhoes	175	23.09016997	0.235804139	1.179489025	0.012045316	2.121301028	0.021663399	195841.9393	352.8225525
2022	Tractors/Loaders/Backhoes	250	14.29659363	0.358392975	0.519373764	0.013019878	1.127256412	0.028258534	79781.6622	141.129021
2022	Tractors/Loaders/Backhoes	500	15.88361867	0.465537195	0.587739639	0.017226217	1.384784281	0.04058701	68237.80718	127.3721784

F.12 OPERATION EMISSIONS ESTIMATES

Daily Operation Emissions Summary

Source	Emissions ROG	NOx	PM10*	PM2.5*
Off-site Vehicle Emissions	1.03	3.89	0.17	0.08
Natural Gas Combustion	1.89	18.63	3.64	3.56
Total	2.92	22.51	3.80	3.64

Vehicle Emission Factors

Vehicle Type (Calendar Year)	Running Exhaust Emission Factors (grams/mile			
	ROG	NOx	PM10*	PM2.5*
Light duty truck (2017)	0.2770	0.2680	0.0490	0.0210
Heavy duty truck (2017	0.1530	7.3640	0.1580	0.0900

*PM10 and PM2.5 emission factors include tire and break wea

Vehicle Type (Calendar Year)	Loss Emission Factors (grams/veh/da			
	ROG	NOx	PM10	PM2.5
Light duty truck - 2017	5.7760	1.6950	0.0320	0.0290

Vehicle emission factors were obtained from EMFAC2011 for Santa Clara Count
Heavy truck = T7 Single
Light duty truck = LDT1

Project Off-Site Vehicle Emissions

Source (Vehicle Type)	Trips/day	miles/trip	ROG	NOx	PM10	PM2.5
Workers (Light-Duty Truck)	35	25	0.97	0.64	0.10	0.04
Truck Trips (Heavy Truck; T7 Single)	4	50	0.07	3.25	0.07	0.04
Total Emissions (pounds/day)			1.03	3.89	0.17	0.08

It is assumed that each employee would generate approximately 1.5, 25-mile round trips each day.

SAN JOSE/SANTA CLARA WATER POLLUTION CONTROL PLANT MASTER PLAN
Air Quality Emission Estimates

Gas Emission Factors

Combustion Source	Natural Gas Combustion Emission Factors				
	Units	ROG	NOx	PM10	PM2.5
Natural Gas	lb/MMBtu	0.002	0.130	0.006	0.006
Landfill Gas	lb/MMBtu	0.013	0.056	0.023	0.023
Digester Gas	lb/MMBtu	0.0058	0.064	0.012	0.012
Blended Gas	lb/MMBtu	0.0078	0.0772	0.0151	0.0148

Emission factors obtained from U.S. EPA, 2000, Tables 3.1-1, 3.1-2a, and 3.1-2b. NOx emission factors are for controlled emissions; for landfill gas and digester gas, it is assumed that controls would achieve 60% reduction compared to non-controlled emissions (See U.S. EPA, 2000, Section 3.1.4.1).

34% digester, 41% landfill gas, and 25% natural gas

Project Blended Gas Emissions

Source	MMBtu/year	MMBtu/day	ROG	NOx	PM10	PM2.5
B2-P1 - Dewatering Phase 1 - Sludge Dewatering	1,800	4.9	0.04	0.38	0.07	0.07
B4-P1 - Thermal Drying Phase 1	86,250	236.3	1.85	18.25	3.56	3.49
Total Emissions (pounds/day)			1.89	18.63	3.64	3.56

APPENDIX G

Economic Development CalEEMod Output Sheets

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sjwpcp Project GHG only

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Office Building	1202	1000sqft
Office Park	2352	1000sqft
Research & Development	1098	1000sqft
General Light Industry	3785	1000sqft
Strip Mall	181	1000sqft
Industrial Park	3162.456	1000sqft

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Utility Company** Pacific Gas & Electric Company

Climate Zone 4 **Precipitation Freq (Days)** 58

1.3 User Entered Comments

Project Characteristics - ADjusted C)2 factor to match PG&E estimate for 2020

Land Use - R&D = Combined industrial/commercial
Flexible Space = Industrial Park

Water And Wastewater - Per scaqmd water rate for industrial use is in error Use 697 gal/employee/day

light industry = 697*3110*313=gal/yr

Industrial Park = 697*2815*313

Solid Waste - Per SCAQMD waste rates for industrial uses is in error and should be 15% of quoted rate of 220206.33 ton/yr for light industry and 38922.58 ton/yr for Indusrial park

Land Use Change -

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					
2011	1.30	10.40	6.16	0.01	0.02	0.53	0.56	0.00	0.53	0.53	0.00	906.37	906.37	0.11	0.00	908.59
2012	1.40	11.28	6.53	0.01	3.67	0.56	4.23	1.73	0.56	2.30	0.00	1,015.27	1,015.27	0.11	0.00	1,017.66
2013	1.57	12.74	7.11	0.01	2.05	0.60	2.65	0.84	0.60	1.44	0.00	1,311.69	1,311.69	0.13	0.00	1,314.36
2014	4.11	23.60	31.29	0.06	5.43	0.93	6.36	1.03	0.93	1.96	0.00	5,502.51	5,502.51	0.30	0.00	5,508.73
2015	7.82	39.40	65.70	0.14	9.04	1.45	10.48	0.50	1.45	1.95	0.00	12,355.28	12,355.28	0.54	0.00	12,366.61
2016	7.27	36.21	60.88	0.14	9.04	1.34	10.38	0.50	1.34	1.84	0.00	12,276.62	12,276.62	0.50	0.00	12,287.15
2017	6.72	33.32	55.87	0.14	9.00	1.24	10.24	0.50	1.24	1.74	0.00	12,113.89	12,113.89	0.46	0.00	12,123.55
2018	6.28	31.03	51.94	0.14	9.04	1.15	10.19	0.18	1.08	1.25	0.00	12,052.96	12,052.96	0.43	0.00	12,061.95
2019	5.87	28.95	48.30	0.14	9.04	1.08	10.12	0.18	1.00	1.18	0.00	11,955.68	11,955.68	0.40	0.00	11,964.02
2020	5.56	27.23	45.44	0.14	9.07	1.01	10.09	0.18	0.95	1.12	0.00	11,911.49	11,911.49	0.37	0.00	11,919.32

	ROG	NOx	CO	SO2	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					
2021	5.23	25.56	42.53	0.14	9.04	0.95	9.99	0.18	0.89	1.06	0.00	11,783.56	11,783.56	0.35	0.00	11,790.89
2022	4.94	24.13	39.94	0.14	9.00	0.90	9.91	0.18	0.84	1.01	0.00	11,662.88	11,662.88	0.33	0.00	11,669.75
2023	4.70	22.99	37.77	0.14	9.00	0.86	9.86	0.18	0.80	0.98	0.00	11,593.94	11,593.94	0.31	0.00	11,600.43
2024	4.52	22.18	36.17	0.14	9.07	0.83	9.90	0.18	0.77	0.95	0.00	11,619.37	11,619.37	0.30	0.00	11,625.61
2025	4.31	21.26	34.44	0.14	9.04	0.80	9.84	0.18	0.74	0.92	0.00	11,517.99	11,517.99	0.28	0.00	11,523.90
2026	4.31	21.26	34.44	0.14	9.04	0.80	9.84	0.18	0.74	0.92	0.00	11,517.99	11,517.99	0.28	0.00	11,523.90
2027	4.31	21.26	34.44	0.14	9.04	0.80	9.84	0.18	0.74	0.92	0.00	11,517.99	11,517.99	0.28	0.00	11,523.90
2028	4.30	21.18	34.31	0.14	9.00	0.79	9.80	0.18	0.74	0.91	0.00	11,473.86	11,473.86	0.28	0.00	11,479.74
2029	4.31	21.26	34.44	0.14	9.04	0.80	9.84	0.18	0.74	0.92	0.00	11,517.99	11,517.99	0.28	0.00	11,523.90
2030	3.62	18.79	28.95	0.14	9.04	0.71	9.75	0.18	0.66	0.84	0.00	11,346.81	11,346.81	0.24	0.00	11,351.77
2031	3.62	18.79	28.95	0.14	9.04	0.71	9.75	0.18	0.66	0.84	0.00	11,346.81	11,346.81	0.24	0.00	11,351.77
2032	1.76	9.27	14.40	0.06	4.06	0.36	4.42	0.08	0.33	0.41	0.00	5,286.92	5,286.92	0.12	0.00	5,289.38
2033	31.28	1.18	2.68	0.01	0.43	0.07	0.49	0.01	0.06	0.07	0.00	529.35	529.35	0.02	0.00	529.84
2034	105.75	0.33	2.96	0.01	1.39	0.06	1.45	0.02	0.05	0.08	0.00	930.37	930.37	0.03	0.00	931.01
Total	**234.86**	**503.60**	**785.64**	**2.55**	**170.63**	**19.33**	**189.98**	**7.73**	**18.44**	**26.14**	**0.00**	**215,047.59**	**215,047.59**	**6.69**	**0.00**	**215,187.73**

2.1 Overall Construction

<u>Mitigated Construction</u>

	ROG	NOx	CO	SO2	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					
2011	1.30	10.40	6.16	0.01	0.00	0.53	0.53	0.00	0.53	0.53	0.00	906.37	906.37	0.11	0.00	908.59
2012	1.40	11.28	6.53	0.01	3.64	0.56	4.21	1.73	0.56	2.30	0.00	1,015.27	1,015.27	0.11	0.00	1,017.66
2013	1.57	12.74	7.11	0.01	2.02	0.60	2.62	0.84	0.60	1.44	0.00	1,311.69	1,311.69	0.13	0.00	1,314.36
2014	4.11	23.60	31.29	0.06	2.21	0.93	3.14	1.03	0.93	1.96	0.00	5,502.51	5,502.51	0.30	0.00	5,508.73
2015	7.82	39.40	65.70	0.14	0.50	1.45	1.95	0.50	1.45	1.95	0.00	12,355.28	12,355.28	0.54	0.00	12,366.61
2016	7.27	36.21	60.88	0.14	0.50	1.34	1.84	0.50	1.34	1.84	0.00	12,276.62	12,276.62	0.50	0.00	12,287.15
2017	6.72	33.32	55.87	0.14	0.50	1.24	1.74	0.50	1.24	1.74	0.00	12,113.89	12,113.89	0.46	0.00	12,123.55
2018	6.28	31.03	51.94	0.14	0.50	1.15	1.66	0.18	1.08	1.25	0.00	12,052.96	12,052.96	0.43	0.00	12,061.95
2019	5.87	28.95	48.30	0.14	0.50	1.08	1.58	0.18	1.00	1.18	0.00	11,955.68	11,955.68	0.40	0.00	11,964.02
2020	5.56	27.23	45.44	0.14	0.51	1.01	1.52	0.18	0.95	1.12	0.00	11,911.49	11,911.49	0.37	0.00	11,919.32
2021	5.23	25.56	42.53	0.14	0.50	0.95	1.46	0.18	0.89	1.06	0.00	11,783.56	11,783.56	0.35	0.00	11,790.89
2022	4.94	24.13	39.94	0.14	0.50	0.90	1.40	0.18	0.84	1.01	0.00	11,662.88	11,662.88	0.33	0.00	11,669.75
2023	4.70	22.99	37.77	0.14	0.50	0.86	1.36	0.18	0.80	0.98	0.00	11,593.94	11,593.94	0.31	0.00	11,600.43
2024	4.52	22.18	36.17	0.14	0.51	0.83	1.34	0.18	0.77	0.95	0.00	11,619.37	11,619.37	0.30	0.00	11,625.61
2025	4.31	21.26	34.44	0.14	0.50	0.80	1.30	0.18	0.74	0.92	0.00	11,517.99	11,517.99	0.28	0.00	11,523.90
2026	4.31	21.26	34.44	0.14	0.50	0.80	1.30	0.18	0.74	0.92	0.00	11,517.99	11,517.99	0.28	0.00	11,523.90
2027	4.31	21.26	34.44	0.14	0.50	0.80	1.30	0.18	0.74	0.92	0.00	11,517.99	11,517.99	0.28	0.00	11,523.90
2028	4.30	21.18	34.31	0.14	0.50	0.79	1.30	0.18	0.74	0.91	0.00	11,473.86	11,473.86	0.28	0.00	11,479.74
2029	4.31	21.26	34.44	0.14	0.50	0.80	1.30	0.18	0.74	0.92	0.00	11,517.99	11,517.99	0.28	0.00	11,523.90
2030	3.62	18.79	28.95	0.14	0.50	0.71	1.22	0.18	0.66	0.84	0.00	11,346.81	11,346.81	0.24	0.00	11,351.77
2031	3.62	18.79	28.95	0.14	0.50	0.71	1.22	0.18	0.66	0.84	0.00	11,346.81	11,346.81	0.24	0.00	11,351.77

	ROG	NOx	CO	SO2	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					
2032	1.76	9.27	14.40	0.06	0.23	0.36	0.58	0.08	0.33	0.41	0.00	5,286.92	5,286.92	0.12	0.00	5,289.38
2033	31.28	1.18	2.68	0.01	0.02	0.07	0.09	0.01	0.06	0.07	0.00	529.35	529.35	0.02	0.00	529.84
2034	105.75	0.33	2.96	0.01	0.06	0.06	0.12	0.02	0.05	0.08	0.00	930.37	930.37	0.03	0.00	931.01
Total	**234.86**	**503.60**	**785.64**	**2.55**	**16.70**	**19.33**	**36.08**	**7.73**	**18.44**	**26.14**	**0.00**	**215,047.59**	**215,047.59**	**6.69**	**0.00**	**215,187.73**

2.2 Overall Operational

<u>Unmitigated Operational</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	59.65	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
Energy	1.41	12.83	10.78	0.08		0.00	0.98		0.00	0.98	0.00	38,073.72	38,073.72	2.68	1.17	38,492.82
Mobile	35.15	51.56	271.43	1.04	101.02	4.40	105.43	1.71	3.85	5.57	0.00	69,684.44	69,684.44	2.27	0.00	69,732.04
Waste						0.00	0.00		0.00	0.00	8,616.57	0.00	8,616.57	509.22	0.00	19,310.29
Water						0.00	0.00		0.00	0.00	0.00	1,973.28	1,973.28	75.82	1.95	4,169.80
Total	**96.21**	**64.39**	**282.21**	**1.12**	**101.02**	**4.40**	**106.41**	**1.71**	**3.85**	**6.55**	**8,616.57**	**109,731.44**	**118,348.01**	**589.99**	**3.12**	**131,704.95**

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	59.65	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
Energy	1.41	12.83	10.78	0.08		0.00	0.98		0.00	0.98	0.00	38,073.72	38,073.72	2.68	1.17	38,492.82
Mobile	35.15	51.56	271.43	1.04	101.02	4.40	105.43	1.71	3.85	5.57	0.00	69,684.44	69,684.44	2.27	0.00	69,732.04
Waste						0.00	0.00		0.00	0.00	8,616.57	0.00	8,616.57	509.22	0.00	19,310.29
Water						0.00	0.00		0.00	0.00	0.00	1,973.28	1,973.28	75.82	1.95	4,169.80
Total	**96.21**	**64.39**	**282.21**	**1.12**	**101.02**	**4.40**	**106.41**	**1.71**	**3.85**	**6.55**	**8,616.57**	**109,731.44**	**118,348.01**	**589.99**	**3.12**	**131,704.95**

2.3 Vegetation

Vegetation

	ROG	NOx	CO	SO2	CO2e
Category	tons				MT
Vegetation Land Change					-1,749.86
Total					**-1,749.86**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Demolition - 2011

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	1.28	10.38	5.97	0.01		0.53	0.53		0.53	0.53	0.00	885.54	885.54	0.10	0.00	887.72
Total	**1.28**	**10.38**	**5.97**	**0.01**		**0.53**	**0.53**		**0.53**	**0.53**	**0.00**	**885.54**	**885.54**	**0.10**	**0.00**	**887.72**

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	0.00	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
Vendor	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
Worker	0.02	0.02	0.19	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	20.83	20.83	0.00	0.00	20.86
Total	**0.02**	**0.02**	**0.19**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**20.83**	**20.83**	**0.00**	**0.00**	**20.86**

3.2 Demolition - 2011

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	1.28	10.38	5.97	0.01		0.53	0.53		0.53	0.53	0.00	885.54	885.54	0.10	0.00	887.72
Total	**1.28**	**10.38**	**5.97**	**0.01**		**0.53**	**0.53**		**0.53**	**0.53**	**0.00**	**885.54**	**885.54**	**0.10**	**0.00**	**887.72**

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	0.00	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
Vendor	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
Worker	0.02	0.02	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.83	20.83	0.00	0.00	20.86
Total	**0.02**	**0.02**	**0.19**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**20.83**	**20.83**	**0.00**	**0.00**	**20.86**

3.2 Demolition - 2012

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	0.19	1.50	0.88	0.00		0.08	0.08		0.08	0.08	0.00	136.24	136.24	0.02	0.00	136.55
Total	**0.19**	**1.50**	**0.88**	**0.00**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**136.24**	**136.24**	**0.02**	**0.00**	**136.55**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.14	3.14	0.00	0.00	3.14
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.14**	**3.14**	**0.00**	**0.00**	**3.14**

3.2 Demolition - 2012

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	0.19	1.50	0.88	0.00		0.08	0.08		0.08	0.08	0.00	136.24	136.24	0.02	0.00	136.55
Total	**0.19**	**1.50**	**0.88**	**0.00**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**136.24**	**136.24**	**0.02**	**0.00**	**136.55**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.14	3.14	0.00	0.00	3.14
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.14**	**3.14**	**0.00**	**0.00**	**3.14**

3.3 Site Preparation - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.63	0.00	1.63	0.89	0.00	0.89	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.94	7.62	4.30	0.01		0.38	0.38		0.38	0.38	0.00	652.81	652.81	0.08	0.00	654.41
Total	**0.94**	**7.62**	**4.30**	**0.01**	**1.63**	**0.38**	**2.01**	**0.89**	**0.38**	**1.27**	**0.00**	**652.81**	**652.81**	**0.08**	**0.00**	**654.41**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.15	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	16.95	16.95	0.00	0.00	16.98
Total	**0.01**	**0.01**	**0.15**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**16.95**	**16.95**	**0.00**	**0.00**	**16.98**

3.3 Site Preparation - 2012

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					1.63	0.00	1.63	0.89	0.00	0.89	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.94	7.62	4.30	0.01		0.38	0.38		0.38	0.38	0.00	652.81	652.81	0.08	0.00	654.41
Total	**0.94**	**7.62**	**4.30**	**0.01**	**1.63**	**0.38**	**2.01**	**0.89**	**0.38**	**1.27**	**0.00**	**652.81**	**652.81**	**0.08**	**0.00**	**654.41**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.95	16.95	0.00	0.00	16.98
Total	**0.01**	**0.01**	**0.15**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**16.95**	**16.95**	**0.00**	**0.00**	**16.98**

3.4 Grading - 2012

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					2.02	0.00	2.02	0.84	0.00	0.84	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.26	2.13	1.13	0.00		0.10	0.10		0.10	0.10	0.00	201.85	201.85	0.02	0.00	202.29
Total	**0.26**	**2.13**	**1.13**	**0.00**	**2.02**	**0.10**	**2.12**	**0.84**	**0.10**	**0.94**	**0.00**	**201.85**	**201.85**	**0.02**	**0.00**	**202.29**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	4.29	4.29	0.00	0.00	4.30
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**4.29**	**4.29**	**0.00**	**0.00**	**4.30**

3.4 Grading - 2012

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					2.02	0.00	2.02	0.84	0.00	0.84	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.26	2.13	1.13	0.00		0.10	0.10		0.10	0.10	0.00	201.85	201.85	0.02	0.00	202.29
Total	**0.26**	**2.13**	**1.13**	**0.00**	**2.02**	**0.10**	**2.12**	**0.84**	**0.10**	**0.94**	**0.00**	**201.85**	**201.85**	**0.02**	**0.00**	**202.29**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.29	4.29	0.00	0.00	4.30
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.29**	**4.29**	**0.00**	**0.00**	**4.30**

3.4 Grading - 2013

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					2.02	0.00	2.02	0.84	0.00	0.84	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.55	12.72	6.89	0.01		0.60	0.60		0.60	0.60	0.00	1,284.94	1,284.94	0.13	0.00	1,287.58
Total	**1.55**	**12.72**	**6.89**	**0.01**	**2.02**	**0.60**	**2.62**	**0.84**	**0.60**	**1.44**	**0.00**	**1,284.94**	**1,284.94**	**0.13**	**0.00**	**1,287.58**

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	0.00	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
Vendor	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
Worker	0.02	0.02	0.21	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	26.74	26.74	0.00	0.00	26.78
Total	**0.02**	**0.02**	**0.21**	**0.00**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**26.74**	**26.74**	**0.00**	**0.00**	**26.78**

3.4 Grading - 2013

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					2.02	0.00	2.02	0.84	0.00	0.84	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.55	12.72	6.89	0.01		0.60	0.60		0.60	0.60	0.00	1,284.94	1,284.94	0.13	0.00	1,287.58
Total	**1.55**	**12.72**	**6.89**	**0.01**	**2.02**	**0.60**	**2.62**	**0.84**	**0.60**	**1.44**	**0.00**	**1,284.94**	**1,284.94**	**0.13**	**0.00**	**1,287.58**

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	0.00	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
Vendor	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
Worker	0.02	0.02	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.74	26.74	0.00	0.00	26.78
Total	**0.02**	**0.02**	**0.21**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**26.74**	**26.74**	**0.00**	**0.00**	**26.78**

3.4 Grading - 2014

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					2.02	0.00	2.02	0.84	0.00	0.84	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.91	7.39	4.14	0.01		0.34	0.34		0.34	0.34	0.00	802.47	802.47	0.07	0.00	804.03
Total	**0.91**	**7.39**	**4.14**	**0.01**	**2.02**	**0.34**	**2.36**	**0.84**	**0.34**	**1.18**	**0.00**	**802.47**	**802.47**	**0.07**	**0.00**	**804.03**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.12	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	16.35	16.35	0.00	0.00	16.38
Total	**0.01**	**0.01**	**0.12**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**16.35**	**16.35**	**0.00**	**0.00**	**16.38**

3.4 Grading - 2014

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					2.02	0.00	2.02	0.84	0.00	0.84	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.91	7.39	4.14	0.01		0.34	0.34		0.34	0.34	0.00	802.47	802.47	0.07	0.00	804.03
Total	**0.91**	**7.39**	**4.14**	**0.01**	**2.02**	**0.34**	**2.36**	**0.84**	**0.34**	**1.18**	**0.00**	**802.47**	**802.47**	**0.07**	**0.00**	**804.03**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.35	16.35	0.00	0.00	16.38
Total	**0.01**	**0.01**	**0.12**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**16.35**	**16.35**	**0.00**	**0.00**	**16.38**

3.5 Building Construction - 2014

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	0.23	1.57	1.14	0.00		0.10	0.10		0.10	0.10	0.00	179.56	179.56	0.02	0.00	179.96
Total	**0.23**	**1.57**	**1.14**	**0.00**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**179.56**	**179.56**	**0.02**	**0.00**	**179.96**

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	0.00	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
Vendor	1.29	13.04	9.59	0.02	0.72	0.39	1.11	0.07	0.39	0.46	0.00	2,309.70	2,309.70	0.06	0.00	2,310.91
Worker	1.67	1.60	16.30	0.02	2.68	0.10	2.78	0.12	0.10	0.22	0.00	2,194.41	2,194.41	0.14	0.00	2,197.45
Total	**2.96**	**14.64**	**25.89**	**0.04**	**3.40**	**0.49**	**3.89**	**0.19**	**0.49**	**0.68**	**0.00**	**4,504.11**	**4,504.11**	**0.20**	**0.00**	**4,508.36**

3.5 Building Construction - 2014

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	0.23	1.57	1.14	0.00		0.10	0.10		0.10	0.10	0.00	179.56	179.56	0.02	0.00	179.96
Total	**0.23**	**1.57**	**1.14**	**0.00**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**179.56**	**179.56**	**0.02**	**0.00**	**179.96**

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	0.00	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
Vendor	1.29	13.04	9.59	0.02	0.07	0.39	0.46	0.07	0.39	0.46	0.00	2,309.70	2,309.70	0.06	0.00	2,310.91
Worker	1.67	1.60	16.30	0.02	0.12	0.10	0.22	0.12	0.10	0.22	0.00	2,194.41	2,194.41	0.14	0.00	2,197.45
Total	**2.96**	**14.64**	**25.89**	**0.04**	**0.19**	**0.49**	**0.68**	**0.19**	**0.49**	**0.68**	**0.00**	**4,504.11**	**4,504.11**	**0.20**	**0.00**	**4,508.36**

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.57	3.80	3.00	0.01		0.23	0.23		0.23	0.23	0.00	478.23	478.23	0.05	0.00	479.20
Total	**0.57**	**3.80**	**3.00**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.20**

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	0.00	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
Vendor	3.14	31.75	23.26	0.06	1.91	0.94	2.85	0.18	0.94	1.12	0.00	6,166.43	6,166.43	0.14	0.00	6,169.36
Worker	4.12	3.85	39.44	0.07	7.13	0.27	7.40	0.33	0.27	0.60	0.00	5,710.62	5,710.62	0.35	0.00	5,718.05
Total	**7.26**	**35.60**	**62.70**	**0.13**	**9.04**	**1.21**	**10.25**	**0.51**	**1.21**	**1.72**	**0.00**	**11,877.05**	**11,877.05**	**0.49**	**0.00**	**11,887.41**

3.5 Building Construction - 2015

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	0.57	3.80	3.00	0.01		0.23	0.23		0.23	0.23	0.00	478.23	478.23	0.05	0.00	479.20
Total	**0.57**	**3.80**	**3.00**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.20**

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	0.00	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
Vendor	3.14	31.75	23.26	0.06	0.18	0.94	1.12	0.18	0.94	1.12	0.00	6,166.43	6,166.43	0.14	0.00	6,169.36
Worker	4.12	3.85	39.44	0.07	0.33	0.27	0.60	0.33	0.27	0.60	0.00	5,710.62	5,710.62	0.35	0.00	5,718.05
Total	**7.26**	**35.60**	**62.70**	**0.13**	**0.51**	**1.21**	**1.72**	**0.51**	**1.21**	**1.72**	**0.00**	**11,877.05**	**11,877.05**	**0.49**	**0.00**	**11,887.41**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.52	3.46	2.97	0.01		0.21	0.21		0.21	0.21	0.00	478.23	478.23	0.04	0.00	479.11
Total	**0.52**	**3.46**	**2.97**	**0.01**		**0.21**	**0.21**		**0.21**	**0.21**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**479.11**

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	0.00	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
Vendor	2.92	29.25	21.69	0.07	1.91	0.86	2.77	0.18	0.86	1.03	0.00	6,177.87	6,177.87	0.13	0.00	6,180.59
Worker	3.84	3.50	36.21	0.07	7.13	0.28	7.41	0.33	0.28	0.60	0.00	5,620.52	5,620.52	0.33	0.00	5,627.44
Total	**6.76**	**32.75**	**57.90**	**0.14**	**9.04**	**1.14**	**10.18**	**0.51**	**1.14**	**1.63**	**0.00**	**11,798.39**	**11,798.39**	**0.46**	**0.00**	**11,808.03**

3.5 Building Construction - 2016

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	0.52	3.46	2.97	0.01		0.21	0.21		0.21	0.21	0.00	478.23	478.23	0.04	0.00	479.11
Total	**0.52**	**3.46**	**2.97**	**0.01**		**0.21**	**0.21**		**0.21**	**0.21**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**479.11**

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	0.00	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
Vendor	2.92	29.25	21.69	0.07	0.18	0.86	1.03	0.18	0.86	1.03	0.00	6,177.87	6,177.87	0.13	0.00	6,180.59
Worker	3.84	3.50	36.21	0.07	0.33	0.28	0.60	0.33	0.28	0.60	0.00	5,620.52	5,620.52	0.33	0.00	5,627.44
Total	**6.76**	**32.75**	**57.90**	**0.14**	**0.51**	**1.14**	**1.63**	**0.51**	**1.14**	**1.63**	**0.00**	**11,798.39**	**11,798.39**	**0.46**	**0.00**	**11,808.03**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.48	3.13	2.94	0.01		0.18	0.18		0.18	0.18	0.00	476.40	476.40	0.04	0.00	477.20
Total	**0.48**	**3.13**	**2.94**	**0.01**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**476.40**	**476.40**	**0.04**	**0.00**	**477.20**

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	0.00	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
Vendor	2.70	27.03	20.08	0.06	1.90	0.78	2.68	0.18	0.78	0.96	0.00	6,164.92	6,164.92	0.12	0.00	6,167.42
Worker	3.54	3.16	32.85	0.07	7.10	0.28	7.38	0.32	0.28	0.60	0.00	5,472.58	5,472.58	0.30	0.00	5,478.92
Total	**6.24**	**30.19**	**52.93**	**0.13**	**9.00**	**1.06**	**10.06**	**0.50**	**1.06**	**1.56**	**0.00**	**11,637.50**	**11,637.50**	**0.42**	**0.00**	**11,646.34**

3.5 Building Construction - 2017

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	0.48	3.13	2.94	0.01		0.18	0.18		0.18	0.18	0.00	476.40	476.40	0.04	0.00	477.20
Total	**0.48**	**3.13**	**2.94**	**0.01**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**476.40**	**476.40**	**0.04**	**0.00**	**477.20**

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	0.00	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
Vendor	2.70	27.03	20.08	0.06	0.18	0.78	0.96	0.18	0.78	0.96	0.00	6,164.92	6,164.92	0.12	0.00	6,167.42
Worker	3.54	3.16	32.85	0.07	0.32	0.28	0.60	0.32	0.28	0.60	0.00	5,472.58	5,472.58	0.30	0.00	5,478.92
Total	**6.24**	**30.19**	**52.93**	**0.13**	**0.50**	**1.06**	**1.56**	**0.50**	**1.06**	**1.56**	**0.00**	**11,637.50**	**11,637.50**	**0.42**	**0.00**	**11,646.34**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.44	2.84	2.93	0.01		0.16	0.16		0.16	0.16	0.00	478.23	478.23	0.04	0.00	478.97
Total	**0.44**	**2.84**	**2.93**	**0.01**		**0.16**	**0.16**		**0.16**	**0.16**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**478.97**

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	0.00	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
Vendor	2.54	25.30	18.87	0.07	1.91	0.72	2.63	0.06	0.66	0.72	0.00	6,198.95	6,198.95	0.11	0.00	6,201.30
Worker	3.31	2.88	30.14	0.07	7.13	0.28	7.40	0.12	0.26	0.37	0.00	5,375.78	5,375.78	0.28	0.00	5,381.69
Total	**5.85**	**28.18**	**49.01**	**0.14**	**9.04**	**1.00**	**10.03**	**0.18**	**0.92**	**1.09**	**0.00**	**11,574.73**	**11,574.73**	**0.39**	**0.00**	**11,582.99**

3.5 Building Construction - 2018

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	0.44	2.84	2.93	0.01		0.16	0.16		0.16	0.16	0.00	478.23	478.23	0.04	0.00	478.97
Total	**0.44**	**2.84**	**2.93**	**0.01**		**0.16**	**0.16**		**0.16**	**0.16**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**478.97**

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	0.00	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
Vendor	2.54	25.30	18.87	0.07	0.18	0.72	0.90	0.06	0.66	0.72	0.00	6,198.95	6,198.95	0.11	0.00	6,201.30
Worker	3.31	2.88	30.14	0.07	0.33	0.28	0.60	0.12	0.26	0.37	0.00	5,375.78	5,375.78	0.28	0.00	5,381.69
Total	**5.85**	**28.18**	**49.01**	**0.14**	**0.51**	**1.00**	**1.50**	**0.18**	**0.92**	**1.09**	**0.00**	**11,574.73**	**11,574.73**	**0.39**	**0.00**	**11,582.99**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.40	2.57	2.92	0.01		0.13	0.13		0.13	0.13	0.00	478.23	478.23	0.03	0.00	478.91
Total	**0.40**	**2.57**	**2.92**	**0.01**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.91**

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	0.00	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
Vendor	2.38	23.74	17.66	0.07	1.91	0.67	2.58	0.06	0.61	0.67	0.00	6,209.62	6,209.62	0.10	0.00	6,211.81
Worker	3.10	2.63	27.72	0.07	7.13	0.28	7.40	0.12	0.26	0.37	0.00	5,267.83	5,267.83	0.26	0.00	5,273.30
Total	**5.48**	**26.37**	**45.38**	**0.14**	**9.04**	**0.95**	**9.98**	**0.18**	**0.87**	**1.04**	**0.00**	**11,477.45**	**11,477.45**	**0.36**	**0.00**	**11,485.11**

3.5 Building Construction - 2019

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	0.40	2.57	2.92	0.01		0.13	0.13		0.13	0.13	0.00	478.23	478.23	0.03	0.00	478.91
Total	**0.40**	**2.57**	**2.92**	**0.01**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.91**

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	0.00	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
Vendor	2.38	23.74	17.66	0.07	0.18	0.67	0.85	0.06	0.61	0.67	0.00	6,209.62	6,209.62	0.10	0.00	6,211.81
Worker	3.10	2.63	27.72	0.07	0.33	0.28	0.60	0.12	0.26	0.37	0.00	5,267.83	5,267.83	0.26	0.00	5,273.30
Total	**5.48**	**26.37**	**45.38**	**0.14**	**0.51**	**0.95**	**1.45**	**0.18**	**0.87**	**1.04**	**0.00**	**11,477.45**	**11,477.45**	**0.36**	**0.00**	**11,485.11**

3.5 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	0.37	2.34	2.91	0.01		0.11	0.11		0.11	0.11	0.00	480.06	480.06	0.03	0.00	480.68
Total	**0.37**	**2.34**	**2.91**	**0.01**		**0.11**	**0.11**		**0.11**	**0.11**	**0.00**	**480.06**	**480.06**	**0.03**	**0.00**	**480.68**

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	0.00	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
Vendor	2.26	22.48	16.83	0.07	1.92	0.62	2.54	0.06	0.57	0.63	0.00	6,242.60	6,242.60	0.10	0.00	6,244.68
Worker	2.93	2.42	25.70	0.07	7.15	0.28	7.43	0.12	0.26	0.38	0.00	5,188.82	5,188.82	0.24	0.00	5,193.95
Total	**5.19**	**24.90**	**42.53**	**0.14**	**9.07**	**0.90**	**9.97**	**0.18**	**0.83**	**1.01**	**0.00**	**11,431.42**	**11,431.42**	**0.34**	**0.00**	**11,438.63**

3.5 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	0.37	2.34	2.91	0.01		0.11	0.11		0.11	0.11	0.00	480.06	480.06	0.03	0.00	480.68
Total	**0.37**	**2.34**	**2.91**	**0.01**		**0.11**	**0.11**		**0.11**	**0.11**	**0.00**	**480.06**	**480.06**	**0.03**	**0.00**	**480.68**

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	0.00	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
Vendor	2.26	22.48	16.83	0.07	0.18	0.62	0.80	0.06	0.57	0.63	0.00	6,242.60	6,242.60	0.10	0.00	6,244.68
Worker	2.93	2.42	25.70	0.07	0.33	0.28	0.60	0.12	0.26	0.38	0.00	5,188.82	5,188.82	0.24	0.00	5,193.95
Total	**5.19**	**24.90**	**42.53**	**0.14**	**0.51**	**0.90**	**1.40**	**0.18**	**0.83**	**1.01**	**0.00**	**11,431.42**	**11,431.42**	**0.34**	**0.00**	**11,438.63**

3.5 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	0.33	2.10	2.88	0.01		0.10	0.10		0.10	0.10	0.00	478.23	478.23	0.03	0.00	478.79
Total	**0.33**	**2.10**	**2.88**	**0.01**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.79**

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	0.00	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
Vendor	2.14	21.25	15.92	0.07	1.91	0.58	2.49	0.06	0.53	0.59	0.00	6,227.18	6,227.18	0.09	0.00	6,229.13
Worker	2.76	2.21	23.73	0.07	7.13	0.28	7.41	0.12	0.26	0.37	0.00	5,078.15	5,078.15	0.23	0.00	5,082.96
Total	**4.90**	**23.46**	**39.65**	**0.14**	**9.04**	**0.86**	**9.90**	**0.18**	**0.79**	**0.96**	**0.00**	**11,305.33**	**11,305.33**	**0.32**	**0.00**	**11,312.09**

3.5 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	0.33	2.10	2.88	0.01		0.10	0.10		0.10	0.10	0.00	478.23	478.23	0.03	0.00	478.79
Total	**0.33**	**2.10**	**2.88**	**0.01**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.79**

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	0.00	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
Vendor	2.14	21.25	15.92	0.07	0.18	0.58	0.76	0.06	0.53	0.59	0.00	6,227.18	6,227.18	0.09	0.00	6,229.13
Worker	2.76	2.21	23.73	0.07	0.33	0.28	0.60	0.12	0.26	0.37	0.00	5,078.15	5,078.15	0.23	0.00	5,082.96
Total	**4.90**	**23.46**	**39.65**	**0.14**	**0.51**	**0.86**	**1.36**	**0.18**	**0.79**	**0.96**	**0.00**	**11,305.33**	**11,305.33**	**0.32**	**0.00**	**11,312.09**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.31	1.89	2.86	0.01		0.08	0.08		0.08	0.08	0.00	476.40	476.40	0.02	0.00	476.92
Total	**0.31**	**1.89**	**2.86**	**0.01**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.92**

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	0.00	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
Vendor	2.03	20.21	15.15	0.07	1.90	0.54	2.45	0.06	0.50	0.56	0.00	6,211.07	6,211.07	0.09	0.00	6,212.91
Worker	2.60	2.02	21.93	0.07	7.10	0.28	7.38	0.12	0.26	0.37	0.00	4,975.42	4,975.42	0.21	0.00	4,979.92
Total	**4.63**	**22.23**	**37.08**	**0.14**	**9.00**	**0.82**	**9.83**	**0.18**	**0.76**	**0.93**	**0.00**	**11,186.49**	**11,186.49**	**0.30**	**0.00**	**11,192.83**

3.5 Building Construction - 2022

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	0.31	1.89	2.86	0.01		0.08	0.08		0.08	0.08	0.00	476.40	476.40	0.02	0.00	476.92
Total	**0.31**	**1.89**	**2.86**	**0.01**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.92**

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	0.00	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
Vendor	2.03	20.21	15.15	0.07	0.18	0.54	0.72	0.06	0.50	0.56	0.00	6,211.07	6,211.07	0.09	0.00	6,212.91
Worker	2.60	2.02	21.93	0.07	0.32	0.28	0.60	0.12	0.26	0.37	0.00	4,975.42	4,975.42	0.21	0.00	4,979.92
Total	**4.63**	**22.23**	**37.08**	**0.14**	**0.50**	**0.82**	**1.32**	**0.18**	**0.76**	**0.93**	**0.00**	**11,186.49**	**11,186.49**	**0.30**	**0.00**	**11,192.83**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.29	1.72	2.86	0.01		0.07	0.07		0.07	0.07	0.00	476.40	476.40	0.02	0.00	476.89
Total	**0.29**	**1.72**	**2.86**	**0.01**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.89**

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	0.00	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
Vendor	1.95	19.41	14.53	0.07	1.90	0.52	2.42	0.06	0.47	0.53	0.00	6,218.38	6,218.38	0.08	0.00	6,220.15
Worker	2.46	1.86	20.38	0.07	7.10	0.28	7.38	0.12	0.26	0.37	0.00	4,899.16	4,899.16	0.20	0.00	4,903.40
Total	**4.41**	**21.27**	**34.91**	**0.14**	**9.00**	**0.80**	**9.80**	**0.18**	**0.73**	**0.90**	**0.00**	**11,117.54**	**11,117.54**	**0.28**	**0.00**	**11,123.55**

3.5 Building Construction - 2023

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	0.29	1.72	2.86	0.01		0.07	0.07		0.07	0.07	0.00	476.40	476.40	0.02	0.00	476.89
Total	**0.29**	**1.72**	**2.86**	**0.01**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.89**

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	0.00	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
Vendor	1.95	19.41	14.53	0.07	0.18	0.52	0.69	0.06	0.47	0.53	0.00	6,218.38	6,218.38	0.08	0.00	6,220.15
Worker	2.46	1.86	20.38	0.07	0.32	0.28	0.60	0.12	0.26	0.37	0.00	4,899.16	4,899.16	0.20	0.00	4,903.40
Total	**4.41**	**21.27**	**34.91**	**0.14**	**0.50**	**0.80**	**1.29**	**0.18**	**0.73**	**0.90**	**0.00**	**11,117.54**	**11,117.54**	**0.28**	**0.00**	**11,123.55**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.28	1.58	2.87	0.01		0.06	0.06		0.06	0.06	0.00	480.06	480.06	0.02	0.00	480.53
Total	**0.28**	**1.58**	**2.87**	**0.01**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.53**

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	0.00	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
Vendor	1.89	18.86	14.09	0.07	1.92	0.49	2.41	0.06	0.45	0.51	0.00	6,272.51	6,272.51	0.08	0.00	6,274.21
Worker	2.35	1.74	19.21	0.07	7.15	0.28	7.43	0.12	0.26	0.38	0.00	4,866.80	4,866.80	0.19	0.00	4,870.87
Total	**4.24**	**20.60**	**33.30**	**0.14**	**9.07**	**0.77**	**9.84**	**0.18**	**0.71**	**0.89**	**0.00**	**11,139.31**	**11,139.31**	**0.27**	**0.00**	**11,145.08**

3.5 Building Construction - 2024

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	0.28	1.58	2.87	0.01		0.06	0.06		0.06	0.06	0.00	480.06	480.06	0.02	0.00	480.53
Total	**0.28**	**1.58**	**2.87**	**0.01**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.53**

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	0.00	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
Vendor	1.89	18.86	14.09	0.07	0.18	0.49	0.67	0.06	0.45	0.51	0.00	6,272.51	6,272.51	0.08	0.00	6,274.21
Worker	2.35	1.74	19.21	0.07	0.33	0.28	0.61	0.12	0.26	0.38	0.00	4,866.80	4,866.80	0.19	0.00	4,870.87
Total	**4.24**	**20.60**	**33.30**	**0.14**	**0.51**	**0.77**	**1.28**	**0.18**	**0.71**	**0.89**	**0.00**	**11,139.31**	**11,139.31**	**0.27**	**0.00**	**11,145.08**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

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	0.00	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
Vendor	1.82	18.22	13.60	0.07	1.91	0.47	2.38	0.06	0.43	0.49	0.00	6,254.13	6,254.13	0.08	0.00	6,255.78
Worker	2.23	1.60	17.98	0.07	7.13	0.28	7.41	0.12	0.26	0.38	0.00	4,785.64	4,785.64	0.18	0.00	4,789.46
Total	**4.05**	**19.82**	**31.58**	**0.14**	**9.04**	**0.75**	**9.79**	**0.18**	**0.69**	**0.87**	**0.00**	**11,039.77**	**11,039.77**	**0.26**	**0.00**	**11,045.24**

3.5 Building Construction - 2025

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	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

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	0.00	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
Vendor	1.82	18.22	13.60	0.07	0.18	0.47	0.65	0.06	0.43	0.49	0.00	6,254.13	6,254.13	0.08	0.00	6,255.78
Worker	2.23	1.60	17.98	0.07	0.33	0.28	0.60	0.12	0.26	0.38	0.00	4,785.64	4,785.64	0.18	0.00	4,789.46
Total	**4.05**	**19.82**	**31.58**	**0.14**	**0.51**	**0.75**	**1.25**	**0.18**	**0.69**	**0.87**	**0.00**	**11,039.77**	**11,039.77**	**0.26**	**0.00**	**11,045.24**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

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	0.00	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
Vendor	1.82	18.22	13.60	0.07	1.91	0.47	2.38	0.06	0.43	0.49	0.00	6,254.13	6,254.13	0.08	0.00	6,255.78
Worker	2.23	1.60	17.98	0.07	7.13	0.28	7.41	0.12	0.26	0.38	0.00	4,785.64	4,785.64	0.18	0.00	4,789.46
Total	**4.05**	**19.82**	**31.58**	**0.14**	**9.04**	**0.75**	**9.79**	**0.18**	**0.69**	**0.87**	**0.00**	**11,039.77**	**11,039.77**	**0.26**	**0.00**	**11,045.24**

3.5 Building Construction - 2026

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	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

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	0.00	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
Vendor	1.82	18.22	13.60	0.07	0.18	0.47	0.65	0.06	0.43	0.49	0.00	6,254.13	6,254.13	0.08	0.00	6,255.78
Worker	2.23	1.60	17.98	0.07	0.33	0.28	0.60	0.12	0.26	0.38	0.00	4,785.64	4,785.64	0.18	0.00	4,789.46
Total	**4.05**	**19.82**	**31.58**	**0.14**	**0.51**	**0.75**	**1.25**	**0.18**	**0.69**	**0.87**	**0.00**	**11,039.77**	**11,039.77**	**0.26**	**0.00**	**11,045.24**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

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	0.00	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
Vendor	1.82	18.22	13.60	0.07	1.91	0.47	2.38	0.06	0.43	0.49	0.00	6,254.13	6,254.13	0.08	0.00	6,255.78
Worker	2.23	1.60	17.98	0.07	7.13	0.28	7.41	0.12	0.26	0.38	0.00	4,785.64	4,785.64	0.18	0.00	4,789.46
Total	**4.05**	**19.82**	**31.58**	**0.14**	**9.04**	**0.75**	**9.79**	**0.18**	**0.69**	**0.87**	**0.00**	**11,039.77**	**11,039.77**	**0.26**	**0.00**	**11,045.24**

3.5 Building Construction - 2027

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	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

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	0.00	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
Vendor	1.82	18.22	13.60	0.07	0.18	0.47	0.65	0.06	0.43	0.49	0.00	6,254.13	6,254.13	0.08	0.00	6,255.78
Worker	2.23	1.60	17.98	0.07	0.33	0.28	0.60	0.12	0.26	0.38	0.00	4,785.64	4,785.64	0.18	0.00	4,789.46
Total	**4.05**	**19.82**	**31.58**	**0.14**	**0.51**	**0.75**	**1.25**	**0.18**	**0.69**	**0.87**	**0.00**	**11,039.77**	**11,039.77**	**0.26**	**0.00**	**11,045.24**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.85	0.01		0.05	0.05		0.05	0.05	0.00	476.40	476.40	0.02	0.00	476.83
Total	**0.26**	**1.44**	**2.85**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.83**

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	0.00	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
Vendor	1.81	18.15	13.55	0.07	1.90	0.47	2.37	0.06	0.43	0.49	0.00	6,230.17	6,230.17	0.08	0.00	6,231.81
Worker	2.22	1.60	17.92	0.07	7.10	0.28	7.38	0.12	0.26	0.37	0.00	4,767.30	4,767.30	0.18	0.00	4,771.11
Total	**4.03**	**19.75**	**31.47**	**0.14**	**9.00**	**0.75**	**9.75**	**0.18**	**0.69**	**0.86**	**0.00**	**10,997.47**	**10,997.47**	**0.26**	**0.00**	**11,002.92**

3.5 Building Construction - 2028

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	0.26	1.44	2.85	0.01		0.05	0.05		0.05	0.05	0.00	476.40	476.40	0.02	0.00	476.83
Total	**0.26**	**1.44**	**2.85**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.83**

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	0.00	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
Vendor	1.81	18.15	13.55	0.07	0.18	0.47	0.65	0.06	0.43	0.49	0.00	6,230.17	6,230.17	0.08	0.00	6,231.81
Worker	2.22	1.60	17.92	0.07	0.32	0.28	0.60	0.12	0.26	0.37	0.00	4,767.30	4,767.30	0.18	0.00	4,771.11
Total	**4.03**	**19.75**	**31.47**	**0.14**	**0.50**	**0.75**	**1.25**	**0.18**	**0.69**	**0.86**	**0.00**	**10,997.47**	**10,997.47**	**0.26**	**0.00**	**11,002.92**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

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	0.00	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
Vendor	1.82	18.22	13.60	0.07	1.91	0.47	2.38	0.06	0.43	0.49	0.00	6,254.13	6,254.13	0.08	0.00	6,255.78
Worker	2.23	1.60	17.98	0.07	7.13	0.28	7.41	0.12	0.26	0.38	0.00	4,785.64	4,785.64	0.18	0.00	4,789.46
Total	**4.05**	**19.82**	**31.58**	**0.14**	**9.04**	**0.75**	**9.79**	**0.18**	**0.69**	**0.87**	**0.00**	**11,039.77**	**11,039.77**	**0.26**	**0.00**	**11,045.24**

3.5 Building Construction - 2029

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	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

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	0.00	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
Vendor	1.82	18.22	13.60	0.07	0.18	0.47	0.65	0.06	0.43	0.49	0.00	6,254.13	6,254.13	0.08	0.00	6,255.78
Worker	2.23	1.60	17.98	0.07	0.33	0.28	0.60	0.12	0.26	0.38	0.00	4,785.64	4,785.64	0.18	0.00	4,789.46
Total	**4.05**	**19.82**	**31.58**	**0.14**	**0.51**	**0.75**	**1.25**	**0.18**	**0.69**	**0.87**	**0.00**	**11,039.77**	**11,039.77**	**0.26**	**0.00**	**11,045.24**

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.85	0.01		0.02	0.02		0.02	0.02	0.00	478.23	478.23	0.02	0.00	478.60
Total	**0.22**	**1.05**	**2.85**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.60**

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	0.00	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
Vendor	1.63	16.59	12.14	0.07	1.91	0.41	2.32	0.06	0.37	0.43	0.00	6,274.72	6,274.72	0.07	0.00	6,276.19
Worker	1.77	1.15	13.97	0.07	7.13	0.28	7.41	0.12	0.26	0.38	0.00	4,593.86	4,593.86	0.15	0.00	4,596.99
Total	**3.40**	**17.74**	**26.11**	**0.14**	**9.04**	**0.69**	**9.73**	**0.18**	**0.63**	**0.81**	**0.00**	**10,868.58**	**10,868.58**	**0.22**	**0.00**	**10,873.18**

3.5 Building Construction - 2030

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	0.22	1.05	2.85	0.01		0.02	0.02		0.02	0.02	0.00	478.23	478.23	0.02	0.00	478.60
Total	**0.22**	**1.05**	**2.85**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.60**

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	0.00	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
Vendor	1.63	16.59	12.14	0.07	0.18	0.41	0.58	0.06	0.37	0.43	0.00	6,274.72	6,274.72	0.07	0.00	6,276.19
Worker	1.77	1.15	13.97	0.07	0.33	0.28	0.61	0.12	0.26	0.38	0.00	4,593.86	4,593.86	0.15	0.00	4,596.99
Total	**3.40**	**17.74**	**26.11**	**0.14**	**0.51**	**0.69**	**1.19**	**0.18**	**0.63**	**0.81**	**0.00**	**10,868.58**	**10,868.58**	**0.22**	**0.00**	**10,873.18**

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.85	0.01		0.02	0.02		0.02	0.02	0.00	478.23	478.23	0.02	0.00	478.60
Total	**0.22**	**1.05**	**2.85**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.60**

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	0.00	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
Vendor	1.63	16.59	12.14	0.07	1.91	0.41	2.32	0.06	0.37	0.43	0.00	6,274.72	6,274.72	0.07	0.00	6,276.19
Worker	1.77	1.15	13.97	0.07	7.13	0.28	7.41	0.12	0.26	0.38	0.00	4,593.86	4,593.86	0.15	0.00	4,596.99
Total	**3.40**	**17.74**	**26.11**	**0.14**	**9.04**	**0.69**	**9.73**	**0.18**	**0.63**	**0.81**	**0.00**	**10,868.58**	**10,868.58**	**0.22**	**0.00**	**10,873.18**

3.5 Building Construction - 2031

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	0.22	1.05	2.85	0.01		0.02	0.02		0.02	0.02	0.00	478.23	478.23	0.02	0.00	478.60
Total	**0.22**	**1.05**	**2.85**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.60**

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	0.00	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
Vendor	1.63	16.59	12.14	0.07	0.18	0.41	0.58	0.06	0.37	0.43	0.00	6,274.72	6,274.72	0.07	0.00	6,276.19
Worker	1.77	1.15	13.97	0.07	0.33	0.28	0.61	0.12	0.26	0.38	0.00	4,593.86	4,593.86	0.15	0.00	4,596.99
Total	**3.40**	**17.74**	**26.11**	**0.14**	**0.51**	**0.69**	**1.19**	**0.18**	**0.63**	**0.81**	**0.00**	**10,868.58**	**10,868.58**	**0.22**	**0.00**	**10,873.18**

3.5 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.10	0.47	1.28	0.00		0.01	0.01		0.01	0.01	0.00	214.38	214.38	0.01	0.00	214.54
Total	**0.10**	**0.47**	**1.28**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**214.38**	**214.38**	**0.01**	**0.00**	**214.54**

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	0.00	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
Vendor	0.73	7.44	5.44	0.03	0.86	0.18	1.04	0.03	0.17	0.19	0.00	2,812.81	2,812.81	0.03	0.00	2,813.46
Worker	0.79	0.51	6.26	0.03	3.20	0.13	3.32	0.05	0.12	0.17	0.00	2,059.32	2,059.32	0.07	0.00	2,060.72
Total	**1.52**	**7.95**	**11.70**	**0.06**	**4.06**	**0.31**	**4.36**	**0.08**	**0.29**	**0.36**	**0.00**	**4,872.13**	**4,872.13**	**0.10**	**0.00**	**4,874.18**

3.5 Building Construction - 2032

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	0.10	0.47	1.28	0.00		0.01	0.01		0.01	0.01	0.00	214.38	214.38	0.01	0.00	214.54
Total	**0.10**	**0.47**	**1.28**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**214.38**	**214.38**	**0.01**	**0.00**	**214.54**

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	0.00	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
Vendor	0.73	7.44	5.44	0.03	0.08	0.18	0.26	0.03	0.17	0.19	0.00	2,812.81	2,812.81	0.03	0.00	2,813.46
Worker	0.79	0.51	6.26	0.03	0.15	0.13	0.27	0.05	0.12	0.17	0.00	2,059.32	2,059.32	0.07	0.00	2,060.72
Total	**1.52**	**7.95**	**11.70**	**0.06**	**0.23**	**0.31**	**0.53**	**0.08**	**0.29**	**0.36**	**0.00**	**4,872.13**	**4,872.13**	**0.10**	**0.00**	**4,874.18**

3.6 Paving - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.14	0.85	1.39	0.00		0.04	0.04		0.04	0.04	0.00	191.84	191.84	0.01	0.00	192.08
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.14**	**0.85**	**1.39**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**191.84**	**191.84**	**0.01**	**0.00**	**192.08**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	8.58	8.58	0.00	0.00	8.58
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**8.58**	**8.58**	**0.00**	**0.00**	**8.58**

3.6 Paving - 2032

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	0.14	0.85	1.39	0.00		0.04	0.04		0.04	0.04	0.00	191.84	191.84	0.01	0.00	192.08
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.14**	**0.85**	**1.39**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**191.84**	**191.84**	**0.01**	**0.00**	**192.08**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.58	8.58	0.00	0.00	8.58
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**8.58**	**8.58**	**0.00**	**0.00**	**8.58**

3.6 Paving - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.17	1.08	1.78	0.00		0.05	0.05		0.05	0.05	0.00	244.77	244.77	0.01	0.00	245.06
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.17**	**1.08**	**1.78**	**0.00**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**244.77**	**244.77**	**0.01**	**0.00**	**245.06**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.03	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	10.94	10.94	0.00	0.00	10.95
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**10.94**	**10.94**	**0.00**	**0.00**	**10.95**

3.6 Paving - 2033

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	0.17	1.08	1.78	0.00		0.05	0.05		0.05	0.05	0.00	244.77	244.77	0.01	0.00	245.06
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.17**	**1.08**	**1.78**	**0.00**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**244.77**	**244.77**	**0.01**	**0.00**	**245.06**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.94	10.94	0.00	0.00	10.95
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**10.94**	**10.94**	**0.00**	**0.00**	**10.95**

3.7 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	31.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.03	0.07	0.00		0.00	0.00		0.00	0.00	0.00	9.56	9.56	0.00	0.00	9.57
Total	**31.00**	**0.03**	**0.07**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**9.56**	**9.56**	**0.00**	**0.00**	**9.57**

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	0.00	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
Vendor	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
Worker	0.10	0.07	0.80	0.00	0.41	0.02	0.43	0.01	0.02	0.02	0.00	264.07	264.07	0.01	0.00	264.25
Total	**0.10**	**0.07**	**0.80**	**0.00**	**0.41**	**0.02**	**0.43**	**0.01**	**0.02**	**0.02**	**0.00**	**264.07**	**264.07**	**0.01**	**0.00**	**264.25**

3.7 Architectural Coating - 2033

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	31.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.03	0.07	0.00		0.00	0.00		0.00	0.00	0.00	9.56	9.56	0.00	0.00	9.57
Total	**31.00**	**0.03**	**0.07**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**9.56**	**9.56**	**0.00**	**0.00**	**9.57**

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	0.00	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
Vendor	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
Worker	0.10	0.07	0.80	0.00	0.02	0.02	0.04	0.01	0.02	0.02	0.00	264.07	264.07	0.01	0.00	264.25
Total	**0.10**	**0.07**	**0.80**	**0.00**	**0.02**	**0.02**	**0.04**	**0.01**	**0.02**	**0.02**	**0.00**	**264.07**	**264.07**	**0.01**	**0.00**	**264.25**

3.7 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	105.39					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.11	0.23	0.00		0.00	0.00		0.00	0.00	0.00	32.52	32.52	0.00	0.00	32.54
Total	**105.41**	**0.11**	**0.23**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**32.52**	**32.52**	**0.00**	**0.00**	**32.54**

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	0.00	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
Vendor	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
Worker	0.35	0.22	2.73	0.01	1.39	0.06	1.45	0.02	0.05	0.07	0.00	897.85	897.85	0.03	0.00	898.46
Total	**0.35**	**0.22**	**2.73**	**0.01**	**1.39**	**0.06**	**1.45**	**0.02**	**0.05**	**0.07**	**0.00**	**897.85**	**897.85**	**0.03**	**0.00**	**898.46**

3.7 Architectural Coating - 2034

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	105.39					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.11	0.23	0.00		0.00	0.00		0.00	0.00	0.00	32.52	32.52	0.00	0.00	32.54
Total	**105.41**	**0.11**	**0.23**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**32.52**	**32.52**	**0.00**	**0.00**	**32.54**

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	0.00	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
Vendor	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
Worker	0.35	0.22	2.73	0.01	0.06	0.06	0.12	0.02	0.05	0.07	0.00	897.85	897.85	0.03	0.00	898.46
Total	**0.35**	**0.22**	**2.73**	**0.01**	**0.06**	**0.06**	**0.12**	**0.02**	**0.05**	**0.07**	**0.00**	**897.85**	**897.85**	**0.03**	**0.00**	**898.46**

4.0 Mobile Detail

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	35.15	51.56	271.43	1.04	101.02	4.40	105.43	1.71	3.85	5.57	0.00	69,684.44	69,684.44	2.27	0.00	69,732.04
Unmitigated	35.15	51.56	271.43	1.04	101.02	4.40	105.43	1.71	3.85	5.57	0.00	69,684.44	69,684.44	2.27	0.00	69,732.04
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	26,381.45	4,996.20	2573.80	58,172,198	58,172,198
General Office Building	13,234.02	2,848.74	1177.96	23,964,714	23,964,714
Office Park	26,859.84	3,857.28	1787.52	50,104,898	50,104,898
Research & Development	8,904.78	2,086.20	1218.78	17,124,429	17,124,429
Strip Mall	8,021.92	7,609.24	3697.83	11,311,910	11,311,910
Industrial Park	22,010.69	7,874.52	2308.59	45,034,237	45,034,237
Total	105,412.70	29,272.18	12,764.48	205,712,387	205,712,387

4.3 Trip Type Information

	Miles			Trip %		
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
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00
Office Park	9.50	7.30	7.30	33.00	48.00	19.00
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00
Industrial Park	9.50	7.30	7.30	59.00	28.00	13.00

5.0 Energy Detail

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						0.00	0.00		0.00	0.00	0.00	24,107.82	24,107.82	2.41	0.91	24,441.92
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	24,107.82	24,107.82	2.41	0.91	24,441.92
NaturalGas Mitigated	1.41	12.83	10.78	0.08		0.00	0.98		0.00	0.98	0.00	13,965.90	13,965.90	0.27	0.26	14,050.89
NaturalGas Unmitigated	1.41	12.83	10.78	0.08		0.00	0.98		0.00	0.98	0.00	13,965.90	13,965.90	0.27	0.26	14,050.89
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	tons/yr										MT/yr					
General Light Industry	1.03747e+008	0.56	5.09	4.27	0.03		0.00	0.39		0.00	0.39	0.00	5,536.33	5,536.33	0.11	0.10	5,570.02
General Office Building	2.06984e+007	0.11	1.01	0.85	0.01		0.00	0.08		0.00	0.08	0.00	1,104.55	1,104.55	0.02	0.02	1,111.27
Industrial Park	5.44575e+007	0.29	2.67	2.24	0.02		0.00	0.20		0.00	0.20	0.00	2,906.06	2,906.06	0.06	0.05	2,923.74
Office Park	5.22614e+007	0.28	2.56	2.15	0.02		0.00	0.19		0.00	0.19	0.00	2,788.87	2,788.87	0.05	0.05	2,805.84
Research & Development	3.00962e+007	0.16	1.48	1.24	0.01		0.00	0.11		0.00	0.11	0.00	1,606.05	1,606.05	0.03	0.03	1,615.82
Strip Mall	450690	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00	0.00	24.05	24.05	0.00	0.00	24.20
Total		**1.40**	**12.83**	**10.77**	**0.09**		**0.00**	**0.97**		**0.00**	**0.97**	**0.00**	**13,965.91**	**13,965.91**	**0.27**	**0.25**	**14,050.89**

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	tons/yr										MT/yr					
General Light Industry	1.03747e+008	0.56	5.09	4.27	0.03		0.00	0.39		0.00	0.39	0.00	5,536.33	5,536.33	0.11	0.10	5,570.02
General Office Building	2.06984e+007	0.11	1.01	0.85	0.01		0.00	0.08		0.00	0.08	0.00	1,104.55	1,104.55	0.02	0.02	1,111.27
Industrial Park	5.44575e+007	0.29	2.67	2.24	0.02		0.00	0.20		0.00	0.20	0.00	2,906.06	2,906.06	0.06	0.05	2,923.74
Office Park	5.22614e+007	0.28	2.56	2.15	0.02		0.00	0.19		0.00	0.19	0.00	2,788.87	2,788.87	0.05	0.05	2,805.84
Research & Development	3.00962e+007	0.16	1.48	1.24	0.01		0.00	0.11		0.00	0.11	0.00	1,606.05	1,606.05	0.03	0.03	1,615.82
Strip Mall	450690	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00	0.00	24.05	24.05	0.00	0.00	24.20
Total		**1.40**	**12.83**	**10.77**	**0.09**		**0.00**	**0.97**		**0.00**	**0.97**	**0.00**	**13,965.91**	**13,965.91**	**0.27**	**0.25**	**14,050.89**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	3.41786e+007					4,495.91	0.45	0.17	4,558.21
General Office Building	2.36914e+007					3,116.41	0.31	0.12	3,159.60
Industrial Park	6.2332e+007					8,199.26	0.82	0.31	8,312.89
Office Park	5.10384e+007					6,713.68	0.67	0.25	6,806.72
Research & Development	9.91494e+006					1,304.23	0.13	0.05	1,322.30
Strip Mall	2.11589e+006					278.33	0.03	0.01	282.19
Total						**24,107.82**	**2.41**	**0.91**	**24,441.91**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	3.41786e+007					4,495.91	0.45	0.17	4,558.21
General Office Building	2.36914e+007					3,116.41	0.31	0.12	3,159.60
Industrial Park	6.2332e+007					8,199.26	0.82	0.31	8,312.89
Office Park	5.10384e+007					6,713.68	0.67	0.25	6,806.72
Research & Development	9.91494e+006					1,304.23	0.13	0.05	1,322.30
Strip Mall	2.11589e+006					278.33	0.03	0.01	282.19
Total						**24,107.82**	**2.41**	**0.91**	**24,441.91**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	59.65	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
Unmitigated	59.65	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	13.64					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	46.01					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**59.65**	**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**

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	13.64					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	46.01					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**59.65**	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					1,973.28	75.82	1.95	4,169.80
Unmitigated					1,973.28	75.82	1.95	4,169.80
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	678.481 / 0					490.53	20.76	0.53	1,091.36
General Office Building	213.636 / 130.938					214.74	6.54	0.17	404.76
Industrial Park	614.132 / 0					444.01	18.79	0.48	987.85
Office Park	418.03 / 256.212					420.19	12.80	0.33	792.01
Research & Development	539.88 / 0					390.33	16.52	0.42	868.42
Strip Mall	13.4071 / 8.21727					13.48	0.41	0.01	25.40
Total						**1,973.28**	**75.82**	**1.94**	**4,169.80**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	678.481 / 0					490.53	20.76	0.53	1,091.36
General Office Building	213.636 / 130.938					214.74	6.54	0.17	404.76
Industrial Park	614.132 / 0					444.01	18.79	0.48	987.85
Office Park	418.03 / 256.212					420.19	12.80	0.33	792.01
Research & Development	539.88 / 0					390.33	16.52	0.42	868.42
Strip Mall	13.4071 / 8.21727					13.48	0.41	0.01	25.40
Total						**1,973.28**	**75.82**	**1.94**	**4,169.80**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					8,616.57	509.22	0.00	19,310.29
Unmitigated					8,616.57	509.22	0.00	19,310.29
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	33030.9					6,704.98	396.25	0.00	15,026.30
General Office Building	1117.86					226.92	13.41	0.00	508.53
Industrial Park	5838.39					1,185.14	70.04	0.00	2,655.98
Office Park	2187.36					444.01	26.24	0.00	995.06
Research & Development	83.44					16.94	1.00	0.00	37.96
Strip Mall	190.05					38.58	2.28	0.00	86.46
Total						**8,616.57**	**509.22**	**0.00**	**19,310.29**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	33030.9					6,704.98	396.25	0.00	15,026.30
General Office Building	1117.86					226.92	13.41	0.00	508.53
Industrial Park	5838.39					1,185.14	70.04	0.00	2,655.98
Office Park	2187.36					444.01	26.24	0.00	995.06
Research & Development	83.44					16.94	1.00	0.00	37.96
Strip Mall	190.05					38.58	2.28	0.00	86.46
Total						**8,616.57**	**509.22**	**0.00**	**19,310.29**

9.0 Vegetation

sjwpcp Alt 2 GHG only

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Light Industry	910.4	1000sqft
Office Park	1777.2	1000sqft
General Office Building	2404.5	1000sqft
Strip Mall	124.6	1000sqft
Research & Development	2718.1	1000sqft

1.2 Other Project Characteristics

Urbanization Urban

Climate Zone 4

Wind Speed (m/s) 2.2

Precipitation Freq (Days) 58

Utility Company Pacific Gas & Electric Company

1.3 User Entered Comments

Project Characteristics - ADjusted C)2 factor to match PG&E estimate for 2020

Land Use - R&D = Combined industrial/commercial

Water And Wastewater - Per scaqmd water rate for industrial use is in error Use 697 gal/employee/day = 697*748*313=gal/yr

Solid Waste - Per SCAQMD waste rates for industrial uses is in error and should be 15% of quoted rate of 52965.88 ton/yr

Land Use Change -

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					
2011	1.33	10.70	6.31	0.01	1.11	0.55	1.66	0.60	0.55	1.15	0.00	920.58	920.58	0.11	0.00	922.86
2012	1.59	13.00	7.20	0.01	2.46	0.63	3.09	1.15	0.63	1.79	0.00	1,233.84	1,233.84	0.13	0.00	1,236.55
2013	4.18	24.55	32.20	0.06	4.55	0.97	5.52	0.74	0.97	1.71	0.00	5,281.55	5,281.55	0.29	0.00	5,287.74
2014	5.55	30.09	45.82	0.09	5.49	1.12	6.61	0.31	1.12	1.44	0.00	8,065.89	8,065.89	0.38	0.00	8,073.88
2015	5.10	27.46	41.91	0.09	5.49	1.03	6.51	0.31	1.03	1.34	0.00	7,997.28	7,997.28	0.35	0.00	8,004.60
2016	4.75	25.23	38.92	0.09	5.49	0.95	6.43	0.31	0.95	1.26	0.00	7,951.91	7,951.91	0.32	0.00	7,958.70
2017	4.38	23.20	35.83	0.09	5.47	0.87	6.33	0.31	0.87	1.18	0.00	7,854.18	7,854.18	0.30	0.00	7,860.42
2018	4.09	21.59	33.40	0.09	5.49	0.81	6.29	0.11	0.75	0.86	0.00	7,821.92	7,821.92	0.28	0.00	7,827.72
2019	3.82	20.12	31.15	0.09	5.49	0.75	6.23	0.11	0.70	0.81	0.00	7,765.51	7,765.51	0.26	0.00	7,770.89
2020	3.61	18.91	29.39	0.09	5.51	0.70	6.21	0.11	0.65	0.76	0.00	7,743.01	7,743.01	0.24	0.00	7,748.06
2021	3.40	17.72	27.59	0.09	5.49	0.65	6.14	0.11	0.61	0.72	0.00	7,665.59	7,665.59	0.22	0.00	7,670.30
2022	3.21	16.70	25.99	0.09	5.47	0.61	6.08	0.11	0.57	0.68	0.00	7,592.37	7,592.37	0.21	0.00	7,596.79
2023	3.05	15.89	24.65	0.09	5.47	0.58	6.04	0.11	0.54	0.65	0.00	7,552.38	7,552.38	0.20	0.00	7,556.55
2024	2.93	15.31	23.68	0.09	5.51	0.56	6.06	0.11	0.52	0.63	0.00	7,573.44	7,573.44	0.19	0.00	7,577.45
2025	1.07	5.81	8.58	0.03	1.66	0.25	1.90	0.03	0.24	0.27	0.00	2,498.18	2,498.18	0.07	0.00	2,499.72
2026	92.15	0.57	2.35	0.01	0.71	0.05	0.76	0.01	0.05	0.06	0.00	554.60	554.60	0.02	0.00	555.09
Total	**144.21**	**286.85**	**414.97**	**1.11**	**70.86**	**11.08**	**81.86**	**4.54**	**10.75**	**15.31**	**0.00**	**96,072.23**	**96,072.23**	**3.57**	**0.00**	**96,147.32**

2.1 Overall Construction

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					
2011	1.33	10.70	6.31	0.01	1.09	0.55	1.63	0.60	0.55	1.15	0.00	920.58	920.58	0.11	0.00	922.86
2012	1.59	13.00	7.20	0.01	2.43	0.63	3.06	1.15	0.63	1.79	0.00	1,233.84	1,233.84	0.13	0.00	1,236.55
2013	4.18	24.55	32.20	0.06	1.53	0.97	2.50	0.74	0.97	1.71	0.00	5,281.55	5,281.55	0.29	0.00	5,287.74
2014	5.55	30.09	45.82	0.09	0.31	1.12	1.44	0.31	1.12	1.44	0.00	8,065.89	8,065.89	0.38	0.00	8,073.88
2015	5.10	27.46	41.91	0.09	0.31	1.03	1.34	0.31	1.03	1.34	0.00	7,997.28	7,997.28	0.35	0.00	8,004.60
2016	4.75	25.23	38.92	0.09	0.31	0.95	1.26	0.31	0.95	1.26	0.00	7,951.91	7,951.91	0.32	0.00	7,958.70
2017	4.38	23.20	35.83	0.09	0.31	0.87	1.18	0.31	0.87	1.18	0.00	7,854.18	7,854.18	0.30	0.00	7,860.42
2018	4.09	21.59	33.40	0.09	0.31	0.81	1.12	0.11	0.75	0.86	0.00	7,821.92	7,821.92	0.28	0.00	7,827.72
2019	3.82	20.12	31.15	0.09	0.31	0.75	1.06	0.11	0.70	0.81	0.00	7,765.51	7,765.51	0.26	0.00	7,770.89
2020	3.61	18.91	29.39	0.09	0.31	0.70	1.01	0.11	0.65	0.76	0.00	7,743.01	7,743.01	0.24	0.00	7,748.06
2021	3.40	17.72	27.59	0.09	0.31	0.65	0.96	0.11	0.61	0.72	0.00	7,665.59	7,665.59	0.22	0.00	7,670.30
2022	3.21	16.70	25.99	0.09	0.31	0.61	0.92	0.11	0.57	0.68	0.00	7,592.37	7,592.37	0.21	0.00	7,596.79
2023	3.05	15.89	24.65	0.09	0.31	0.58	0.89	0.11	0.54	0.65	0.00	7,552.38	7,552.38	0.20	0.00	7,556.55
2024	2.93	15.31	23.68	0.09	0.31	0.56	0.87	0.11	0.52	0.63	0.00	7,573.44	7,573.44	0.19	0.00	7,577.45
2025	1.07	5.81	8.58	0.03	0.09	0.25	0.34	0.03	0.24	0.27	0.00	2,498.18	2,498.18	0.07	0.00	2,499.72
2026	92.15	0.57	2.35	0.01	0.03	0.05	0.08	0.01	0.05	0.06	0.00	554.60	554.60	0.02	0.00	555.09
Total	**144.21**	**286.85**	**414.97**	**1.11**	**8.58**	**11.08**	**19.66**	**4.54**	**10.75**	**15.31**	**0.00**	**96,072.23**	**96,072.23**	**3.57**	**0.00**	**96,147.32**

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	40.18	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
Energy	0.97	8.86	7.44	0.05		0.00	0.67		0.00	0.67	0.00	25,449.50	25,449.50	1.77	0.78	25,727.26
Mobile	25.98	38.20	199.84	0.76	73.65	3.22	76.87	1.25	2.82	4.07	0.00	50,873.21	50,873.21	1.66	0.00	50,908.07
Waste						0.00	0.00		0.00	0.00	2,470.65	0.00	2,470.65	146.01	0.00	5,536.89
Water						0.00	0.00		0.00	0.00	0.00	1,840.58	1,840.58	68.93	1.77	3,837.88
Total	**67.13**	**47.06**	**207.28**	**0.81**	**73.65**	**3.22**	**77.54**	**1.25**	**2.82**	**4.74**	**2,470.65**	**78,163.29**	**80,633.94**	**218.37**	**2.55**	**86,010.10**

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	40.18	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
Energy	0.97	8.86	7.44	0.05		0.00	0.67		0.00	0.67	0.00	25,449.50	25,449.50	1.77	0.78	25,727.26
Mobile	25.98	38.20	199.84	0.76	73.65	3.22	76.87	1.25	2.82	4.07	0.00	50,873.21	50,873.21	1.66	0.00	50,908.07
Waste						0.00	0.00		0.00	0.00	2,470.65	0.00	2,470.65	146.01	0.00	5,536.89
Water						0.00	0.00		0.00	0.00	0.00	1,840.58	1,840.58	68.93	1.77	3,837.88
Total	**67.13**	**47.06**	**207.28**	**0.81**	**73.65**	**3.22**	**77.54**	**1.25**	**2.82**	**4.74**	**2,470.65**	**78,163.29**	**80,633.94**	**218.37**	**2.55**	**86,010.10**

2.3 Vegetation

Vegetation

	ROG	NOx	CO	SO2	CO2e
Category	tons				MT
Vegetation Land Change					-1,749.86
Total					**-1,749.86**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Demolition - 2011

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	0.98	7.99	4.59	0.01		0.41	0.41		0.41	0.41	0.00	681.18	681.18	0.08	0.00	682.86
Total	**0.98**	**7.99**	**4.59**	**0.01**		**0.41**	**0.41**		**0.41**	**0.41**	**0.00**	**681.18**	**681.18**	**0.08**	**0.00**	**682.86**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.15	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	16.02	16.02	0.00	0.00	16.05
Total	**0.01**	**0.01**	**0.15**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**16.02**	**16.02**	**0.00**	**0.00**	**16.05**

3.2 Demolition - 2011

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.98	7.99	4.59	0.01		0.41	0.41		0.41	0.41	0.00	681.18	681.18	0.08	0.00	682.86
Total	**0.98**	**7.99**	**4.59**	**0.01**		**0.41**	**0.41**		**0.41**	**0.41**	**0.00**	**681.18**	**681.18**	**0.08**	**0.00**	**682.86**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	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
Vendor	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
Worker	0.01	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.02	16.02	0.00	0.00	16.05
Total	**0.01**	**0.01**	**0.15**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**16.02**	**16.02**	**0.00**	**0.00**	**16.05**

3.3 Site Preparation - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.08	0.00	1.08	0.60	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.33	2.69	1.51	0.00		0.14	0.14		0.14	0.14	0.00	217.60	217.60	0.03	0.00	218.17
Total	**0.33**	**2.69**	**1.51**	**0.00**	**1.08**	**0.14**	**1.22**	**0.60**	**0.14**	**0.74**	**0.00**	**217.60**	**217.60**	**0.03**	**0.00**	**218.17**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.77	5.77	0.00	0.00	5.78
Total	**0.01**	**0.01**	**0.05**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.77**	**5.77**	**0.00**	**0.00**	**5.78**

3.3 Site Preparation - 2011

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					1.08	0.00	1.08	0.60	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.33	2.69	1.51	0.00		0.14	0.14		0.14	0.14	0.00	217.60	217.60	0.03	0.00	218.17
Total	**0.33**	**2.69**	**1.51**	**0.00**	**1.08**	**0.14**	**1.22**	**0.60**	**0.14**	**0.74**	**0.00**	**217.60**	**217.60**	**0.03**	**0.00**	**218.17**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	5.77	0.00	0.00	5.78
Total	**0.01**	**0.01**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.77**	**5.77**	**0.00**	**0.00**	**5.78**

3.3 Site Preparation - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.08	0.00	1.08	0.60	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.31	2.54	1.43	0.00		0.13	0.13		0.13	0.13	0.00	217.60	217.60	0.03	0.00	218.14
Total	**0.31**	**2.54**	**1.43**	**0.00**	**1.08**	**0.13**	**1.21**	**0.60**	**0.13**	**0.73**	**0.00**	**217.60**	**217.60**	**0.03**	**0.00**	**218.14**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.65	5.65	0.00	0.00	5.66
Total	**0.00**	**0.00**	**0.05**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.65**	**5.65**	**0.00**	**0.00**	**5.66**

3.3 Site Preparation - 2012

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					1.08	0.00	1.08	0.60	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.31	2.54	1.43	0.00		0.13	0.13		0.13	0.13	0.00	217.60	217.60	0.03	0.00	218.14
Total	**0.31**	**2.54**	**1.43**	**0.00**	**1.08**	**0.13**	**1.21**	**0.60**	**0.13**	**0.73**	**0.00**	**217.60**	**217.60**	**0.03**	**0.00**	**218.14**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.65	5.65	0.00	0.00	5.66
Total	**0.00**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.65**	**5.65**	**0.00**	**0.00**	**5.66**

3.4 Grading - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.34	0.00	1.34	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.26	10.44	5.54	0.01		0.50	0.50		0.50	0.50	0.00	989.55	989.55	0.10	0.00	991.70
Total	**1.26**	**10.44**	**5.54**	**0.01**	**1.34**	**0.50**	**1.84**	**0.56**	**0.50**	**1.06**	**0.00**	**989.55**	**989.55**	**0.10**	**0.00**	**991.70**

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	0.00	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
Vendor	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
Worker	0.02	0.02	0.18	0.00	0.02	0.00	0.03	0.00	0.00	0.00	0.00	21.03	21.03	0.00	0.00	21.06
Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.02**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**21.03**	**21.03**	**0.00**	**0.00**	**21.06**

3.4 Grading - 2012

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					1.34	0.00	1.34	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.26	10.44	5.54	0.01		0.50	0.50		0.50	0.50	0.00	989.55	989.55	0.10	0.00	991.70
Total	**1.26**	**10.44**	**5.54**	**0.01**	**1.34**	**0.50**	**1.84**	**0.56**	**0.50**	**1.06**	**0.00**	**989.55**	**989.55**	**0.10**	**0.00**	**991.70**

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	0.00	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
Vendor	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
Worker	0.02	0.02	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.03	21.03	0.00	0.00	21.06
Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**21.03**	**21.03**	**0.00**	**0.00**	**21.06**

3.4 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.34	0.00	1.34	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.65	5.31	2.88	0.01		0.25	0.25		0.25	0.25	0.00	536.62	536.62	0.05	0.00	537.72
Total	**0.65**	**5.31**	**2.88**	**0.01**	**1.34**	**0.25**	**1.59**	**0.56**	**0.25**	**0.81**	**0.00**	**536.62**	**536.62**	**0.05**	**0.00**	**537.72**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.09	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	11.17	11.17	0.00	0.00	11.19
Total	**0.01**	**0.01**	**0.09**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**11.17**	**11.17**	**0.00**	**0.00**	**11.19**

3.4 Grading - 2013

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					1.34	0.00	1.34	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.65	5.31	2.88	0.01		0.25	0.25		0.25	0.25	0.00	536.62	536.62	0.05	0.00	537.72
Total	**0.65**	**5.31**	**2.88**	**0.01**	**1.34**	**0.25**	**1.59**	**0.56**	**0.25**	**0.81**	**0.00**	**536.62**	**536.62**	**0.05**	**0.00**	**537.72**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.17	11.17	0.00	0.00	11.19
Total	**0.01**	**0.01**	**0.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11.17**	**11.17**	**0.00**	**0.00**	**11.19**

3.5 Building Construction - 2013

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	0.39	2.63	1.78	0.00		0.17	0.17		0.17	0.17	0.00	278.51	278.51	0.03	0.00	279.18
Total	**0.39**	**2.63**	**1.78**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**278.51**	**278.51**	**0.03**	**0.00**	**279.18**

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	0.00	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
Vendor	1.48	14.99	11.06	0.03	0.75	0.45	1.20	0.07	0.45	0.52	0.00	2,407.19	2,407.19	0.07	0.00	2,408.58
Worker	1.66	1.61	16.39	0.02	2.45	0.09	2.54	0.11	0.09	0.21	0.00	2,048.06	2,048.06	0.14	0.00	2,051.08
Total	**3.14**	**16.60**	**27.45**	**0.05**	**3.20**	**0.54**	**3.74**	**0.18**	**0.54**	**0.73**	**0.00**	**4,455.25**	**4,455.25**	**0.21**	**0.00**	**4,459.66**

3.5 Building Construction - 2013

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	0.39	2.63	1.78	0.00		0.17	0.17		0.17	0.17	0.00	278.51	278.51	0.03	0.00	279.18
Total	**0.39**	**2.63**	**1.78**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**278.51**	**278.51**	**0.03**	**0.00**	**279.18**

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	0.00	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
Vendor	1.48	14.99	11.06	0.03	0.07	0.45	0.52	0.07	0.45	0.52	0.00	2,407.19	2,407.19	0.07	0.00	2,408.58
Worker	1.66	1.61	16.39	0.02	0.11	0.09	0.21	0.11	0.09	0.21	0.00	2,048.06	2,048.06	0.14	0.00	2,051.08
Total	**3.14**	**16.60**	**27.45**	**0.05**	**0.18**	**0.54**	**0.73**	**0.18**	**0.54**	**0.73**	**0.00**	**4,455.25**	**4,455.25**	**0.21**	**0.00**	**4,459.66**

3.5 Building Construction - 2014

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	0.62	4.18	3.03	0.01		0.26	0.26		0.26	0.26	0.00	478.23	478.23	0.05	0.00	479.28
Total	**0.62**	**4.18**	**3.03**	**0.01**		**0.26**	**0.26**		**0.26**	**0.26**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.28**

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	0.00	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
Vendor	2.31	23.40	17.21	0.04	1.29	0.70	1.99	0.12	0.70	0.82	0.00	4,144.44	4,144.44	0.10	0.00	4,146.61
Worker	2.62	2.51	25.58	0.04	4.20	0.16	4.36	0.19	0.16	0.35	0.00	3,443.22	3,443.22	0.23	0.00	3,447.99
Total	**4.93**	**25.91**	**42.79**	**0.08**	**5.49**	**0.86**	**6.35**	**0.31**	**0.86**	**1.17**	**0.00**	**7,587.66**	**7,587.66**	**0.33**	**0.00**	**7,594.60**

3.5 Building Construction - 2014

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	0.62	4.18	3.03	0.01		0.26	0.26		0.26	0.26	0.00	478.23	478.23	0.05	0.00	479.28
Total	**0.62**	**4.18**	**3.03**	**0.01**		**0.26**	**0.26**		**0.26**	**0.26**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.28**

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	0.00	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
Vendor	2.31	23.40	17.21	0.04	0.12	0.70	0.82	0.12	0.70	0.82	0.00	4,144.44	4,144.44	0.10	0.00	4,146.61
Worker	2.62	2.51	25.58	0.04	0.19	0.16	0.35	0.19	0.16	0.35	0.00	3,443.22	3,443.22	0.23	0.00	3,447.99
Total	**4.93**	**25.91**	**42.79**	**0.08**	**0.31**	**0.86**	**1.17**	**0.31**	**0.86**	**1.17**	**0.00**	**7,587.66**	**7,587.66**	**0.33**	**0.00**	**7,594.60**

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.57	3.80	3.00	0.01		0.23	0.23		0.23	0.23	0.00	478.23	478.23	0.05	0.00	479.20
Total	**0.57**	**3.80**	**3.00**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.20**

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	0.00	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
Vendor	2.11	21.39	15.67	0.04	1.29	0.63	1.92	0.12	0.63	0.75	0.00	4,154.60	4,154.60	0.09	0.00	4,156.57
Worker	2.43	2.27	23.24	0.04	4.20	0.16	4.36	0.19	0.16	0.35	0.00	3,364.45	3,364.45	0.21	0.00	3,368.83
Total	**4.54**	**23.66**	**38.91**	**0.08**	**5.49**	**0.79**	**6.28**	**0.31**	**0.79**	**1.10**	**0.00**	**7,519.05**	**7,519.05**	**0.30**	**0.00**	**7,525.40**

3.5 Building Construction - 2015

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	0.57	3.80	3.00	0.01		0.23	0.23		0.23	0.23	0.00	478.23	478.23	0.05	0.00	479.20
Total	**0.57**	**3.80**	**3.00**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.20**

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	0.00	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
Vendor	2.11	21.39	15.67	0.04	0.12	0.63	0.75	0.12	0.63	0.75	0.00	4,154.60	4,154.60	0.09	0.00	4,156.57
Worker	2.43	2.27	23.24	0.04	0.19	0.16	0.35	0.19	0.16	0.35	0.00	3,364.45	3,364.45	0.21	0.00	3,368.83
Total	**4.54**	**23.66**	**38.91**	**0.08**	**0.31**	**0.79**	**1.10**	**0.31**	**0.79**	**1.10**	**0.00**	**7,519.05**	**7,519.05**	**0.30**	**0.00**	**7,525.40**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.52	3.46	2.97	0.01		0.21	0.21		0.21	0.21	0.00	478.23	478.23	0.04	0.00	479.11
Total	**0.52**	**3.46**	**2.97**	**0.01**		**0.21**	**0.21**		**0.21**	**0.21**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**479.11**

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	0.00	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
Vendor	1.96	19.71	14.61	0.04	1.29	0.58	1.86	0.12	0.58	0.70	0.00	4,162.31	4,162.31	0.09	0.00	4,164.13
Worker	2.26	2.06	21.34	0.04	4.20	0.16	4.36	0.19	0.16	0.36	0.00	3,311.37	3,311.37	0.19	0.00	3,315.45
Total	**4.22**	**21.77**	**35.95**	**0.08**	**5.49**	**0.74**	**6.22**	**0.31**	**0.74**	**1.06**	**0.00**	**7,473.68**	**7,473.68**	**0.28**	**0.00**	**7,479.58**

3.5 Building Construction - 2016

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	0.52	3.46	2.97	0.01		0.21	0.21		0.21	0.21	0.00	478.23	478.23	0.04	0.00	479.11
Total	**0.52**	**3.46**	**2.97**	**0.01**		**0.21**	**0.21**		**0.21**	**0.21**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**479.11**

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	0.00	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
Vendor	1.96	19.71	14.61	0.04	0.12	0.58	0.70	0.12	0.58	0.70	0.00	4,162.31	4,162.31	0.09	0.00	4,164.13
Worker	2.26	2.06	21.34	0.04	0.19	0.16	0.36	0.19	0.16	0.36	0.00	3,311.37	3,311.37	0.19	0.00	3,315.45
Total	**4.22**	**21.77**	**35.95**	**0.08**	**0.31**	**0.74**	**1.06**	**0.31**	**0.74**	**1.06**	**0.00**	**7,473.68**	**7,473.68**	**0.28**	**0.00**	**7,479.58**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.48	3.13	2.94	0.01		0.18	0.18		0.18	0.18	0.00	476.40	476.40	0.04	0.00	477.20
Total	**0.48**	**3.13**	**2.94**	**0.01**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**476.40**	**476.40**	**0.04**	**0.00**	**477.20**

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	0.00	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
Vendor	1.82	18.21	13.53	0.04	1.28	0.53	1.81	0.12	0.53	0.65	0.00	4,153.58	4,153.58	0.08	0.00	4,155.26
Worker	2.09	1.86	19.36	0.04	4.18	0.16	4.35	0.19	0.16	0.35	0.00	3,224.21	3,224.21	0.18	0.00	3,227.95
Total	**3.91**	**20.07**	**32.89**	**0.08**	**5.46**	**0.69**	**6.16**	**0.31**	**0.69**	**1.00**	**0.00**	**7,377.79**	**7,377.79**	**0.26**	**0.00**	**7,383.21**

3.5 Building Construction - 2017

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	0.48	3.13	2.94	0.01		0.18	0.18		0.18	0.18	0.00	476.40	476.40	0.04	0.00	477.20
Total	**0.48**	**3.13**	**2.94**	**0.01**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**476.40**	**476.40**	**0.04**	**0.00**	**477.20**

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	0.00	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
Vendor	1.82	18.21	13.53	0.04	0.12	0.53	0.65	0.12	0.53	0.65	0.00	4,153.58	4,153.58	0.08	0.00	4,155.26
Worker	2.09	1.86	19.36	0.04	0.19	0.16	0.35	0.19	0.16	0.35	0.00	3,224.21	3,224.21	0.18	0.00	3,227.95
Total	**3.91**	**20.07**	**32.89**	**0.08**	**0.31**	**0.69**	**1.00**	**0.31**	**0.69**	**1.00**	**0.00**	**7,377.79**	**7,377.79**	**0.26**	**0.00**	**7,383.21**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.44	2.84	2.93	0.01		0.16	0.16		0.16	0.16	0.00	478.23	478.23	0.04	0.00	478.97
Total	**0.44**	**2.84**	**2.93**	**0.01**		**0.16**	**0.16**		**0.16**	**0.16**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**478.97**

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	0.00	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
Vendor	1.71	17.05	12.71	0.04	1.29	0.49	1.77	0.04	0.45	0.49	0.00	4,176.51	4,176.51	0.08	0.00	4,178.09
Worker	1.95	1.70	17.76	0.04	4.20	0.16	4.36	0.07	0.15	0.22	0.00	3,167.18	3,167.18	0.17	0.00	3,170.66
Total	**3.66**	**18.75**	**30.47**	**0.08**	**5.49**	**0.65**	**6.13**	**0.11**	**0.60**	**0.71**	**0.00**	**7,343.69**	**7,343.69**	**0.25**	**0.00**	**7,348.75**

3.5 Building Construction - 2018

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	0.44	2.84	2.93	0.01		0.16	0.16		0.16	0.16	0.00	478.23	478.23	0.04	0.00	478.97
Total	**0.44**	**2.84**	**2.93**	**0.01**		**0.16**	**0.16**		**0.16**	**0.16**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**478.97**

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	0.00	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
Vendor	1.71	17.05	12.71	0.04	0.12	0.49	0.61	0.04	0.45	0.49	0.00	4,176.51	4,176.51	0.08	0.00	4,178.09
Worker	1.95	1.70	17.76	0.04	0.19	0.16	0.36	0.07	0.15	0.22	0.00	3,167.18	3,167.18	0.17	0.00	3,170.66
Total	**3.66**	**18.75**	**30.47**	**0.08**	**0.31**	**0.65**	**0.97**	**0.11**	**0.60**	**0.71**	**0.00**	**7,343.69**	**7,343.69**	**0.25**	**0.00**	**7,348.75**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.40	2.57	2.92	0.01		0.13	0.13		0.13	0.13	0.00	478.23	478.23	0.03	0.00	478.91
Total	**0.40**	**2.57**	**2.92**	**0.01**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.91**

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	0.00	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
Vendor	1.60	16.00	11.90	0.04	1.29	0.45	1.74	0.04	0.41	0.45	0.00	4,183.70	4,183.70	0.07	0.00	4,185.17
Worker	1.82	1.55	16.33	0.04	4.20	0.16	4.36	0.07	0.15	0.22	0.00	3,103.58	3,103.58	0.15	0.00	3,106.81
Total	**3.42**	**17.55**	**28.23**	**0.08**	**5.49**	**0.61**	**6.10**	**0.11**	**0.56**	**0.67**	**0.00**	**7,287.28**	**7,287.28**	**0.22**	**0.00**	**7,291.98**

3.5 Building Construction - 2019

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	0.40	2.57	2.92	0.01		0.13	0.13		0.13	0.13	0.00	478.23	478.23	0.03	0.00	478.91
Total	**0.40**	**2.57**	**2.92**	**0.01**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.91**

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	0.00	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
Vendor	1.60	16.00	11.90	0.04	0.12	0.45	0.57	0.04	0.41	0.45	0.00	4,183.70	4,183.70	0.07	0.00	4,185.17
Worker	1.82	1.55	16.33	0.04	0.19	0.16	0.36	0.07	0.15	0.22	0.00	3,103.58	3,103.58	0.15	0.00	3,106.81
Total	**3.42**	**17.55**	**28.23**	**0.08**	**0.31**	**0.61**	**0.93**	**0.11**	**0.56**	**0.67**	**0.00**	**7,287.28**	**7,287.28**	**0.22**	**0.00**	**7,291.98**

3.5 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	0.37	2.34	2.91	0.01		0.11	0.11		0.11	0.11	0.00	480.06	480.06	0.03	0.00	480.68
Total	**0.37**	**2.34**	**2.91**	**0.01**		**0.11**	**0.11**		**0.11**	**0.11**	**0.00**	**480.06**	**480.06**	**0.03**	**0.00**	**480.68**

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	0.00	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
Vendor	1.52	15.14	11.34	0.04	1.29	0.42	1.71	0.04	0.39	0.43	0.00	4,205.92	4,205.92	0.07	0.00	4,207.32
Worker	1.73	1.42	15.14	0.04	4.22	0.16	4.38	0.07	0.15	0.22	0.00	3,057.03	3,057.03	0.14	0.00	3,060.06
Total	**3.25**	**16.56**	**26.48**	**0.08**	**5.51**	**0.58**	**6.09**	**0.11**	**0.54**	**0.65**	**0.00**	**7,262.95**	**7,262.95**	**0.21**	**0.00**	**7,267.38**

3.5 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	0.37	2.34	2.91	0.01		0.11	0.11		0.11	0.11	0.00	480.06	480.06	0.03	0.00	480.68
Total	**0.37**	**2.34**	**2.91**	**0.01**		**0.11**	**0.11**		**0.11**	**0.11**	**0.00**	**480.06**	**480.06**	**0.03**	**0.00**	**480.68**

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	0.00	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
Vendor	1.52	15.14	11.34	0.04	0.12	0.42	0.54	0.04	0.39	0.43	0.00	4,205.92	4,205.92	0.07	0.00	4,207.32
Worker	1.73	1.42	15.14	0.04	0.19	0.16	0.36	0.07	0.15	0.22	0.00	3,057.03	3,057.03	0.14	0.00	3,060.06
Total	**3.25**	**16.56**	**26.48**	**0.08**	**0.31**	**0.58**	**0.90**	**0.11**	**0.54**	**0.65**	**0.00**	**7,262.95**	**7,262.95**	**0.21**	**0.00**	**7,267.38**

3.5 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	0.33	2.10	2.88	0.01		0.10	0.10		0.10	0.10	0.00	478.23	478.23	0.03	0.00	478.79
Total	**0.33**	**2.10**	**2.88**	**0.01**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.79**

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	0.00	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
Vendor	1.44	14.32	10.72	0.04	1.29	0.39	1.68	0.04	0.36	0.40	0.00	4,195.53	4,195.53	0.06	0.00	4,196.84
Worker	1.63	1.30	13.98	0.04	4.20	0.16	4.36	0.07	0.15	0.22	0.00	2,991.83	2,991.83	0.13	0.00	2,994.67
Total	**3.07**	**15.62**	**24.70**	**0.08**	**5.49**	**0.55**	**6.04**	**0.11**	**0.51**	**0.62**	**0.00**	**7,187.36**	**7,187.36**	**0.19**	**0.00**	**7,191.51**

3.5 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	0.33	2.10	2.88	0.01		0.10	0.10		0.10	0.10	0.00	478.23	478.23	0.03	0.00	478.79
Total	**0.33**	**2.10**	**2.88**	**0.01**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.79**

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	0.00	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
Vendor	1.44	14.32	10.72	0.04	0.12	0.39	0.51	0.04	0.36	0.40	0.00	4,195.53	4,195.53	0.06	0.00	4,196.84
Worker	1.63	1.30	13.98	0.04	0.19	0.16	0.36	0.07	0.15	0.22	0.00	2,991.83	2,991.83	0.13	0.00	2,994.67
Total	**3.07**	**15.62**	**24.70**	**0.08**	**0.31**	**0.55**	**0.87**	**0.11**	**0.51**	**0.62**	**0.00**	**7,187.36**	**7,187.36**	**0.19**	**0.00**	**7,191.51**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.31	1.89	2.86	0.01		0.08	0.08		0.08	0.08	0.00	476.40	476.40	0.02	0.00	476.92
Total	**0.31**	**1.89**	**2.86**	**0.01**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.92**

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	0.00	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
Vendor	1.37	13.62	10.21	0.04	1.28	0.37	1.65	0.04	0.34	0.38	0.00	4,184.67	4,184.67	0.06	0.00	4,185.91
Worker	1.53	1.19	12.92	0.04	4.18	0.16	4.35	0.07	0.15	0.22	0.00	2,931.31	2,931.31	0.13	0.00	2,933.96
Total	**2.90**	**14.81**	**23.13**	**0.08**	**5.46**	**0.53**	**6.00**	**0.11**	**0.49**	**0.60**	**0.00**	**7,115.98**	**7,115.98**	**0.19**	**0.00**	**7,119.87**

3.5 Building Construction - 2022

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	0.31	1.89	2.86	0.01		0.08	0.08		0.08	0.08	0.00	476.40	476.40	0.02	0.00	476.92
Total	**0.31**	**1.89**	**2.86**	**0.01**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.92**

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	0.00	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
Vendor	1.37	13.62	10.21	0.04	0.12	0.37	0.49	0.04	0.34	0.38	0.00	4,184.67	4,184.67	0.06	0.00	4,185.91
Worker	1.53	1.19	12.92	0.04	0.19	0.16	0.35	0.07	0.15	0.22	0.00	2,931.31	2,931.31	0.13	0.00	2,933.96
Total	**2.90**	**14.81**	**23.13**	**0.08**	**0.31**	**0.53**	**0.84**	**0.11**	**0.49**	**0.60**	**0.00**	**7,115.98**	**7,115.98**	**0.19**	**0.00**	**7,119.87**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.29	1.72	2.86	0.01		0.07	0.07		0.07	0.07	0.00	476.40	476.40	0.02	0.00	476.89
Total	**0.29**	**1.72**	**2.86**	**0.01**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.89**

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	0.00	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
Vendor	1.31	13.08	9.79	0.04	1.28	0.35	1.63	0.04	0.32	0.36	0.00	4,189.60	4,189.60	0.06	0.00	4,190.79
Worker	1.45	1.10	12.01	0.04	4.18	0.16	4.35	0.07	0.15	0.22	0.00	2,886.38	2,886.38	0.12	0.00	2,888.88
Total	**2.76**	**14.18**	**21.80**	**0.08**	**5.46**	**0.51**	**5.98**	**0.11**	**0.47**	**0.58**	**0.00**	**7,075.98**	**7,075.98**	**0.18**	**0.00**	**7,079.67**

3.5 Building Construction - 2023

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	0.29	1.72	2.86	0.01		0.07	0.07		0.07	0.07	0.00	476.40	476.40	0.02	0.00	476.89
Total	**0.29**	**1.72**	**2.86**	**0.01**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.89**

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	0.00	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
Vendor	1.31	13.08	9.79	0.04	0.12	0.35	0.47	0.04	0.32	0.36	0.00	4,189.60	4,189.60	0.06	0.00	4,190.79
Worker	1.45	1.10	12.01	0.04	0.19	0.16	0.35	0.07	0.15	0.22	0.00	2,886.38	2,886.38	0.12	0.00	2,888.88
Total	**2.76**	**14.18**	**21.80**	**0.08**	**0.31**	**0.51**	**0.82**	**0.11**	**0.47**	**0.58**	**0.00**	**7,075.98**	**7,075.98**	**0.18**	**0.00**	**7,079.67**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.28	1.58	2.87	0.01		0.06	0.06		0.06	0.06	0.00	480.06	480.06	0.02	0.00	480.53
Total	**0.28**	**1.58**	**2.87**	**0.01**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.53**

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	0.00	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
Vendor	1.27	12.71	9.49	0.04	1.29	0.33	1.63	0.04	0.31	0.35	0.00	4,226.06	4,226.06	0.05	0.00	4,227.22
Worker	1.39	1.02	11.32	0.04	4.22	0.16	4.38	0.07	0.15	0.22	0.00	2,867.31	2,867.31	0.11	0.00	2,869.71
Total	**2.66**	**13.73**	**20.81**	**0.08**	**5.51**	**0.49**	**6.01**	**0.11**	**0.46**	**0.57**	**0.00**	**7,093.37**	**7,093.37**	**0.16**	**0.00**	**7,096.93**

3.5 Building Construction - 2024

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	0.28	1.58	2.87	0.01		0.06	0.06		0.06	0.06	0.00	480.06	480.06	0.02	0.00	480.53
Total	**0.28**	**1.58**	**2.87**	**0.01**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.53**

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	0.00	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
Vendor	1.27	12.71	9.49	0.04	0.12	0.33	0.45	0.04	0.31	0.35	0.00	4,226.06	4,226.06	0.05	0.00	4,227.22
Worker	1.39	1.02	11.32	0.04	0.19	0.16	0.36	0.07	0.15	0.22	0.00	2,867.31	2,867.31	0.11	0.00	2,869.71
Total	**2.66**	**13.73**	**20.81**	**0.08**	**0.31**	**0.49**	**0.81**	**0.11**	**0.46**	**0.57**	**0.00**	**7,093.37**	**7,093.37**	**0.16**	**0.00**	**7,096.93**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.08	0.43	0.85	0.00		0.01	0.01		0.01	0.01	0.00	142.92	142.92	0.01	0.00	143.05
Total	**0.08**	**0.43**	**0.85**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**142.92**	**142.92**	**0.01**	**0.00**	**143.05**

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	0.00	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
Vendor	0.37	3.67	2.74	0.01	0.38	0.09	0.48	0.01	0.09	0.10	0.00	1,259.26	1,259.26	0.02	0.00	1,259.59
Worker	0.39	0.28	3.17	0.01	1.25	0.05	1.30	0.02	0.05	0.07	0.00	842.61	842.61	0.03	0.00	843.28
Total	**0.76**	**3.95**	**5.91**	**0.02**	**1.63**	**0.14**	**1.78**	**0.03**	**0.14**	**0.17**	**0.00**	**2,101.87**	**2,101.87**	**0.05**	**0.00**	**2,102.87**

3.5 Building Construction - 2025

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	0.08	0.43	0.85	0.00		0.01	0.01		0.01	0.01	0.00	142.92	142.92	0.01	0.00	143.05
Total	**0.08**	**0.43**	**0.85**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**142.92**	**142.92**	**0.01**	**0.00**	**143.05**

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	0.00	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
Vendor	0.37	3.67	2.74	0.01	0.04	0.09	0.13	0.01	0.09	0.10	0.00	1,259.26	1,259.26	0.02	0.00	1,259.59
Worker	0.39	0.28	3.17	0.01	0.06	0.05	0.11	0.02	0.05	0.07	0.00	842.61	842.61	0.03	0.00	843.28
Total	**0.76**	**3.95**	**5.91**	**0.02**	**0.10**	**0.14**	**0.24**	**0.03**	**0.14**	**0.17**	**0.00**	**2,101.87**	**2,101.87**	**0.05**	**0.00**	**2,102.87**

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.23	1.42	1.78	0.00		0.09	0.09		0.09	0.09	0.00	242.12	242.12	0.02	0.00	242.51
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.23**	**1.42**	**1.78**	**0.00**		**0.09**	**0.09**		**0.09**	**0.09**	**0.00**	**242.12**	**242.12**	**0.02**	**0.00**	**242.51**

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	0.00	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
Vendor	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
Worker	0.01	0.00	0.04	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	11.28	11.28	0.00	0.00	11.28
Total	**0.01**	**0.00**	**0.04**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**11.28**	**11.28**	**0.00**	**0.00**	**11.28**

3.6 Paving - 2025

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	0.23	1.42	1.78	0.00		0.09	0.09		0.09	0.09	0.00	242.12	242.12	0.02	0.00	242.51
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.23**	**1.42**	**1.78**	**0.00**		**0.09**	**0.09**		**0.09**	**0.09**	**0.00**	**242.12**	**242.12**	**0.02**	**0.00**	**242.51**

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	0.00	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
Vendor	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
Worker	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.28	11.28	0.00	0.00	11.28
Total	**0.01**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11.28**	**11.28**	**0.00**	**0.00**	**11.28**

3.6 Paving - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.05	0.29	0.36	0.00		0.02	0.02		0.02	0.02	0.00	48.95	48.95	0.00	0.00	49.03
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.05**	**0.29**	**0.36**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**48.95**	**48.95**	**0.00**	**0.00**	**49.03**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28	2.28	0.00	0.00	2.28
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.28**	**2.28**	**0.00**	**0.00**	**2.28**

3.6 Paving - 2026

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	0.05	0.29	0.36	0.00		0.02	0.02		0.02	0.02	0.00	48.95	48.95	0.00	0.00	49.03
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.05**	**0.29**	**0.36**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**48.95**	**48.95**	**0.00**	**0.00**	**49.03**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28	2.28	0.00	0.00	2.28
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.28**	**2.28**	**0.00**	**0.00**	**2.28**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	91.87					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.13	0.20	0.00		0.01	0.01		0.01	0.01	0.00	28.05	28.05	0.00	0.00	28.08
Total	**91.89**	**0.13**	**0.20**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**28.05**	**28.05**	**0.00**	**0.00**	**28.08**

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	0.00	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
Vendor	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
Worker	0.22	0.16	1.79	0.01	0.71	0.03	0.74	0.01	0.03	0.04	0.00	475.32	475.32	0.02	0.00	475.70
Total	**0.22**	**0.16**	**1.79**	**0.01**	**0.71**	**0.03**	**0.74**	**0.01**	**0.03**	**0.04**	**0.00**	**475.32**	**475.32**	**0.02**	**0.00**	**475.70**

3.7 Architectural Coating - 2026

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	91.87					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.13	0.20	0.00		0.01	0.01		0.01	0.01	0.00	28.05	28.05	0.00	0.00	28.08
Total	**91.89**	**0.13**	**0.20**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**28.05**	**28.05**	**0.00**	**0.00**	**28.08**

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	0.00	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
Vendor	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
Worker	0.22	0.16	1.79	0.01	0.03	0.03	0.06	0.01	0.03	0.04	0.00	475.32	475.32	0.02	0.00	475.70
Total	**0.22**	**0.16**	**1.79**	**0.01**	**0.03**	**0.03**	**0.06**	**0.01**	**0.03**	**0.04**	**0.00**	**475.32**	**475.32**	**0.02**	**0.00**	**475.70**

4.0 Mobile Detail

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	25.98	38.20	199.84	0.76	73.65	3.22	76.87	1.25	2.82	4.07	0.00	50,873.21	50,873.21	1.66	0.00	50,908.07
Unmitigated	25.98	38.20	199.84	0.76	73.65	3.22	76.87	1.25	2.82	4.07	0.00	50,873.21	50,873.21	1.66	0.00	50,908.07
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6,345.49	1,201.73	619.07	13,992,066	13,992,066
General Office Building	26,473.55	5,698.67	2356.41	47,939,397	47,939,397
Office Park	20,295.62	2,914.61	1350.67	37,859,874	37,859,874
Research & Development	22,043.79	5,164.39	3017.09	42,391,540	42,391,540
Strip Mall	5,522.27	5,238.18	2545.58	7,787,094	7,787,094
Total	80,680.72	20,217.58	9,888.82	149,969,972	149,969,972

4.3 Trip Type Information

	Miles			Trip %		
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
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00
Office Park	9.50	7.30	7.30	33.00	48.00	19.00
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00

5.0 Energy Detail

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						0.00	0.00		0.00	0.00	0.00	15,808.67	15,808.67	1.58	0.60	16,027.76
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	15,808.67	15,808.67	1.58	0.60	16,027.76
NaturalGas Mitigated	0.97	8.86	7.44	0.05		0.00	0.67		0.00	0.67	0.00	9,640.83	9,640.83	0.18	0.18	9,699.50
NaturalGas Unmitigated	0.97	8.86	7.44	0.05		0.00	0.67		0.00	0.67	0.00	9,640.83	9,640.83	0.18	0.18	9,699.50
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	tons/yr										MT/yr					
General Light Industry	2.49541e+007	0.13	1.22	1.03	0.01		0.00	0.09		0.00	0.09	0.00	1,331.64	1,331.64	0.03	0.02	1,339.75
General Office Building	4.14055e+007	0.22	2.03	1.70	0.01		0.00	0.15		0.00	0.15	0.00	2,209.55	2,209.55	0.04	0.04	2,223.00
Office Park	3.94894e+007	0.21	1.94	1.63	0.01		0.00	0.15		0.00	0.15	0.00	2,107.30	2,107.30	0.04	0.04	2,120.13
Research & Development	7.45031e+007	0.40	3.65	3.07	0.02		0.00	0.28		0.00	0.28	0.00	3,975.77	3,975.77	0.08	0.07	3,999.97
Strip Mall	310254	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00	0.00	16.56	16.56	0.00	0.00	16.66
Total		**0.96**	**8.86**	**7.44**	**0.05**		**0.00**	**0.67**		**0.00**	**0.67**	**0.00**	**9,640.82**	**9,640.82**	**0.19**	**0.17**	**9,699.51**

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	tons/yr										MT/yr					
General Light Industry	2.49541e+007	0.13	1.22	1.03	0.01		0.00	0.09		0.00	0.09	0.00	1,331.64	1,331.64	0.03	0.02	1,339.75
General Office Building	4.14055e+007	0.22	2.03	1.70	0.01		0.00	0.15		0.00	0.15	0.00	2,209.55	2,209.55	0.04	0.04	2,223.00
Office Park	3.94894e+007	0.21	1.94	1.63	0.01		0.00	0.15		0.00	0.15	0.00	2,107.30	2,107.30	0.04	0.04	2,120.13
Research & Development	7.45031e+007	0.40	3.65	3.07	0.02		0.00	0.28		0.00	0.28	0.00	3,975.77	3,975.77	0.08	0.07	3,999.97
Strip Mall	310254	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00	0.00	16.56	16.56	0.00	0.00	16.66
Total		**0.96**	**8.86**	**7.44**	**0.05**		**0.00**	**0.67**		**0.00**	**0.67**	**0.00**	**9,640.82**	**9,640.82**	**0.19**	**0.17**	**9,699.51**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	8.22091e+006					1,081.39	0.11	0.04	1,096.38
General Office Building	4.73927e+007					6,234.12	0.62	0.24	6,320.52
Office Park	3.85652e+007					5,072.94	0.51	0.19	5,143.24
Research & Development	2.45444e+007					3,228.62	0.32	0.12	3,273.36
Strip Mall	1.45657e+006					191.60	0.02	0.01	194.26
Total						**15,808.67**	**1.58**	**0.60**	**16,027.76**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	8.22091e+006					1,081.39	0.11	0.04	1,096.38
General Office Building	4.73927e+007					6,234.12	0.62	0.24	6,320.52
Office Park	3.85652e+007					5,072.94	0.51	0.19	5,143.24
Research & Development	2.45444e+007					3,228.62	0.32	0.12	3,273.36
Strip Mall	1.45657e+006					191.60	0.02	0.01	194.26
Total						**15,808.67**	**1.58**	**0.60**	**16,027.76**

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	40.18	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
Unmitigated	40.18	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	9.19					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	30.99					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**40.18**	**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**

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	9.19					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	30.99					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**40.18**	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					1,840.58	68.93	1.77	3,837.88
Unmitigated					1,840.58	68.93	1.77	3,837.88
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

<u>Unmitigated</u>

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	163.184 / 0					117.98	4.99	0.13	262.49
General Office Building	427.361 / 261.931					429.57	13.09	0.34	809.69
Office Park	315.868 / 193.597					317.50	9.67	0.25	598.45
Research & Development	1336.47 / 0					966.25	40.89	1.05	2,149.77
Strip Mall	9.22944 / 5.65675					9.28	0.28	0.01	17.49
Total						**1,840.58**	**68.92**	**1.78**	**3,837.89**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	163.184 / 0					117.98	4.99	0.13	262.49
General Office Building	427.361 / 261.931					429.57	13.09	0.34	809.69
Office Park	315.868 / 193.597					317.50	9.67	0.25	598.45
Research & Development	1336.47 / 0					966.25	40.89	1.05	2,149.77
Strip Mall	9.22944 / 5.65675					9.28	0.28	0.01	17.49
Total						**1,840.58**	**68.92**	**1.78**	**3,837.89**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					2,470.65	146.01	0.00	5,536.89
Unmitigated					2,470.65	146.01	0.00	5,536.89
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	7944.88					1,612.74	95.31	0.00	3,614.25
General Office Building	2236.18					453.92	26.83	0.00	1,017.27
Office Park	1652.8					335.50	19.83	0.00	751.88
Research & Development	206.56					41.93	2.48	0.00	93.97
Strip Mall	130.83					26.56	1.57	0.00	59.52
Total						**2,470.65**	**146.02**	**0.00**	**5,536.89**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	7944.88					1,612.74	95.31	0.00	3,614.25
General Office Building	2236.18					453.92	26.83	0.00	1,017.27
Office Park	1652.8					335.50	19.83	0.00	751.88
Research & Development	206.56					41.93	2.48	0.00	93.97
Strip Mall	130.83					26.56	1.57	0.00	59.52
Total						**2,470.65**	**146.02**	**0.00**	**5,536.89**

9.0 Vegetation

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons				MT			
Unmitigated					-1,749.86	0.00	0.00	-1,749.86
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

9.1 Vegetation Land Change

Vegetation Type

	Initial/Final	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	Acres	tons				MT			
Grassland	406 / 0					-1,749.86	0.00	0.00	-1,749.86
Total						**-1,749.86**	**0.00**	**0.00**	**-1,749.86**

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons				MT			
Unmitigated					-1,749.86	0.00	0.00	-1,749.86
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

9.1 Vegetation Land Change

Vegetation Type

	Initial/Final	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	Acres	tons				MT			
Grassland	406 / 0					-1,749.86	0.00	0.00	-1,749.86
Total						**-1,749.86**	**0.00**	**0.00**	**-1,749.86**

sjwpcp Alt 3 GHG only

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Light Industry	910.4	1000sqft
General Office Building	1202	1000sqft

1.2 Other Project Characteristics

Urbanization Urban

Wind Speed (m/s) 2.2

Utility Company Pacific Gas & Electric Company

Climate Zone 4

Precipitation Freq (Days) 58

1.3 User Entered Comments

Project Characteristics - ADjusted CO2 factor to match PG&E estimate for 2020

Land Use - Office/R&D = General Office

Water And Wastewater - Per scaqmd water rate for industrial use is in error Use 697 gal/employee/day = 697*3110*313=gal/yr

Solid Waste - Per SCAQMD waste rates for industrial uses is in error and should be 15% of quoted rate of 52965.88 ton/yr

Land Use Change -

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					
2011	1.95	13.37	11.86	0.02	1.24	0.64	1.89	0.32	0.64	0.96	0.00	1,725.60	1,725.60	0.15	0.00	1,728.74
2012	2.37	13.31	17.61	0.03	1.57	0.61	2.18	0.09	0.61	0.70	0.00	2,621.89	2,621.89	0.17	0.00	2,625.49
2013	2.18	12.17	16.32	0.03	1.57	0.55	2.12	0.09	0.55	0.64	0.00	2,603.11	2,603.11	0.16	0.00	2,606.40
2014	25.51	5.81	7.49	0.01	0.73	0.30	1.03	0.04	0.30	0.34	0.00	1,245.13	1,245.13	0.08	0.00	1,246.77
Total	**32.01**	**44.66**	**53.28**	**0.09**	**5.11**	**2.10**	**7.22**	**0.54**	**2.10**	**2.64**	**0.00**	**8,195.73**	**8,195.73**	**0.56**	**0.00**	**8,207.40**

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					
2011	1.95	13.37	11.86	0.02	0.63	0.64	1.28	0.32	0.64	0.96	0.00	1,725.60	1,725.60	0.15	0.00	1,728.74
2012	2.37	13.31	17.61	0.03	0.09	0.61	0.70	0.09	0.61	0.70	0.00	2,621.89	2,621.89	0.17	0.00	2,625.49
2013	2.18	12.17	16.32	0.03	0.09	0.55	0.64	0.09	0.55	0.64	0.00	2,603.11	2,603.11	0.16	0.00	2,606.40
2014	25.51	5.81	7.49	0.01	0.04	0.30	0.34	0.04	0.30	0.34	0.00	1,245.13	1,245.13	0.08	0.00	1,246.77
Total	**32.01**	**44.66**	**53.28**	**0.09**	**0.85**	**2.10**	**2.96**	**0.54**	**2.10**	**2.64**	**0.00**	**8,195.73**	**8,195.73**	**0.56**	**0.00**	**8,207.40**

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	10.70	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
Energy	0.25	2.24	1.88	0.01		0.00	0.17		0.00	0.17	0.00	6,634.00	6,634.00	0.47	0.20	6,707.00
Mobile	6.46	9.47	49.95	0.19	18.64	0.81	19.45	0.32	0.71	1.03	0.00	12,852.91	12,852.91	0.42	0.00	12,861.68
Waste						0.00	0.00		0.00	0.00	1,839.65	0.00	1,839.65	108.72	0.00	4,122.78
Water						0.00	0.00		0.00	0.00	0.00	705.27	705.27	27.30	0.70	1,496.12
Total	**17.41**	**11.71**	**51.83**	**0.20**	**18.64**	**0.81**	**19.62**	**0.32**	**0.71**	**1.20**	**1,839.65**	**20,192.18**	**22,031.83**	**136.91**	**0.90**	**25,187.58**

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	10.70	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
Energy	0.25	2.24	1.88	0.01		0.00	0.17		0.00	0.17	0.00	6,634.00	6,634.00	0.47	0.20	6,707.00
Mobile	6.46	9.47	49.95	0.19	18.64	0.81	19.45	0.32	0.71	1.03	0.00	12,852.91	12,852.91	0.42	0.00	12,861.68
Waste						0.00	0.00		0.00	0.00	1,839.65	0.00	1,839.65	108.72	0.00	4,122.78
Water						0.00	0.00		0.00	0.00	0.00	705.27	705.27	27.30	0.70	1,496.12
Total	**17.41**	**11.71**	**51.83**	**0.20**	**18.64**	**0.81**	**19.62**	**0.32**	**0.71**	**1.20**	**1,839.65**	**20,192.18**	**22,031.83**	**136.91**	**0.90**	**25,187.58**

2.3 Vegetation

Vegetation

	ROG	NOx	CO	SO2	CO2e
Category	tons				MT
Vegetation Land Change					-1,749.86
Total					**-1,749.86**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Demolition - 2011

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	0.25	2.00	1.15	0.00		0.10	0.10		0.10	0.10	0.00	170.30	170.30	0.02	0.00	170.72
Total	**0.25**	**2.00**	**1.15**	**0.00**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**170.30**	**170.30**	**0.02**	**0.00**	**170.72**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.01	4.01	0.00	0.00	4.01
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.01**	**4.01**	**0.00**	**0.00**	**4.01**

3.2 Demolition - 2011

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.25	2.00	1.15	0.00		0.10	0.10		0.10	0.10	0.00	170.30	170.30	0.02	0.00	170.72
Total	**0.25**	**2.00**	**1.15**	**0.00**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**170.30**	**170.30**	**0.02**	**0.00**	**170.72**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	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
Vendor	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
Worker	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.01	4.01	0.00	0.00	4.01
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.01**	**4.01**	**0.00**	**0.00**	**4.01**

3.3 Site Preparation - 2011

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					0.27	0.00	0.27	0.15	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.16	1.35	0.76	0.00		0.07	0.07		0.07	0.07	0.00	108.80	108.80	0.01	0.00	109.08
Total	**0.16**	**1.35**	**0.76**	**0.00**	**0.27**	**0.07**	**0.34**	**0.15**	**0.07**	**0.22**	**0.00**	**108.80**	**108.80**	**0.01**	**0.00**	**109.08**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.88	2.88	0.00	0.00	2.89
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.88**	**2.88**	**0.00**	**0.00**	**2.89**

3.3 Site Preparation - 2011

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					0.27	0.00	0.27	0.15	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.16	1.35	0.76	0.00		0.07	0.07		0.07	0.07	0.00	108.80	108.80	0.01	0.00	109.08
Total	**0.16**	**1.35**	**0.76**	**0.00**	**0.27**	**0.07**	**0.34**	**0.15**	**0.07**	**0.22**	**0.00**	**108.80**	**108.80**	**0.01**	**0.00**	**109.08**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.88	2.88	0.00	0.00	2.89
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.88**	**2.88**	**0.00**	**0.00**	**2.89**

3.4 Grading - 2011

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					0.33	0.00	0.33	0.13	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.49	4.15	2.16	0.00		0.20	0.20		0.20	0.20	0.00	369.24	369.24	0.04	0.00	370.08
Total	**0.49**	**4.15**	**2.16**	**0.00**	**0.33**	**0.20**	**0.53**	**0.13**	**0.20**	**0.33**	**0.00**	**369.24**	**369.24**	**0.04**	**0.00**	**370.08**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.07	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	8.01	8.01	0.00	0.00	8.02
Total	**0.01**	**0.01**	**0.07**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**8.01**	**8.01**	**0.00**	**0.00**	**8.02**

3.4 Grading - 2011

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					0.33	0.00	0.33	0.13	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.49	4.15	2.16	0.00		0.20	0.20		0.20	0.20	0.00	369.24	369.24	0.04	0.00	370.08
Total	**0.49**	**4.15**	**2.16**	**0.00**	**0.33**	**0.20**	**0.53**	**0.13**	**0.20**	**0.33**	**0.00**	**369.24**	**369.24**	**0.04**	**0.00**	**370.08**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.01	8.01	0.00	0.00	8.02
Total	**0.01**	**0.01**	**0.07**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**8.01**	**8.01**	**0.00**	**0.00**	**8.02**

3.5 Building Construction - 2011

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	0.32	2.11	1.26	0.00		0.15	0.15		0.15	0.15	0.00	192.39	192.39	0.03	0.00	192.94
Total	**0.32**	**2.11**	**1.26**	**0.00**		**0.15**	**0.15**		**0.15**	**0.15**	**0.00**	**192.39**	**192.39**	**0.03**	**0.00**	**192.94**

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	0.00	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
Vendor	0.32	3.35	2.41	0.00	0.14	0.10	0.24	0.01	0.10	0.12	0.00	439.84	439.84	0.01	0.00	440.15
Worker	0.39	0.39	3.98	0.00	0.49	0.02	0.51	0.02	0.02	0.04	0.00	430.13	430.13	0.03	0.00	430.85
Total	**0.71**	**3.74**	**6.39**	**0.00**	**0.63**	**0.12**	**0.75**	**0.03**	**0.12**	**0.16**	**0.00**	**869.97**	**869.97**	**0.04**	**0.00**	**871.00**

3.5 Building Construction - 2011

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	0.32	2.11	1.26	0.00		0.15	0.15		0.15	0.15	0.00	192.39	192.39	0.03	0.00	192.94
Total	**0.32**	**2.11**	**1.26**	**0.00**		**0.15**	**0.15**		**0.15**	**0.15**	**0.00**	**192.39**	**192.39**	**0.03**	**0.00**	**192.94**

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	0.00	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
Vendor	0.32	3.35	2.41	0.00	0.01	0.10	0.12	0.01	0.10	0.12	0.00	439.84	439.84	0.01	0.00	440.15
Worker	0.39	0.39	3.98	0.00	0.02	0.02	0.04	0.02	0.02	0.04	0.00	430.13	430.13	0.03	0.00	430.85
Total	**0.71**	**3.74**	**6.39**	**0.00**	**0.03**	**0.12**	**0.16**	**0.03**	**0.12**	**0.16**	**0.00**	**869.97**	**869.97**	**0.04**	**0.00**	**871.00**

3.5 Building Construction - 2012

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	0.73	4.87	3.10	0.01		0.33	0.33		0.33	0.33	0.00	478.23	478.23	0.06	0.00	479.48
Total	**0.73**	**4.87**	**3.10**	**0.01**		**0.33**	**0.33**		**0.33**	**0.33**	**0.00**	**478.23**	**478.23**	**0.06**	**0.00**	**479.48**

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	0.00	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
Vendor	0.74	7.55	5.50	0.01	0.34	0.23	0.57	0.03	0.23	0.26	0.00	1,096.43	1,096.43	0.03	0.00	1,097.13
Worker	0.90	0.89	9.01	0.01	1.22	0.05	1.27	0.06	0.05	0.10	0.00	1,047.23	1,047.23	0.08	0.00	1,048.88
Total	**1.64**	**8.44**	**14.51**	**0.02**	**1.56**	**0.28**	**1.84**	**0.09**	**0.28**	**0.36**	**0.00**	**2,143.66**	**2,143.66**	**0.11**	**0.00**	**2,146.01**

3.5 Building Construction - 2012

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	0.73	4.87	3.10	0.01		0.33	0.33		0.33	0.33	0.00	478.23	478.23	0.06	0.00	479.48
Total	**0.73**	**4.87**	**3.10**	**0.01**		**0.33**	**0.33**		**0.33**	**0.33**	**0.00**	**478.23**	**478.23**	**0.06**	**0.00**	**479.48**

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	0.00	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
Vendor	0.74	7.55	5.50	0.01	0.03	0.23	0.26	0.03	0.23	0.26	0.00	1,096.43	1,096.43	0.03	0.00	1,097.13
Worker	0.90	0.89	9.01	0.01	0.06	0.05	0.10	0.06	0.05	0.10	0.00	1,047.23	1,047.23	0.08	0.00	1,048.88
Total	**1.64**	**8.44**	**14.51**	**0.02**	**0.09**	**0.28**	**0.36**	**0.09**	**0.28**	**0.36**	**0.00**	**2,143.66**	**2,143.66**	**0.11**	**0.00**	**2,146.01**

3.5 Building Construction - 2013

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	0.67	4.52	3.06	0.01		0.30	0.30		0.30	0.30	0.00	478.23	478.23	0.05	0.00	479.38
Total	**0.67**	**4.52**	**3.06**	**0.01**		**0.30**	**0.30**		**0.30**	**0.30**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.38**

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	0.00	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
Vendor	0.68	6.84	5.05	0.01	0.34	0.21	0.55	0.03	0.21	0.24	0.00	1,099.27	1,099.27	0.03	0.00	1,099.91
Worker	0.83	0.81	8.21	0.01	1.22	0.05	1.27	0.06	0.05	0.10	0.00	1,025.60	1,025.60	0.07	0.00	1,027.11
Total	**1.51**	**7.65**	**13.26**	**0.02**	**1.56**	**0.26**	**1.82**	**0.09**	**0.26**	**0.34**	**0.00**	**2,124.87**	**2,124.87**	**0.10**	**0.00**	**2,127.02**

3.5 Building Construction - 2013

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	0.67	4.52	3.06	0.01		0.30	0.30		0.30	0.30	0.00	478.23	478.23	0.05	0.00	479.38
Total	**0.67**	**4.52**	**3.06**	**0.01**		**0.30**	**0.30**		**0.30**	**0.30**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.38**

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	0.00	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
Vendor	0.68	6.84	5.05	0.01	0.03	0.21	0.24	0.03	0.21	0.24	0.00	1,099.27	1,099.27	0.03	0.00	1,099.91
Worker	0.83	0.81	8.21	0.01	0.06	0.05	0.10	0.06	0.05	0.10	0.00	1,025.60	1,025.60	0.07	0.00	1,027.11
Total	**1.51**	**7.65**	**13.26**	**0.02**	**0.09**	**0.26**	**0.34**	**0.09**	**0.26**	**0.34**	**0.00**	**2,124.87**	**2,124.87**	**0.10**	**0.00**	**2,127.02**

3.5 Building Construction - 2014

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	0.27	1.81	1.31	0.00		0.11	0.11		0.11	0.11	0.00	207.05	207.05	0.02	0.00	207.50
Total	**0.27**	**1.81**	**1.31**	**0.00**		**0.11**	**0.11**		**0.11**	**0.11**	**0.00**	**207.05**	**207.05**	**0.02**	**0.00**	**207.50**

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	0.00	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
Vendor	0.27	2.69	1.98	0.01	0.15	0.08	0.23	0.01	0.08	0.09	0.00	477.20	477.20	0.01	0.00	477.45
Worker	0.33	0.32	3.23	0.00	0.53	0.02	0.55	0.02	0.02	0.04	0.00	434.75	434.75	0.03	0.00	435.35
Total	**0.60**	**3.01**	**5.21**	**0.01**	**0.68**	**0.10**	**0.78**	**0.03**	**0.10**	**0.13**	**0.00**	**911.95**	**911.95**	**0.04**	**0.00**	**912.80**

3.5 Building Construction - 2014

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	0.27	1.81	1.31	0.00		0.11	0.11		0.11	0.11	0.00	207.05	207.05	0.02	0.00	207.50
Total	**0.27**	**1.81**	**1.31**	**0.00**		**0.11**	**0.11**		**0.11**	**0.11**	**0.00**	**207.05**	**207.05**	**0.02**	**0.00**	**207.50**

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	0.00	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
Vendor	0.27	2.69	1.98	0.01	0.01	0.08	0.09	0.01	0.08	0.09	0.00	477.20	477.20	0.01	0.00	477.45
Worker	0.33	0.32	3.23	0.00	0.02	0.02	0.04	0.02	0.02	0.04	0.00	434.75	434.75	0.03	0.00	435.35
Total	**0.60**	**3.01**	**5.21**	**0.01**	**0.03**	**0.10**	**0.13**	**0.03**	**0.10**	**0.13**	**0.00**	**911.95**	**911.95**	**0.04**	**0.00**	**912.80**

3.6 Paving - 2014

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	0.14	0.88	0.57	0.00		0.08	0.08		0.08	0.08	0.00	72.77	72.77	0.01	0.00	73.01
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.14**	**0.88**	**0.57**	**0.00**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**72.77**	**72.77**	**0.01**	**0.00**	**73.01**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	4.14	4.14	0.00	0.00	4.14
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**4.14**	**4.14**	**0.00**	**0.00**	**4.14**

3.6 Paving - 2014

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	0.14	0.88	0.57	0.00		0.08	0.08		0.08	0.08	0.00	72.77	72.77	0.01	0.00	73.01
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.14**	**0.88**	**0.57**	**0.00**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**72.77**	**72.77**	**0.01**	**0.00**	**73.01**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.14	4.14	0.00	0.00	4.14
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.14**	**4.14**	**0.00**	**0.00**	**4.14**

3.7 Architectural Coating - 2014

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	24.46					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.08	0.05	0.00		0.01	0.01		0.01	0.01	0.00	7.01	7.01	0.00	0.00	7.03
Total	**24.47**	**0.08**	**0.05**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**7.01**	**7.01**	**0.00**	**0.00**	**7.03**

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	0.00	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
Vendor	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
Worker	0.03	0.03	0.31	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.00	42.21	42.21	0.00	0.00	42.27
Total	**0.03**	**0.03**	**0.31**	**0.00**	**0.05**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**42.21**	**42.21**	**0.00**	**0.00**	**42.27**

3.7 Architectural Coating - 2014

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	24.46					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.08	0.05	0.00		0.01	0.01		0.01	0.01	0.00	7.01	7.01	0.00	0.00	7.03
Total	**24.47**	**0.08**	**0.05**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**7.01**	**7.01**	**0.00**	**0.00**	**7.03**

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	0.00	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
Vendor	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
Worker	0.03	0.03	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.21	42.21	0.00	0.00	42.27
Total	**0.03**	**0.03**	**0.31**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**42.21**	**42.21**	**0.00**	**0.00**	**42.27**

4.0 Mobile Detail

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	6.46	9.47	49.95	0.19	18.64	0.81	19.45	0.32	0.71	1.03	0.00	12,852.91	12,852.91	0.42	0.00	12,861.68
Unmitigated	6.46	9.47	49.95	0.19	18.64	0.81	19.45	0.32	0.71	1.03	0.00	12,852.91	12,852.91	0.42	0.00	12,861.68
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6,345.49	1,201.73	619.07	13,992,066	13,992,066
General Office Building	13,234.02	2,848.74	1177.96	23,964,714	23,964,714
Total	19,579.51	4,050.47	1,797.03	37,956,780	37,956,780

4.3 Trip Type Information

	Miles			Trip %		
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
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00

5.0 Energy Detail

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						0.00	0.00		0.00	0.00	0.00	4,197.81	4,197.81	0.42	0.16	4,255.98
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	4,197.81	4,197.81	0.42	0.16	4,255.98
NaturalGas Mitigated	0.25	2.24	1.88	0.01		0.00	0.17		0.00	0.17	0.00	2,436.19	2,436.19	0.05	0.04	2,451.02
NaturalGas Unmitigated	0.25	2.24	1.88	0.01		0.00	0.17		0.00	0.17	0.00	2,436.19	2,436.19	0.05	0.04	2,451.02
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	tons/yr										MT/yr					
General Light Industry	2.49541e+007	0.13	1.22	1.03	0.01		0.00	0.09		0.00	0.09	0.00	1,331.64	1,331.64	0.03	0.02	1,339.75
General Office Building	2.06984e+007	0.11	1.01	0.85	0.01		0.00	0.08		0.00	0.08	0.00	1,104.55	1,104.55	0.02	0.02	1,111.27
Total		**0.24**	**2.23**	**1.88**	**0.02**		**0.00**	**0.17**		**0.00**	**0.17**	**0.00**	**2,436.19**	**2,436.19**	**0.05**	**0.04**	**2,451.02**

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	tons/yr										MT/yr					
General Light Industry	2.49541e+007	0.13	1.22	1.03	0.01		0.00	0.09		0.00	0.09	0.00	1,331.64	1,331.64	0.03	0.02	1,339.75
General Office Building	2.06984e+007	0.11	1.01	0.85	0.01		0.00	0.08		0.00	0.08	0.00	1,104.55	1,104.55	0.02	0.02	1,111.27
Total		**0.24**	**2.23**	**1.88**	**0.02**		**0.00**	**0.17**		**0.00**	**0.17**	**0.00**	**2,436.19**	**2,436.19**	**0.05**	**0.04**	**2,451.02**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	8.22091e+006					1,081.39	0.11	0.04	1,096.38
General Office Building	2.36914e+007					3,116.41	0.31	0.12	3,159.60
Total						**4,197.80**	**0.42**	**0.16**	**4,255.98**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	8.22091e+006					1,081.39	0.11	0.04	1,096.38
General Office Building	2.36914e+007					3,116.41	0.31	0.12	3,159.60
Total						**4,197.80**	**0.42**	**0.16**	**4,255.98**

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	10.70	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
Unmitigated	10.70	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	2.45					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	8.25					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**10.70**	**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**

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	2.45					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	8.25					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**10.70**	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					705.27	27.30	0.70	1,496.12
Unmitigated					705.27	27.30	0.70	1,496.12
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	678.481 / 0					490.53	20.76	0.53	1,091.36
General Office Building	213.636 / 130.938					214.74	6.54	0.17	404.76
Total						**705.27**	**27.30**	**0.70**	**1,496.12**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	678.481 / 0					490.53	20.76	0.53	1,091.36
General Office Building	213.636 / 130.938					214.74	6.54	0.17	404.76
Total						**705.27**	**27.30**	**0.70**	**1,496.12**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					1,839.65	108.72	0.00	4,122.78
Unmitigated					1,839.65	108.72	0.00	4,122.78
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	7944.88					1,612.74	95.31	0.00	3,614.25
General Office Building	1117.86					226.92	13.41	0.00	508.53
Total						**1,839.66**	**108.72**	**0.00**	**4,122.78**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	7944.88					1,612.74	95.31	0.00	3,614.25
General Office Building	1117.86					226.92	13.41	0.00	508.53
Total						**1,839.66**	**108.72**	**0.00**	**4,122.78**

9.0 Vegetation

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons				MT			
Unmitigated					-1,749.86	0.00	0.00	-1,749.86
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

9.1 Vegetation Land Change

Vegetation Type

	Initial/Final	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	Acres	tons				MT			
Grassland	406 / 0					-1,749.86	0.00	0.00	-1,749.86
Total						**-1,749.86**	**0.00**	**0.00**	**-1,749.86**

sjwpcp Alt 4 GHG only

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Office Building	4234	1000sqft
Office Park	1097.7	1000sqft
Research & Development	575	1000sqft
General Light Industry	263.5	1000sqft
Strip Mall	56.6	1000sqft

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Utility Company** Pacific Gas & Electric Company

Climate Zone 4 **Precipitation Freq (Days)** 58

1.3 User Entered Comments

Project Characteristics - ADjusted CO2 factor to match PG&E estimate for 2020

Land Use - R&D = Combined industrial/commercial

Water And Wastewater - Per scaqmd water rate for industrial use is in error Use 697 gal/employee/day = 697*217*313=gal/yr

Solid Waste - Per SCAQMD waste rates for industrial uses is in error and should be 15% of quoted rate of 15,330.08 ton/yr

Land Use Change -

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					
2011	1.33	10.70	6.31	0.01	1.11	0.55	1.66	0.60	0.55	1.15	0.00	920.58	920.58	0.11	0.00	922.86
2012	1.59	13.00	7.20	0.01	2.46	0.63	3.09	1.15	0.63	1.79	0.00	1,233.84	1,233.84	0.13	0.00	1,236.55
2013	3.48	20.95	26.01	0.05	3.82	0.85	4.67	0.70	0.85	1.55	0.00	4,287.67	4,287.67	0.25	0.00	4,292.87
2014	4.44	24.47	36.17	0.07	4.23	0.94	5.17	0.24	0.94	1.18	0.00	6,374.00	6,374.00	0.31	0.00	6,380.41
2015	4.09	22.33	33.14	0.07	4.23	0.85	5.09	0.24	0.85	1.10	0.00	6,321.50	6,321.50	0.28	0.00	6,327.38
2016	3.80	20.51	30.82	0.07	4.23	0.78	5.02	0.24	0.78	1.03	0.00	6,286.80	6,286.80	0.26	0.00	6,292.26
2017	3.51	18.85	28.42	0.07	4.22	0.72	4.93	0.24	0.72	0.96	0.00	6,211.21	6,211.21	0.24	0.00	6,216.21
2018	3.27	17.52	26.54	0.07	4.23	0.66	4.90	0.08	0.62	0.71	0.00	6,187.26	6,187.26	0.22	0.00	6,191.91
2019	3.06	16.32	24.79	0.07	4.23	0.61	4.85	0.08	0.57	0.66	0.00	6,144.07	6,144.07	0.21	0.00	6,148.39
2020	2.89	15.32	23.43	0.07	4.25	0.57	4.82	0.08	0.53	0.62	0.00	6,127.61	6,127.61	0.19	0.00	6,131.65
2021	2.71	14.33	22.03	0.07	4.23	0.53	4.76	0.08	0.49	0.58	0.00	6,067.57	6,067.57	0.18	0.00	6,071.34
2022	2.56	13.49	20.79	0.07	4.22	0.49	4.71	0.08	0.46	0.55	0.00	6,010.75	6,010.75	0.17	0.00	6,014.29
2023	2.43	12.82	19.76	0.07	4.22	0.47	4.68	0.08	0.43	0.52	0.00	5,980.13	5,980.13	0.16	0.00	5,983.47
2024	2.34	12.34	19.01	0.07	4.25	0.45	4.70	0.08	0.42	0.50	0.00	5,997.78	5,997.78	0.15	0.00	6,000.99
2025	0.90	4.95	7.25	0.02	1.28	0.21	1.50	0.03	0.21	0.23	0.00	2,031.41	2,031.41	0.06	0.00	2,032.72
2026	72.33	0.54	1.94	0.01	0.55	0.04	0.59	0.01	0.04	0.05	0.00	444.36	444.36	0.02	0.00	444.76
Total	**114.73**	**238.44**	**333.61**	**0.87**	**55.76**	**9.35**	**65.14**	**4.01**	**9.09**	**13.18**	**0.00**	**76,626.54**	**76,626.54**	**2.94**	**0.00**	**76,688.06**

2.1 Overall Construction

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					
2011	1.33	10.70	6.31	0.01	1.09	0.55	1.63	0.60	0.55	1.15	0.00	920.58	920.58	0.11	0.00	922.86
2012	1.59	13.00	7.20	0.01	2.43	0.63	3.06	1.15	0.63	1.79	0.00	1,233.84	1,233.84	0.13	0.00	1,236.55
2013	3.48	20.95	26.01	0.05	1.49	0.85	2.34	0.70	0.85	1.55	0.00	4,287.67	4,287.67	0.25	0.00	4,292.87
2014	4.44	24.47	36.17	0.07	0.24	0.94	1.18	0.24	0.94	1.18	0.00	6,374.00	6,374.00	0.31	0.00	6,380.41
2015	4.09	22.33	33.14	0.07	0.24	0.85	1.10	0.24	0.85	1.10	0.00	6,321.50	6,321.50	0.28	0.00	6,327.38
2016	3.80	20.51	30.82	0.07	0.24	0.78	1.03	0.24	0.78	1.03	0.00	6,286.80	6,286.80	0.26	0.00	6,292.26
2017	3.51	18.85	28.42	0.07	0.24	0.72	0.96	0.24	0.72	0.96	0.00	6,211.21	6,211.21	0.24	0.00	6,216.21
2018	3.27	17.52	26.54	0.07	0.24	0.66	0.90	0.08	0.62	0.71	0.00	6,187.26	6,187.26	0.22	0.00	6,191.91
2019	3.06	16.32	24.79	0.07	0.24	0.61	0.85	0.08	0.57	0.66	0.00	6,144.07	6,144.07	0.21	0.00	6,148.39
2020	2.89	15.32	23.43	0.07	0.24	0.57	0.81	0.08	0.53	0.62	0.00	6,127.61	6,127.61	0.19	0.00	6,131.65
2021	2.71	14.33	22.03	0.07	0.24	0.53	0.77	0.08	0.49	0.58	0.00	6,067.57	6,067.57	0.18	0.00	6,071.34
2022	2.56	13.49	20.79	0.07	0.24	0.49	0.73	0.08	0.46	0.55	0.00	6,010.75	6,010.75	0.17	0.00	6,014.29
2023	2.43	12.82	19.76	0.07	0.24	0.47	0.71	0.08	0.43	0.52	0.00	5,980.13	5,980.13	0.16	0.00	5,983.47
2024	2.34	12.34	19.01	0.07	0.24	0.45	0.69	0.08	0.42	0.50	0.00	5,997.78	5,997.78	0.15	0.00	6,000.99
2025	0.90	4.95	7.25	0.02	0.07	0.21	0.29	0.03	0.21	0.23	0.00	2,031.41	2,031.41	0.06	0.00	2,032.72
2026	72.33	0.54	1.94	0.01	0.03	0.04	0.07	0.01	0.04	0.05	0.00	444.36	444.36	0.02	0.00	444.76
Total	**114.73**	**238.44**	**333.61**	**0.87**	**7.75**	**9.35**	**17.12**	**4.01**	**9.09**	**13.18**	**0.00**	**76,626.54**	**76,626.54**	**2.94**	**0.00**	**76,688.06**

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	31.53	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
Energy	0.65	5.90	4.96	0.04		0.00	0.45		0.00	0.45	0.00	21,620.12	21,620.12	1.64	0.69	21,869.79
Mobile	21.61	31.80	166.12	0.63	61.07	2.67	63.74	1.04	2.34	3.37	0.00	42,198.84	42,198.84	1.38	0.00	42,227.78
Waste						0.00	0.00		0.00	0.00	1,494.24	0.00	1,494.24	88.31	0.00	3,348.69
Water						0.00	0.00		0.00	0.00	0.00	1,195.37	1,195.37	39.25	1.02	2,334.26
Total	**53.79**	**37.70**	**171.08**	**0.67**	**61.07**	**2.67**	**64.19**	**1.04**	**2.34**	**3.82**	**1,494.24**	**65,014.33**	**66,508.57**	**130.58**	**1.71**	**69,780.52**

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	31.53	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
Energy	0.65	5.90	4.96	0.04		0.00	0.45		0.00	0.45	0.00	21,620.12	21,620.12	1.64	0.69	21,869.79
Mobile	21.61	31.80	166.12	0.63	61.07	2.67	63.74	1.04	2.34	3.37	0.00	42,198.84	42,198.84	1.38	0.00	42,227.78
Waste						0.00	0.00		0.00	0.00	1,494.24	0.00	1,494.24	88.31	0.00	3,348.69
Water						0.00	0.00		0.00	0.00	0.00	1,195.37	1,195.37	39.25	1.02	2,334.26
Total	**53.79**	**37.70**	**171.08**	**0.67**	**61.07**	**2.67**	**64.19**	**1.04**	**2.34**	**3.82**	**1,494.24**	**65,014.33**	**66,508.57**	**130.58**	**1.71**	**69,780.52**

2.3 Vegetation

Vegetation

	ROG	NOx	CO	SO2	CO2e
Category	tons				MT
Vegetation Land Change					-1,749.86
Total					**-1,749.86**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Demolition - 2011

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	0.98	7.99	4.59	0.01		0.41	0.41		0.41	0.41	0.00	681.18	681.18	0.08	0.00	682.86
Total	**0.98**	**7.99**	**4.59**	**0.01**		**0.41**	**0.41**		**0.41**	**0.41**	**0.00**	**681.18**	**681.18**	**0.08**	**0.00**	**682.86**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.15	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	16.02	16.02	0.00	0.00	16.05
Total	**0.01**	**0.01**	**0.15**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**16.02**	**16.02**	**0.00**	**0.00**	**16.05**

3.2 Demolition - 2011

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	0.98	7.99	4.59	0.01		0.41	0.41		0.41	0.41	0.00	681.18	681.18	0.08	0.00	682.86
Total	**0.98**	**7.99**	**4.59**	**0.01**		**0.41**	**0.41**		**0.41**	**0.41**	**0.00**	**681.18**	**681.18**	**0.08**	**0.00**	**682.86**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.02	16.02	0.00	0.00	16.05
Total	**0.01**	**0.01**	**0.15**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**16.02**	**16.02**	**0.00**	**0.00**	**16.05**

3.3 Site Preparation - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.08	0.00	1.08	0.60	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.33	2.69	1.51	0.00		0.14	0.14		0.14	0.14	0.00	217.60	217.60	0.03	0.00	218.17
Total	**0.33**	**2.69**	**1.51**	**0.00**	**1.08**	**0.14**	**1.22**	**0.60**	**0.14**	**0.74**	**0.00**	**217.60**	**217.60**	**0.03**	**0.00**	**218.17**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.77	5.77	0.00	0.00	5.78
Total	**0.01**	**0.01**	**0.05**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.77**	**5.77**	**0.00**	**0.00**	**5.78**

3.3 Site Preparation - 2011

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					1.08	0.00	1.08	0.60	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.33	2.69	1.51	0.00		0.14	0.14		0.14	0.14	0.00	217.60	217.60	0.03	0.00	218.17
Total	**0.33**	**2.69**	**1.51**	**0.00**	**1.08**	**0.14**	**1.22**	**0.60**	**0.14**	**0.74**	**0.00**	**217.60**	**217.60**	**0.03**	**0.00**	**218.17**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	5.77	0.00	0.00	5.78
Total	**0.01**	**0.01**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.77**	**5.77**	**0.00**	**0.00**	**5.78**

3.3 Site Preparation - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.08	0.00	1.08	0.60	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.31	2.54	1.43	0.00		0.13	0.13		0.13	0.13	0.00	217.60	217.60	0.03	0.00	218.14
Total	**0.31**	**2.54**	**1.43**	**0.00**	**1.08**	**0.13**	**1.21**	**0.60**	**0.13**	**0.73**	**0.00**	**217.60**	**217.60**	**0.03**	**0.00**	**218.14**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.65	5.65	0.00	0.00	5.66
Total	**0.00**	**0.00**	**0.05**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.65**	**5.65**	**0.00**	**0.00**	**5.66**

3.3 Site Preparation - 2012

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					1.08	0.00	1.08	0.60	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.31	2.54	1.43	0.00		0.13	0.13		0.13	0.13	0.00	217.60	217.60	0.03	0.00	218.14
Total	**0.31**	**2.54**	**1.43**	**0.00**	**1.08**	**0.13**	**1.21**	**0.60**	**0.13**	**0.73**	**0.00**	**217.60**	**217.60**	**0.03**	**0.00**	**218.14**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.65	5.65	0.00	0.00	5.66
Total	**0.00**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.65**	**5.65**	**0.00**	**0.00**	**5.66**

3.4 Grading - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.34	0.00	1.34	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.26	10.44	5.54	0.01		0.50	0.50		0.50	0.50	0.00	989.55	989.55	0.10	0.00	991.70
Total	**1.26**	**10.44**	**5.54**	**0.01**	**1.34**	**0.50**	**1.84**	**0.56**	**0.50**	**1.06**	**0.00**	**989.55**	**989.55**	**0.10**	**0.00**	**991.70**

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	0.00	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
Vendor	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
Worker	0.02	0.02	0.18	0.00	0.02	0.00	0.03	0.00	0.00	0.00	0.00	21.03	21.03	0.00	0.00	21.06
Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.02**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**21.03**	**21.03**	**0.00**	**0.00**	**21.06**

3.4 Grading - 2012

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					1.34	0.00	1.34	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.26	10.44	5.54	0.01		0.50	0.50		0.50	0.50	0.00	989.55	989.55	0.10	0.00	991.70
Total	**1.26**	**10.44**	**5.54**	**0.01**	**1.34**	**0.50**	**1.84**	**0.56**	**0.50**	**1.06**	**0.00**	**989.55**	**989.55**	**0.10**	**0.00**	**991.70**

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	0.00	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
Vendor	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
Worker	0.02	0.02	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.03	21.03	0.00	0.00	21.06
Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**21.03**	**21.03**	**0.00**	**0.00**	**21.06**

3.4 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.34	0.00	1.34	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.65	5.31	2.88	0.01		0.25	0.25		0.25	0.25	0.00	536.62	536.62	0.05	0.00	537.72
Total	**0.65**	**5.31**	**2.88**	**0.01**	**1.34**	**0.25**	**1.59**	**0.56**	**0.25**	**0.81**	**0.00**	**536.62**	**536.62**	**0.05**	**0.00**	**537.72**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.09	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	11.17	11.17	0.00	0.00	11.19
Total	**0.01**	**0.01**	**0.09**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**11.17**	**11.17**	**0.00**	**0.00**	**11.19**

3.4 Grading - 2013

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					1.34	0.00	1.34	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.65	5.31	2.88	0.01		0.25	0.25		0.25	0.25	0.00	536.62	536.62	0.05	0.00	537.72
Total	**0.65**	**5.31**	**2.88**	**0.01**	**1.34**	**0.25**	**1.59**	**0.56**	**0.25**	**0.81**	**0.00**	**536.62**	**536.62**	**0.05**	**0.00**	**537.72**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.17	11.17	0.00	0.00	11.19
Total	**0.01**	**0.01**	**0.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11.17**	**11.17**	**0.00**	**0.00**	**11.19**

3.5 Building Construction - 2013

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	0.39	2.63	1.78	0.00		0.17	0.17		0.17	0.17	0.00	278.51	278.51	0.03	0.00	279.18
Total	**0.39**	**2.63**	**1.78**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**278.51**	**278.51**	**0.03**	**0.00**	**279.18**

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	0.00	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
Vendor	1.16	11.76	8.68	0.02	0.59	0.36	0.94	0.05	0.36	0.41	0.00	1,889.12	1,889.12	0.05	0.00	1,890.21
Worker	1.27	1.24	12.58	0.02	1.88	0.07	1.95	0.09	0.07	0.16	0.00	1,572.26	1,572.26	0.11	0.00	1,574.57
Total	**2.43**	**13.00**	**21.26**	**0.04**	**2.47**	**0.43**	**2.89**	**0.14**	**0.43**	**0.57**	**0.00**	**3,461.38**	**3,461.38**	**0.16**	**0.00**	**3,464.78**

3.5 Building Construction - 2013

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	0.39	2.63	1.78	0.00		0.17	0.17		0.17	0.17	0.00	278.51	278.51	0.03	0.00	279.18
Total	**0.39**	**2.63**	**1.78**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**278.51**	**278.51**	**0.03**	**0.00**	**279.18**

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	0.00	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
Vendor	1.16	11.76	8.68	0.02	0.05	0.36	0.41	0.05	0.36	0.41	0.00	1,889.12	1,889.12	0.05	0.00	1,890.21
Worker	1.27	1.24	12.58	0.02	0.09	0.07	0.16	0.09	0.07	0.16	0.00	1,572.26	1,572.26	0.11	0.00	1,574.57
Total	**2.43**	**13.00**	**21.26**	**0.04**	**0.14**	**0.43**	**0.57**	**0.14**	**0.43**	**0.57**	**0.00**	**3,461.38**	**3,461.38**	**0.16**	**0.00**	**3,464.78**

3.5 Building Construction - 2014

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	0.62	4.18	3.03	0.01		0.26	0.26		0.26	0.26	0.00	478.23	478.23	0.05	0.00	479.28
Total	**0.62**	**4.18**	**3.03**	**0.01**		**0.26**	**0.26**		**0.26**	**0.26**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.28**

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	0.00	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
Vendor	1.81	18.36	13.51	0.03	1.01	0.55	1.56	0.09	0.55	0.64	0.00	3,252.48	3,252.48	0.08	0.00	3,254.18
Worker	2.01	1.92	19.64	0.03	3.22	0.12	3.35	0.15	0.12	0.27	0.00	2,643.29	2,643.29	0.17	0.00	2,646.95
Total	**3.82**	**20.28**	**33.15**	**0.06**	**4.23**	**0.67**	**4.91**	**0.24**	**0.67**	**0.91**	**0.00**	**5,895.77**	**5,895.77**	**0.25**	**0.00**	**5,901.13**

3.5 Building Construction - 2014

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	0.62	4.18	3.03	0.01		0.26	0.26		0.26	0.26	0.00	478.23	478.23	0.05	0.00	479.28
Total	**0.62**	**4.18**	**3.03**	**0.01**		**0.26**	**0.26**		**0.26**	**0.26**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.28**

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	0.00	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
Vendor	1.81	18.36	13.51	0.03	0.09	0.55	0.64	0.09	0.55	0.64	0.00	3,252.48	3,252.48	0.08	0.00	3,254.18
Worker	2.01	1.92	19.64	0.03	0.15	0.12	0.27	0.15	0.12	0.27	0.00	2,643.29	2,643.29	0.17	0.00	2,646.95
Total	**3.82**	**20.28**	**33.15**	**0.06**	**0.24**	**0.67**	**0.91**	**0.24**	**0.67**	**0.91**	**0.00**	**5,895.77**	**5,895.77**	**0.25**	**0.00**	**5,901.13**

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.57	3.80	3.00	0.01		0.23	0.23		0.23	0.23	0.00	478.23	478.23	0.05	0.00	479.20
Total	**0.57**	**3.80**	**3.00**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.20**

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	0.00	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
Vendor	1.66	16.79	12.30	0.03	1.01	0.50	1.51	0.09	0.50	0.59	0.00	3,260.45	3,260.45	0.07	0.00	3,262.00
Worker	1.86	1.74	17.84	0.03	3.22	0.12	3.35	0.15	0.12	0.27	0.00	2,582.83	2,582.83	0.16	0.00	2,586.19
Total	**3.52**	**18.53**	**30.14**	**0.06**	**4.23**	**0.62**	**4.86**	**0.24**	**0.62**	**0.86**	**0.00**	**5,843.28**	**5,843.28**	**0.23**	**0.00**	**5,848.19**

3.5 Building Construction - 2015

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	0.57	3.80	3.00	0.01		0.23	0.23		0.23	0.23	0.00	478.23	478.23	0.05	0.00	479.20
Total	**0.57**	**3.80**	**3.00**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.20**

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	0.00	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
Vendor	1.66	16.79	12.30	0.03	0.09	0.50	0.59	0.09	0.50	0.59	0.00	3,260.45	3,260.45	0.07	0.00	3,262.00
Worker	1.86	1.74	17.84	0.03	0.15	0.12	0.27	0.15	0.12	0.27	0.00	2,582.83	2,582.83	0.16	0.00	2,586.19
Total	**3.52**	**18.53**	**30.14**	**0.06**	**0.24**	**0.62**	**0.86**	**0.24**	**0.62**	**0.86**	**0.00**	**5,843.28**	**5,843.28**	**0.23**	**0.00**	**5,848.19**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.52	3.46	2.97	0.01		0.21	0.21		0.21	0.21	0.00	478.23	478.23	0.04	0.00	479.11
Total	**0.52**	**3.46**	**2.97**	**0.01**		**0.21**	**0.21**		**0.21**	**0.21**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**479.11**

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	0.00	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
Vendor	1.54	15.46	11.47	0.03	1.01	0.45	1.46	0.09	0.45	0.55	0.00	3,266.50	3,266.50	0.07	0.00	3,267.93
Worker	1.74	1.58	16.38	0.03	3.22	0.13	3.35	0.15	0.13	0.27	0.00	2,542.08	2,542.08	0.15	0.00	2,545.21
Total	**3.28**	**17.04**	**27.85**	**0.06**	**4.23**	**0.58**	**4.81**	**0.24**	**0.58**	**0.82**	**0.00**	**5,808.58**	**5,808.58**	**0.22**	**0.00**	**5,813.14**

3.5 Building Construction - 2016

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	0.52	3.46	2.97	0.01		0.21	0.21		0.21	0.21	0.00	478.23	478.23	0.04	0.00	479.11
Total	**0.52**	**3.46**	**2.97**	**0.01**		**0.21**	**0.21**		**0.21**	**0.21**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**479.11**

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	0.00	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
Vendor	1.54	15.46	11.47	0.03	0.09	0.45	0.55	0.09	0.45	0.55	0.00	3,266.50	3,266.50	0.07	0.00	3,267.93
Worker	1.74	1.58	16.38	0.03	0.15	0.13	0.27	0.15	0.13	0.27	0.00	2,542.08	2,542.08	0.15	0.00	2,545.21
Total	**3.28**	**17.04**	**27.85**	**0.06**	**0.24**	**0.58**	**0.82**	**0.24**	**0.58**	**0.82**	**0.00**	**5,808.58**	**5,808.58**	**0.22**	**0.00**	**5,813.14**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.48	3.13	2.94	0.01		0.18	0.18		0.18	0.18	0.00	476.40	476.40	0.04	0.00	477.20
Total	**0.48**	**3.13**	**2.94**	**0.01**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**476.40**	**476.40**	**0.04**	**0.00**	**477.20**

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	0.00	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
Vendor	1.43	14.29	10.62	0.03	1.01	0.41	1.42	0.09	0.41	0.51	0.00	3,259.65	3,259.65	0.06	0.00	3,260.97
Worker	1.60	1.43	14.86	0.03	3.21	0.12	3.34	0.15	0.12	0.27	0.00	2,475.16	2,475.16	0.14	0.00	2,478.03
Total	**3.03**	**15.72**	**25.48**	**0.06**	**4.22**	**0.53**	**4.76**	**0.24**	**0.53**	**0.78**	**0.00**	**5,734.81**	**5,734.81**	**0.20**	**0.00**	**5,739.00**

3.5 Building Construction - 2017

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	0.48	3.13	2.94	0.01		0.18	0.18		0.18	0.18	0.00	476.40	476.40	0.04	0.00	477.20
Total	**0.48**	**3.13**	**2.94**	**0.01**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**476.40**	**476.40**	**0.04**	**0.00**	**477.20**

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	0.00	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
Vendor	1.43	14.29	10.62	0.03	0.09	0.41	0.51	0.09	0.41	0.51	0.00	3,259.65	3,259.65	0.06	0.00	3,260.97
Worker	1.60	1.43	14.86	0.03	0.15	0.12	0.27	0.15	0.12	0.27	0.00	2,475.16	2,475.16	0.14	0.00	2,478.03
Total	**3.03**	**15.72**	**25.48**	**0.06**	**0.24**	**0.53**	**0.78**	**0.24**	**0.53**	**0.78**	**0.00**	**5,734.81**	**5,734.81**	**0.20**	**0.00**	**5,739.00**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.44	2.84	2.93	0.01		0.16	0.16		0.16	0.16	0.00	478.23	478.23	0.04	0.00	478.97
Total	**0.44**	**2.84**	**2.93**	**0.01**		**0.16**	**0.16**		**0.16**	**0.16**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**478.97**

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	0.00	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
Vendor	1.34	13.38	9.98	0.03	1.01	0.38	1.39	0.03	0.35	0.38	0.00	3,277.64	3,277.64	0.06	0.00	3,278.88
Worker	1.50	1.30	13.63	0.03	3.22	0.13	3.35	0.05	0.12	0.17	0.00	2,431.39	2,431.39	0.13	0.00	2,434.06
Total	**2.84**	**14.68**	**23.61**	**0.06**	**4.23**	**0.51**	**4.74**	**0.08**	**0.47**	**0.55**	**0.00**	**5,709.03**	**5,709.03**	**0.19**	**0.00**	**5,712.94**

3.5 Building Construction - 2018

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	0.44	2.84	2.93	0.01		0.16	0.16		0.16	0.16	0.00	478.23	478.23	0.04	0.00	478.97
Total	**0.44**	**2.84**	**2.93**	**0.01**		**0.16**	**0.16**		**0.16**	**0.16**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**478.97**

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	0.00	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
Vendor	1.34	13.38	9.98	0.03	0.09	0.38	0.48	0.03	0.35	0.38	0.00	3,277.64	3,277.64	0.06	0.00	3,278.88
Worker	1.50	1.30	13.63	0.03	0.15	0.13	0.27	0.05	0.12	0.17	0.00	2,431.39	2,431.39	0.13	0.00	2,434.06
Total	**2.84**	**14.68**	**23.61**	**0.06**	**0.24**	**0.51**	**0.75**	**0.08**	**0.47**	**0.55**	**0.00**	**5,709.03**	**5,709.03**	**0.19**	**0.00**	**5,712.94**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.40	2.57	2.92	0.01		0.13	0.13		0.13	0.13	0.00	478.23	478.23	0.03	0.00	478.91
Total	**0.40**	**2.57**	**2.92**	**0.01**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.91**

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	0.00	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
Vendor	1.26	12.55	9.34	0.03	1.01	0.35	1.36	0.03	0.32	0.36	0.00	3,283.28	3,283.28	0.06	0.00	3,284.44
Worker	1.40	1.19	12.54	0.03	3.22	0.13	3.35	0.05	0.12	0.17	0.00	2,382.56	2,382.56	0.12	0.00	2,385.04
Total	**2.66**	**13.74**	**21.88**	**0.06**	**4.23**	**0.48**	**4.71**	**0.08**	**0.44**	**0.53**	**0.00**	**5,665.84**	**5,665.84**	**0.18**	**0.00**	**5,669.48**

3.5 Building Construction - 2019

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	0.40	2.57	2.92	0.01		0.13	0.13		0.13	0.13	0.00	478.23	478.23	0.03	0.00	478.91
Total	**0.40**	**2.57**	**2.92**	**0.01**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.91**

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	0.00	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
Vendor	1.26	12.55	9.34	0.03	0.09	0.35	0.45	0.03	0.32	0.36	0.00	3,283.28	3,283.28	0.06	0.00	3,284.44
Worker	1.40	1.19	12.54	0.03	0.15	0.13	0.27	0.05	0.12	0.17	0.00	2,382.56	2,382.56	0.12	0.00	2,385.04
Total	**2.66**	**13.74**	**21.88**	**0.06**	**0.24**	**0.48**	**0.72**	**0.08**	**0.44**	**0.53**	**0.00**	**5,665.84**	**5,665.84**	**0.18**	**0.00**	**5,669.48**

3.5 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	0.37	2.34	2.91	0.01		0.11	0.11		0.11	0.11	0.00	480.06	480.06	0.03	0.00	480.68
Total	**0.37**	**2.34**	**2.91**	**0.01**		**0.11**	**0.11**		**0.11**	**0.11**	**0.00**	**480.06**	**480.06**	**0.03**	**0.00**	**480.68**

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	0.00	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
Vendor	1.20	11.88	8.90	0.03	1.01	0.33	1.34	0.03	0.30	0.33	0.00	3,300.72	3,300.72	0.05	0.00	3,301.82
Worker	1.32	1.09	11.62	0.03	3.24	0.13	3.36	0.05	0.12	0.17	0.00	2,346.83	2,346.83	0.11	0.00	2,349.15
Total	**2.52**	**12.97**	**20.52**	**0.06**	**4.25**	**0.46**	**4.70**	**0.08**	**0.42**	**0.50**	**0.00**	**5,647.55**	**5,647.55**	**0.16**	**0.00**	**5,650.97**

3.5 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	0.37	2.34	2.91	0.01		0.11	0.11		0.11	0.11	0.00	480.06	480.06	0.03	0.00	480.68
Total	**0.37**	**2.34**	**2.91**	**0.01**		**0.11**	**0.11**		**0.11**	**0.11**	**0.00**	**480.06**	**480.06**	**0.03**	**0.00**	**480.68**

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	0.00	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
Vendor	1.20	11.88	8.90	0.03	0.09	0.33	0.42	0.03	0.30	0.33	0.00	3,300.72	3,300.72	0.05	0.00	3,301.82
Worker	1.32	1.09	11.62	0.03	0.15	0.13	0.27	0.05	0.12	0.17	0.00	2,346.83	2,346.83	0.11	0.00	2,349.15
Total	**2.52**	**12.97**	**20.52**	**0.06**	**0.24**	**0.46**	**0.69**	**0.08**	**0.42**	**0.50**	**0.00**	**5,647.55**	**5,647.55**	**0.16**	**0.00**	**5,650.97**

3.5 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	0.33	2.10	2.88	0.01		0.10	0.10		0.10	0.10	0.00	478.23	478.23	0.03	0.00	478.79
Total	**0.33**	**2.10**	**2.88**	**0.01**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.79**

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	0.00	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
Vendor	1.13	11.24	8.42	0.03	1.01	0.31	1.32	0.03	0.28	0.31	0.00	3,292.57	3,292.57	0.05	0.00	3,293.60
Worker	1.25	1.00	10.73	0.03	3.22	0.13	3.35	0.05	0.12	0.17	0.00	2,296.77	2,296.77	0.10	0.00	2,298.95
Total	**2.38**	**12.24**	**19.15**	**0.06**	**4.23**	**0.44**	**4.67**	**0.08**	**0.40**	**0.48**	**0.00**	**5,589.34**	**5,589.34**	**0.15**	**0.00**	**5,592.55**

3.5 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	0.33	2.10	2.88	0.01		0.10	0.10		0.10	0.10	0.00	478.23	478.23	0.03	0.00	478.79
Total	**0.33**	**2.10**	**2.88**	**0.01**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.79**

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	0.00	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
Vendor	1.13	11.24	8.42	0.03	0.09	0.31	0.40	0.03	0.28	0.31	0.00	3,292.57	3,292.57	0.05	0.00	3,293.60
Worker	1.25	1.00	10.73	0.03	0.15	0.13	0.27	0.05	0.12	0.17	0.00	2,296.77	2,296.77	0.10	0.00	2,298.95
Total	**2.38**	**12.24**	**19.15**	**0.06**	**0.24**	**0.44**	**0.67**	**0.08**	**0.40**	**0.48**	**0.00**	**5,589.34**	**5,589.34**	**0.15**	**0.00**	**5,592.55**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.31	1.89	2.86	0.01		0.08	0.08		0.08	0.08	0.00	476.40	476.40	0.02	0.00	476.92
Total	**0.31**	**1.89**	**2.86**	**0.01**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.92**

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	0.00	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
Vendor	1.07	10.69	8.01	0.03	1.01	0.29	1.29	0.03	0.26	0.30	0.00	3,284.05	3,284.05	0.05	0.00	3,285.03
Worker	1.18	0.92	9.92	0.03	3.21	0.13	3.34	0.05	0.12	0.17	0.00	2,250.31	2,250.31	0.10	0.00	2,252.34
Total	**2.25**	**11.61**	**17.93**	**0.06**	**4.22**	**0.42**	**4.63**	**0.08**	**0.38**	**0.47**	**0.00**	**5,534.36**	**5,534.36**	**0.15**	**0.00**	**5,537.37**

3.5 Building Construction - 2022

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	0.31	1.89	2.86	0.01		0.08	0.08		0.08	0.08	0.00	476.40	476.40	0.02	0.00	476.92
Total	**0.31**	**1.89**	**2.86**	**0.01**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.92**

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	0.00	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
Vendor	1.07	10.69	8.01	0.03	0.09	0.29	0.38	0.03	0.26	0.30	0.00	3,284.05	3,284.05	0.05	0.00	3,285.03
Worker	1.18	0.92	9.92	0.03	0.15	0.13	0.27	0.05	0.12	0.17	0.00	2,250.31	2,250.31	0.10	0.00	2,252.34
Total	**2.25**	**11.61**	**17.93**	**0.06**	**0.24**	**0.42**	**0.65**	**0.08**	**0.38**	**0.47**	**0.00**	**5,534.36**	**5,534.36**	**0.15**	**0.00**	**5,537.37**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.29	1.72	2.86	0.01		0.07	0.07		0.07	0.07	0.00	476.40	476.40	0.02	0.00	476.89
Total	**0.29**	**1.72**	**2.86**	**0.01**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.89**

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	0.00	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
Vendor	1.03	10.26	7.68	0.03	1.01	0.27	1.28	0.03	0.25	0.28	0.00	3,287.92	3,287.92	0.04	0.00	3,288.85
Worker	1.11	0.84	9.22	0.03	3.21	0.13	3.34	0.05	0.12	0.17	0.00	2,215.82	2,215.82	0.09	0.00	2,217.73
Total	**2.14**	**11.10**	**16.90**	**0.06**	**4.22**	**0.40**	**4.62**	**0.08**	**0.37**	**0.45**	**0.00**	**5,503.74**	**5,503.74**	**0.13**	**0.00**	**5,506.58**

3.5 Building Construction - 2023

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	0.29	1.72	2.86	0.01		0.07	0.07		0.07	0.07	0.00	476.40	476.40	0.02	0.00	476.89
Total	**0.29**	**1.72**	**2.86**	**0.01**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.89**

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	0.00	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
Vendor	1.03	10.26	7.68	0.03	0.09	0.27	0.37	0.03	0.25	0.28	0.00	3,287.92	3,287.92	0.04	0.00	3,288.85
Worker	1.11	0.84	9.22	0.03	0.15	0.13	0.27	0.05	0.12	0.17	0.00	2,215.82	2,215.82	0.09	0.00	2,217.73
Total	**2.14**	**11.10**	**16.90**	**0.06**	**0.24**	**0.40**	**0.64**	**0.08**	**0.37**	**0.45**	**0.00**	**5,503.74**	**5,503.74**	**0.13**	**0.00**	**5,506.58**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.28	1.58	2.87	0.01		0.06	0.06		0.06	0.06	0.00	480.06	480.06	0.02	0.00	480.53
Total	**0.28**	**1.58**	**2.87**	**0.01**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.53**

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	0.00	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
Vendor	1.00	9.97	7.45	0.03	1.01	0.26	1.28	0.03	0.24	0.27	0.00	3,316.53	3,316.53	0.04	0.00	3,317.44
Worker	1.06	0.78	8.69	0.03	3.24	0.13	3.36	0.05	0.12	0.17	0.00	2,201.18	2,201.18	0.09	0.00	2,203.02
Total	**2.06**	**10.75**	**16.14**	**0.06**	**4.25**	**0.39**	**4.64**	**0.08**	**0.36**	**0.44**	**0.00**	**5,517.71**	**5,517.71**	**0.13**	**0.00**	**5,520.46**

3.5 Building Construction - 2024

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	0.28	1.58	2.87	0.01		0.06	0.06		0.06	0.06	0.00	480.06	480.06	0.02	0.00	480.53
Total	**0.28**	**1.58**	**2.87**	**0.01**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.53**

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	0.00	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
Vendor	1.00	9.97	7.45	0.03	0.09	0.26	0.36	0.03	0.24	0.27	0.00	3,316.53	3,316.53	0.04	0.00	3,317.44
Worker	1.06	0.78	8.69	0.03	0.15	0.13	0.27	0.05	0.12	0.17	0.00	2,201.18	2,201.18	0.09	0.00	2,203.02
Total	**2.06**	**10.75**	**16.14**	**0.06**	**0.24**	**0.39**	**0.63**	**0.08**	**0.36**	**0.44**	**0.00**	**5,517.71**	**5,517.71**	**0.13**	**0.00**	**5,520.46**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.08	0.43	0.85	0.00		0.01	0.01		0.01	0.01	0.00	142.92	142.92	0.01	0.00	143.05
Total	**0.08**	**0.43**	**0.85**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**142.92**	**142.92**	**0.01**	**0.00**	**143.05**

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	0.00	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
Vendor	0.29	2.88	2.15	0.01	0.30	0.07	0.38	0.01	0.07	0.08	0.00	988.24	988.24	0.01	0.00	988.50
Worker	0.30	0.22	2.43	0.01	0.96	0.04	1.00	0.02	0.03	0.05	0.00	646.85	646.85	0.02	0.00	647.37
Total	**0.59**	**3.10**	**4.58**	**0.02**	**1.26**	**0.11**	**1.38**	**0.03**	**0.10**	**0.13**	**0.00**	**1,635.09**	**1,635.09**	**0.03**	**0.00**	**1,635.87**

3.5 Building Construction - 2025

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	0.08	0.43	0.85	0.00		0.01	0.01		0.01	0.01	0.00	142.92	142.92	0.01	0.00	143.05
Total	**0.08**	**0.43**	**0.85**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**142.92**	**142.92**	**0.01**	**0.00**	**143.05**

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	0.00	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
Vendor	0.29	2.88	2.15	0.01	0.03	0.07	0.10	0.01	0.07	0.08	0.00	988.24	988.24	0.01	0.00	988.50
Worker	0.30	0.22	2.43	0.01	0.04	0.04	0.08	0.02	0.03	0.05	0.00	646.85	646.85	0.02	0.00	647.37
Total	**0.59**	**3.10**	**4.58**	**0.02**	**0.07**	**0.11**	**0.18**	**0.03**	**0.10**	**0.13**	**0.00**	**1,635.09**	**1,635.09**	**0.03**	**0.00**	**1,635.87**

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.23	1.42	1.78	0.00		0.09	0.09		0.09	0.09	0.00	242.12	242.12	0.02	0.00	242.51
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.23**	**1.42**	**1.78**	**0.00**		**0.09**	**0.09**		**0.09**	**0.09**	**0.00**	**242.12**	**242.12**	**0.02**	**0.00**	**242.51**

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	0.00	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
Vendor	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
Worker	0.01	0.00	0.04	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	11.28	11.28	0.00	0.00	11.28
Total	**0.01**	**0.00**	**0.04**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**11.28**	**11.28**	**0.00**	**0.00**	**11.28**

3.6 Paving - 2025

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	0.23	1.42	1.78	0.00		0.09	0.09		0.09	0.09	0.00	242.12	242.12	0.02	0.00	242.51
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.23**	**1.42**	**1.78**	**0.00**		**0.09**	**0.09**		**0.09**	**0.09**	**0.00**	**242.12**	**242.12**	**0.02**	**0.00**	**242.51**

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	0.00	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
Vendor	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
Worker	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.28	11.28	0.00	0.00	11.28
Total	**0.01**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11.28**	**11.28**	**0.00**	**0.00**	**11.28**

3.6 Paving - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.05	0.29	0.36	0.00		0.02	0.02		0.02	0.02	0.00	48.95	48.95	0.00	0.00	49.03
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.05**	**0.29**	**0.36**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**48.95**	**48.95**	**0.00**	**0.00**	**49.03**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28	2.28	0.00	0.00	2.28
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.28**	**2.28**	**0.00**	**0.00**	**2.28**

3.6 Paving - 2026

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	0.05	0.29	0.36	0.00		0.02	0.02		0.02	0.02	0.00	48.95	48.95	0.00	0.00	49.03
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.05**	**0.29**	**0.36**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**48.95**	**48.95**	**0.00**	**0.00**	**49.03**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28	2.28	0.00	0.00	2.28
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.28**	**2.28**	**0.00**	**0.00**	**2.28**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	72.09					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.13	0.20	0.00		0.01	0.01		0.01	0.01	0.00	28.05	28.05	0.00	0.00	28.08
Total	**72.11**	**0.13**	**0.20**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**28.05**	**28.05**	**0.00**	**0.00**	**28.08**

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	0.00	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
Vendor	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
Worker	0.17	0.12	1.37	0.01	0.54	0.02	0.56	0.01	0.02	0.03	0.00	365.07	365.07	0.01	0.00	365.36
Total	**0.17**	**0.12**	**1.37**	**0.01**	**0.54**	**0.02**	**0.56**	**0.01**	**0.02**	**0.03**	**0.00**	**365.07**	**365.07**	**0.01**	**0.00**	**365.36**

3.7 Architectural Coating - 2026

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	72.09					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.13	0.20	0.00		0.01	0.01		0.01	0.01	0.00	28.05	28.05	0.00	0.00	28.08
Total	**72.11**	**0.13**	**0.20**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**28.05**	**28.05**	**0.00**	**0.00**	**28.08**

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	0.00	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
Vendor	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
Worker	0.17	0.12	1.37	0.01	0.02	0.02	0.05	0.01	0.02	0.03	0.00	365.07	365.07	0.01	0.00	365.36
Total	**0.17**	**0.12**	**1.37**	**0.01**	**0.02**	**0.02**	**0.05**	**0.01**	**0.02**	**0.03**	**0.00**	**365.07**	**365.07**	**0.01**	**0.00**	**365.36**

4.0 Mobile Detail

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	21.61	31.80	166.12	0.63	61.07	2.67	63.74	1.04	2.34	3.37	0.00	42,198.84	42,198.84	1.38	0.00	42,227.78
Unmitigated	21.61	31.80	166.12	0.63	61.07	2.67	63.74	1.04	2.34	3.37	0.00	42,198.84	42,198.84	1.38	0.00	42,227.78
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	1,836.60	347.82	179.18	4,049,769	4,049,769
General Office Building	46,616.34	10,034.58	4149.32	84,414,809	84,414,809
Office Park	12,535.73	1,800.23	834.25	23,384,416	23,384,416
Research & Development	4,663.25	1,092.50	638.25	8,967,711	8,967,711
Strip Mall	2,508.51	2,379.46	1156.34	3,537,316	3,537,316
Total	68,160.43	15,654.59	6,957.34	124,354,020	124,354,020

4.3 Trip Type Information

	Miles			Trip %		
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
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00
Office Park	9.50	7.30	7.30	33.00	48.00	19.00
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00

5.0 Energy Detail

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						0.00	0.00		0.00	0.00	0.00	15,193.81	15,193.81	1.52	0.58	15,404.37
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	15,193.81	15,193.81	1.52	0.58	15,404.37
NaturalGas Mitigated	0.65	5.90	4.96	0.04		0.00	0.45		0.00	0.45	0.00	6,426.31	6,426.31	0.12	0.12	6,465.42
NaturalGas Unmitigated	0.65	5.90	4.96	0.04		0.00	0.45		0.00	0.45	0.00	6,426.31	6,426.31	0.12	0.12	6,465.42
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	tons/yr										MT/yr					
General Light Industry	7.22253e+006	0.04	0.35	0.30	0.00		0.00	0.03		0.00	0.03	0.00	385.42	385.42	0.01	0.01	387.77
General Office Building	7.29095e+007	0.39	3.57	3.00	0.02		0.00	0.27		0.00	0.27	0.00	3,890.73	3,890.73	0.07	0.07	3,914.41
Office Park	2.43909e+007	0.13	1.20	1.00	0.01		0.00	0.09		0.00	0.09	0.00	1,301.59	1,301.59	0.02	0.02	1,309.51
Research & Development	1.57607e+007	0.08	0.77	0.65	0.00		0.00	0.06		0.00	0.06	0.00	841.05	841.05	0.02	0.02	846.17
Strip Mall	140934	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	7.52	7.52	0.00	0.00	7.57
Total		**0.64**	**5.90**	**4.96**	**0.03**		**0.00**	**0.45**		**0.00**	**0.45**	**0.00**	**6,426.31**	**6,426.31**	**0.12**	**0.12**	**6,465.43**

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	tons/yr										MT/yr					
General Light Industry	7.22253e+006	0.04	0.35	0.30	0.00		0.00	0.03		0.00	0.03	0.00	385.42	385.42	0.01	0.01	387.77
General Office Building	7.29095e+007	0.39	3.57	3.00	0.02		0.00	0.27		0.00	0.27	0.00	3,890.73	3,890.73	0.07	0.07	3,914.41
Office Park	2.43909e+007	0.13	1.20	1.00	0.01		0.00	0.09		0.00	0.09	0.00	1,301.59	1,301.59	0.02	0.02	1,309.51
Research & Development	1.57607e+007	0.08	0.77	0.65	0.00		0.00	0.06		0.00	0.06	0.00	841.05	841.05	0.02	0.02	846.17
Strip Mall	140934	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	7.52	7.52	0.00	0.00	7.57
Total		**0.64**	**5.90**	**4.96**	**0.03**		**0.00**	**0.45**		**0.00**	**0.45**	**0.00**	**6,426.31**	**6,426.31**	**0.12**	**0.12**	**6,465.43**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	2.37941e+006					312.99	0.03	0.01	317.33
General Office Building	8.34521e+007					10,977.44	1.10	0.42	11,129.58
Office Park	2.38201e+007					3,133.34	0.31	0.12	3,176.76
Research & Development	5.19225e+006					683.00	0.07	0.03	692.46
Strip Mall	661654					87.04	0.01	0.00	88.24
Total						**15,193.81**	**1.52**	**0.58**	**15,404.37**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	2.37941e+006					312.99	0.03	0.01	317.33
General Office Building	8.34521e+007					10,977.44	1.10	0.42	11,129.58
Office Park	2.38201e+007					3,133.34	0.31	0.12	3,176.76
Research & Development	5.19225e+006					683.00	0.07	0.03	692.46
Strip Mall	661654					87.04	0.01	0.00	88.24
Total						**15,193.81**	**1.52**	**0.58**	**15,404.37**

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	31.53	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
Unmitigated	31.53	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

<u>Unmitigated</u>

	ROG	NOx	CO	SO2	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	7.21					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	24.32					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**31.53**	**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**

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	7.21					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	24.32					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**31.53**	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

Category	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					1,195.37	39.25	1.02	2,334.26
Unmitigated					1,195.37	39.25	1.02	2,334.26
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

Land Use	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	Mgal	tons/yr				MT/yr			
General Light Industry	47.3409 / 0					34.23	1.45	0.04	76.15
General Office Building	752.525 / 461.225					756.41	23.05	0.60	1,425.75
Office Park	195.098 / 119.576					196.11	5.97	0.16	369.64
Research & Development	282.724 / 0					204.41	8.65	0.22	454.77
Strip Mall	4.1925 / 2.5696					4.21	0.13	0.00	7.94
Total						**1,195.37**	**39.25**	**1.02**	**2,334.25**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	47.3409 / 0					34.23	1.45	0.04	76.15
General Office Building	752.525 / 461.225					756.41	23.05	0.60	1,425.75
Office Park	195.098 / 119.576					196.11	5.97	0.16	369.64
Research & Development	282.724 / 0					204.41	8.65	0.22	454.77
Strip Mall	4.1925 / 2.5696					4.21	0.13	0.00	7.94
Total						**1,195.37**	**39.25**	**1.02**	**2,334.25**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					1,494.24	88.31	0.00	3,348.69
Unmitigated					1,494.24	88.31	0.00	3,348.69
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	2299.51					466.78	27.59	0.00	1,046.08
General Office Building	3937.62					799.30	47.24	0.00	1,791.29
Office Park	1020.86					207.23	12.25	0.00	464.41
Research & Development	43.7					8.87	0.52	0.00	19.88
Strip Mall	59.43					12.06	0.71	0.00	27.04
Total						**1,494.24**	**88.31**	**0.00**	**3,348.70**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	2299.51					466.78	27.59	0.00	1,046.08
General Office Building	3937.62					799.30	47.24	0.00	1,791.29
Office Park	1020.86					207.23	12.25	0.00	464.41
Research & Development	43.7					8.87	0.52	0.00	19.88
Strip Mall	59.43					12.06	0.71	0.00	27.04
Total						**1,494.24**	**88.31**	**0.00**	**3,348.70**

9.0 Vegetation

sjwpcp Alt 5 GHG only

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Office Building	1202	1000sqft
Office Park	2352	1000sqft
Research & Development	1098	1000sqft
General Light Industry	570.05	1000sqft
Strip Mall	181	1000sqft

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Utility Company** Pacific Gas & Electric Company

Climate Zone 4 **Precipitation Freq (Days)** 58

1.3 User Entered Comments

Project Characteristics - ADjusted C)2 factor to match PG&E estimate for 2020

Land Use - R&D = Combined industrial/commercial

Water And Wastewater - Per scaqmd water rate for industrial use is in error Use 697 gal/employee/day = 697*468*313=gal/yr

Solid Waste - Per SCAQMD waste rates for industrial uses is in error and should be 15% of quoted rate of 33164.76 ton/yr

Land Use Change -

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					
2011	1.33	10.70	6.31	0.01	1.11	0.55	1.66	0.60	0.55	1.15	0.00	920.58	920.58	0.11	0.00	922.86
2012	1.59	13.00	7.20	0.01	2.46	0.63	3.09	1.15	0.63	1.79	0.00	1,233.84	1,233.84	0.13	0.00	1,236.55
2013	3.18	19.25	23.41	0.04	3.53	0.80	4.32	0.68	0.80	1.48	0.00	3,856.45	3,856.45	0.23	0.00	3,861.23
2014	3.97	21.82	32.12	0.06	3.73	0.85	4.58	0.21	0.85	1.06	0.00	5,638.90	5,638.90	0.27	0.00	5,644.67
2015	3.65	19.91	29.45	0.06	3.73	0.77	4.50	0.21	0.77	0.99	0.00	5,592.33	5,592.33	0.25	0.00	5,597.62
2016	3.39	18.28	27.42	0.06	3.73	0.71	4.44	0.21	0.71	0.92	0.00	5,561.53	5,561.53	0.23	0.00	5,566.43
2017	3.13	16.80	25.30	0.06	3.71	0.65	4.36	0.21	0.65	0.86	0.00	5,494.56	5,494.56	0.21	0.00	5,499.06
2018	2.92	15.61	23.65	0.06	3.73	0.60	4.33	0.07	0.56	0.64	0.00	5,473.28	5,473.28	0.20	0.00	5,477.46
2019	2.73	14.52	22.11	0.06	3.73	0.55	4.28	0.07	0.52	0.59	0.00	5,434.99	5,434.99	0.18	0.00	5,438.86
2020	2.58	13.62	20.92	0.06	3.74	0.51	4.25	0.07	0.48	0.56	0.00	5,420.35	5,420.35	0.17	0.00	5,423.97
2021	2.42	12.73	19.68	0.06	3.73	0.47	4.20	0.07	0.44	0.52	0.00	5,367.16	5,367.16	0.16	0.00	5,370.54
2022	2.28	11.98	18.59	0.06	3.71	0.44	4.16	0.07	0.41	0.49	0.00	5,316.83	5,316.83	0.15	0.00	5,320.00
2023	2.17	11.37	17.68	0.06	3.71	0.41	4.13	0.07	0.39	0.46	0.00	5,289.68	5,289.68	0.14	0.00	5,292.67
2024	2.08	10.93	17.02	0.06	3.74	0.40	4.14	0.07	0.37	0.44	0.00	5,305.23	5,305.23	0.14	0.00	5,308.11
2025	0.83	4.55	6.69	0.02	1.13	0.20	1.33	0.02	0.19	0.22	0.00	1,826.09	1,826.09	0.06	0.00	1,827.31
2026	62.77	0.52	1.78	0.01	0.48	0.04	0.53	0.01	0.04	0.05	0.00	401.89	401.89	0.02	0.00	402.26
Total	**101.02**	**215.59**	**299.33**	**0.75**	**49.70**	**8.58**	**58.30**	**3.79**	**8.36**	**12.22**	**0.00**	**68,133.69**	**68,133.69**	**2.65**	**0.00**	**68,189.60**

2.1 Overall Construction

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					
2011	1.33	10.70	6.31	0.01	1.09	0.55	1.63	0.60	0.55	1.15	0.00	920.58	920.58	0.11	0.00	922.86
2012	1.59	13.00	7.20	0.01	2.43	0.63	3.06	1.15	0.63	1.79	0.00	1,233.84	1,233.84	0.13	0.00	1,236.55
2013	3.18	19.25	23.41	0.04	1.47	0.80	2.26	0.68	0.80	1.48	0.00	3,856.45	3,856.45	0.23	0.00	3,861.23
2014	3.97	21.82	32.12	0.06	0.21	0.85	1.06	0.21	0.85	1.06	0.00	5,638.90	5,638.90	0.27	0.00	5,644.67
2015	3.65	19.91	29.45	0.06	0.21	0.77	0.99	0.21	0.77	0.99	0.00	5,592.33	5,592.33	0.25	0.00	5,597.62
2016	3.39	18.28	27.42	0.06	0.21	0.71	0.92	0.21	0.71	0.92	0.00	5,561.53	5,561.53	0.23	0.00	5,566.43
2017	3.13	16.80	25.30	0.06	0.21	0.65	0.86	0.21	0.65	0.86	0.00	5,494.56	5,494.56	0.21	0.00	5,499.06
2018	2.92	15.61	23.65	0.06	0.21	0.60	0.81	0.07	0.56	0.64	0.00	5,473.28	5,473.28	0.20	0.00	5,477.46
2019	2.73	14.52	22.11	0.06	0.21	0.55	0.76	0.07	0.52	0.59	0.00	5,434.99	5,434.99	0.18	0.00	5,438.86
2020	2.58	13.62	20.92	0.06	0.21	0.51	0.72	0.07	0.48	0.56	0.00	5,420.35	5,420.35	0.17	0.00	5,423.97
2021	2.42	12.73	19.68	0.06	0.21	0.47	0.69	0.07	0.44	0.52	0.00	5,367.16	5,367.16	0.16	0.00	5,370.54
2022	2.28	11.98	18.59	0.06	0.21	0.44	0.65	0.07	0.41	0.49	0.00	5,316.83	5,316.83	0.15	0.00	5,320.00
2023	2.17	11.37	17.68	0.06	0.21	0.41	0.63	0.07	0.39	0.46	0.00	5,289.68	5,289.68	0.14	0.00	5,292.67
2024	2.08	10.93	17.02	0.06	0.21	0.40	0.61	0.07	0.37	0.44	0.00	5,305.23	5,305.23	0.14	0.00	5,308.11
2025	0.83	4.55	6.69	0.02	0.06	0.20	0.26	0.02	0.19	0.22	0.00	1,826.09	1,826.09	0.06	0.00	1,827.31
2026	62.77	0.52	1.78	0.01	0.02	0.04	0.06	0.01	0.04	0.05	0.00	401.89	401.89	0.02	0.00	402.26
Total	**101.02**	**215.59**	**299.33**	**0.75**	**7.38**	**8.58**	**15.97**	**3.79**	**8.36**	**12.22**	**0.00**	**68,133.69**	**68,133.69**	**2.65**	**0.00**	**68,189.60**

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	27.36	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
Energy	0.64	5.84	4.91	0.04		0.00	0.44		0.00	0.44	0.00	18,447.09	18,447.09	1.33	0.58	18,653.33
Mobile	19.44	28.63	149.19	0.56	54.64	2.39	57.03	0.93	2.09	3.02	0.00	37,777.89	37,777.89	1.24	0.00	37,803.83
Waste						0.00	0.00		0.00	0.00	1,736.27	0.00	1,736.27	102.61	0.00	3,891.09
Water						0.00	0.00		0.00	0.00	0.00	1,112.55	1,112.55	39.40	1.02	2,254.82
Total	**47.44**	**34.47**	**154.10**	**0.60**	**54.64**	**2.39**	**57.47**	**0.93**	**2.09**	**3.46**	**1,736.27**	**57,337.53**	**59,073.80**	**144.58**	**1.60**	**62,603.07**

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	27.36	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
Energy	0.64	5.84	4.91	0.04		0.00	0.44		0.00	0.44	0.00	18,447.09	18,447.09	1.33	0.58	18,653.33
Mobile	19.44	28.63	149.19	0.56	54.64	2.39	57.03	0.93	2.09	3.02	0.00	37,777.89	37,777.89	1.24	0.00	37,803.83
Waste						0.00	0.00		0.00	0.00	1,736.27	0.00	1,736.27	102.61	0.00	3,891.09
Water						0.00	0.00		0.00	0.00	0.00	1,112.55	1,112.55	39.40	1.02	2,254.82
Total	**47.44**	**34.47**	**154.10**	**0.60**	**54.64**	**2.39**	**57.47**	**0.93**	**2.09**	**3.46**	**1,736.27**	**57,337.53**	**59,073.80**	**144.58**	**1.60**	**62,603.07**

2.3 Vegetation

Vegetation

	ROG	NOx	CO	SO2	CO2e
Category	tons				MT
Vegetation Land Change					-1,749.86
Total					**-1,749.86**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Demolition - 2011

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	0.98	7.99	4.59	0.01		0.41	0.41		0.41	0.41	0.00	681.18	681.18	0.08	0.00	682.86
Total	**0.98**	**7.99**	**4.59**	**0.01**		**0.41**	**0.41**		**0.41**	**0.41**	**0.00**	**681.18**	**681.18**	**0.08**	**0.00**	**682.86**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.15	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	16.02	16.02	0.00	0.00	16.05
Total	**0.01**	**0.01**	**0.15**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**16.02**	**16.02**	**0.00**	**0.00**	**16.05**

3.2 Demolition - 2011

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	0.98	7.99	4.59	0.01		0.41	0.41		0.41	0.41	0.00	681.18	681.18	0.08	0.00	682.86
Total	**0.98**	**7.99**	**4.59**	**0.01**		**0.41**	**0.41**		**0.41**	**0.41**	**0.00**	**681.18**	**681.18**	**0.08**	**0.00**	**682.86**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.02	16.02	0.00	0.00	16.05
Total	**0.01**	**0.01**	**0.15**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**16.02**	**16.02**	**0.00**	**0.00**	**16.05**

3.3 Site Preparation - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.08	0.00	1.08	0.60	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.33	2.69	1.51	0.00		0.14	0.14		0.14	0.14	0.00	217.60	217.60	0.03	0.00	218.17
Total	**0.33**	**2.69**	**1.51**	**0.00**	**1.08**	**0.14**	**1.22**	**0.60**	**0.14**	**0.74**	**0.00**	**217.60**	**217.60**	**0.03**	**0.00**	**218.17**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.77	5.77	0.00	0.00	5.78
Total	**0.01**	**0.01**	**0.05**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.77**	**5.77**	**0.00**	**0.00**	**5.78**

3.3 Site Preparation - 2011

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					1.08	0.00	1.08	0.60	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.33	2.69	1.51	0.00		0.14	0.14		0.14	0.14	0.00	217.60	217.60	0.03	0.00	218.17
Total	**0.33**	**2.69**	**1.51**	**0.00**	**1.08**	**0.14**	**1.22**	**0.60**	**0.14**	**0.74**	**0.00**	**217.60**	**217.60**	**0.03**	**0.00**	**218.17**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	5.77	0.00	0.00	5.78
Total	**0.01**	**0.01**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.77**	**5.77**	**0.00**	**0.00**	**5.78**

3.3 Site Preparation - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.08	0.00	1.08	0.60	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.31	2.54	1.43	0.00		0.13	0.13		0.13	0.13	0.00	217.60	217.60	0.03	0.00	218.14
Total	**0.31**	**2.54**	**1.43**	**0.00**	**1.08**	**0.13**	**1.21**	**0.60**	**0.13**	**0.73**	**0.00**	**217.60**	**217.60**	**0.03**	**0.00**	**218.14**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.65	5.65	0.00	0.00	5.66
Total	**0.00**	**0.00**	**0.05**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.65**	**5.65**	**0.00**	**0.00**	**5.66**

3.3 Site Preparation - 2012

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					1.08	0.00	1.08	0.60	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.31	2.54	1.43	0.00		0.13	0.13		0.13	0.13	0.00	217.60	217.60	0.03	0.00	218.14
Total	**0.31**	**2.54**	**1.43**	**0.00**	**1.08**	**0.13**	**1.21**	**0.60**	**0.13**	**0.73**	**0.00**	**217.60**	**217.60**	**0.03**	**0.00**	**218.14**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.65	5.65	0.00	0.00	5.66
Total	**0.00**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.65**	**5.65**	**0.00**	**0.00**	**5.66**

3.4 Grading - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.34	0.00	1.34	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.26	10.44	5.54	0.01		0.50	0.50		0.50	0.50	0.00	989.55	989.55	0.10	0.00	991.70
Total	**1.26**	**10.44**	**5.54**	**0.01**	**1.34**	**0.50**	**1.84**	**0.56**	**0.50**	**1.06**	**0.00**	**989.55**	**989.55**	**0.10**	**0.00**	**991.70**

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	0.00	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
Vendor	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
Worker	0.02	0.02	0.18	0.00	0.02	0.00	0.03	0.00	0.00	0.00	0.00	21.03	21.03	0.00	0.00	21.06
Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.02**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**21.03**	**21.03**	**0.00**	**0.00**	**21.06**

3.4 Grading - 2012

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					1.34	0.00	1.34	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.26	10.44	5.54	0.01		0.50	0.50		0.50	0.50	0.00	989.55	989.55	0.10	0.00	991.70
Total	**1.26**	**10.44**	**5.54**	**0.01**	**1.34**	**0.50**	**1.84**	**0.56**	**0.50**	**1.06**	**0.00**	**989.55**	**989.55**	**0.10**	**0.00**	**991.70**

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	0.00	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
Vendor	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
Worker	0.02	0.02	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.03	21.03	0.00	0.00	21.06
Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**21.03**	**21.03**	**0.00**	**0.00**	**21.06**

3.4 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.34	0.00	1.34	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.65	5.31	2.88	0.01		0.25	0.25		0.25	0.25	0.00	536.62	536.62	0.05	0.00	537.72
Total	**0.65**	**5.31**	**2.88**	**0.01**	**1.34**	**0.25**	**1.59**	**0.56**	**0.25**	**0.81**	**0.00**	**536.62**	**536.62**	**0.05**	**0.00**	**537.72**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.09	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	11.17	11.17	0.00	0.00	11.19
Total	**0.01**	**0.01**	**0.09**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**11.17**	**11.17**	**0.00**	**0.00**	**11.19**

3.4 Grading - 2013

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					1.34	0.00	1.34	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.65	5.31	2.88	0.01		0.25	0.25		0.25	0.25	0.00	536.62	536.62	0.05	0.00	537.72
Total	**0.65**	**5.31**	**2.88**	**0.01**	**1.34**	**0.25**	**1.59**	**0.56**	**0.25**	**0.81**	**0.00**	**536.62**	**536.62**	**0.05**	**0.00**	**537.72**

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	0.00	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
Vendor	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
Worker	0.01	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.17	11.17	0.00	0.00	11.19
Total	**0.01**	**0.01**	**0.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11.17**	**11.17**	**0.00**	**0.00**	**11.19**

3.5 Building Construction - 2013

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	0.39	2.63	1.78	0.00		0.17	0.17		0.17	0.17	0.00	278.51	278.51	0.03	0.00	279.18
Total	**0.39**	**2.63**	**1.78**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**278.51**	**278.51**	**0.03**	**0.00**	**279.18**

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	0.00	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
Vendor	1.01	10.21	7.54	0.02	0.51	0.31	0.82	0.05	0.31	0.36	0.00	1,639.33	1,639.33	0.05	0.00	1,640.28
Worker	1.12	1.09	11.13	0.02	1.66	0.06	1.72	0.08	0.06	0.14	0.00	1,390.81	1,390.81	0.10	0.00	1,392.86
Total	**2.13**	**11.30**	**18.67**	**0.04**	**2.17**	**0.37**	**2.54**	**0.13**	**0.37**	**0.50**	**0.00**	**3,030.14**	**3,030.14**	**0.15**	**0.00**	**3,033.14**

3.5 Building Construction - 2013

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	0.39	2.63	1.78	0.00		0.17	0.17		0.17	0.17	0.00	278.51	278.51	0.03	0.00	279.18
Total	**0.39**	**2.63**	**1.78**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**278.51**	**278.51**	**0.03**	**0.00**	**279.18**

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	0.00	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
Vendor	1.01	10.21	7.54	0.02	0.05	0.31	0.36	0.05	0.31	0.36	0.00	1,639.33	1,639.33	0.05	0.00	1,640.28
Worker	1.12	1.09	11.13	0.02	0.08	0.06	0.14	0.08	0.06	0.14	0.00	1,390.81	1,390.81	0.10	0.00	1,392.86
Total	**2.13**	**11.30**	**18.67**	**0.04**	**0.13**	**0.37**	**0.50**	**0.13**	**0.37**	**0.50**	**0.00**	**3,030.14**	**3,030.14**	**0.15**	**0.00**	**3,033.14**

3.5 Building Construction - 2014

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	0.62	4.18	3.03	0.01		0.26	0.26		0.26	0.26	0.00	478.23	478.23	0.05	0.00	479.28
Total	**0.62**	**4.18**	**3.03**	**0.01**		**0.26**	**0.26**		**0.26**	**0.26**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.28**

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	0.00	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
Vendor	1.57	15.93	11.72	0.03	0.88	0.48	1.35	0.08	0.48	0.56	0.00	2,822.42	2,822.42	0.07	0.00	2,823.90
Worker	1.78	1.70	17.37	0.03	2.85	0.11	2.96	0.13	0.11	0.24	0.00	2,338.25	2,338.25	0.15	0.00	2,341.48
Total	**3.35**	**17.63**	**29.09**	**0.06**	**3.73**	**0.59**	**4.31**	**0.21**	**0.59**	**0.80**	**0.00**	**5,160.67**	**5,160.67**	**0.22**	**0.00**	**5,165.38**

3.5 Building Construction - 2014

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	0.62	4.18	3.03	0.01		0.26	0.26		0.26	0.26	0.00	478.23	478.23	0.05	0.00	479.28
Total	**0.62**	**4.18**	**3.03**	**0.01**		**0.26**	**0.26**		**0.26**	**0.26**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.28**

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	0.00	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
Vendor	1.57	15.93	11.72	0.03	0.08	0.48	0.56	0.08	0.48	0.56	0.00	2,822.42	2,822.42	0.07	0.00	2,823.90
Worker	1.78	1.70	17.37	0.03	0.13	0.11	0.24	0.13	0.11	0.24	0.00	2,338.25	2,338.25	0.15	0.00	2,341.48
Total	**3.35**	**17.63**	**29.09**	**0.06**	**0.21**	**0.59**	**0.80**	**0.21**	**0.59**	**0.80**	**0.00**	**5,160.67**	**5,160.67**	**0.22**	**0.00**	**5,165.38**

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.57	3.80	3.00	0.01		0.23	0.23		0.23	0.23	0.00	478.23	478.23	0.05	0.00	479.20
Total	**0.57**	**3.80**	**3.00**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.20**

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	0.00	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
Vendor	1.44	14.57	10.67	0.03	0.88	0.43	1.31	0.08	0.43	0.51	0.00	2,829.34	2,829.34	0.06	0.00	2,830.69
Worker	1.65	1.54	15.78	0.03	2.85	0.11	2.96	0.13	0.11	0.24	0.00	2,284.76	2,284.76	0.14	0.00	2,287.73
Total	**3.09**	**16.11**	**26.45**	**0.06**	**3.73**	**0.54**	**4.27**	**0.21**	**0.54**	**0.75**	**0.00**	**5,114.10**	**5,114.10**	**0.20**	**0.00**	**5,118.42**

3.5 Building Construction - 2015

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	0.57	3.80	3.00	0.01		0.23	0.23		0.23	0.23	0.00	478.23	478.23	0.05	0.00	479.20
Total	**0.57**	**3.80**	**3.00**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.20**

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	0.00	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
Vendor	1.44	14.57	10.67	0.03	0.08	0.43	0.51	0.08	0.43	0.51	0.00	2,829.34	2,829.34	0.06	0.00	2,830.69
Worker	1.65	1.54	15.78	0.03	0.13	0.11	0.24	0.13	0.11	0.24	0.00	2,284.76	2,284.76	0.14	0.00	2,287.73
Total	**3.09**	**16.11**	**26.45**	**0.06**	**0.21**	**0.54**	**0.75**	**0.21**	**0.54**	**0.75**	**0.00**	**5,114.10**	**5,114.10**	**0.20**	**0.00**	**5,118.42**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.52	3.46	2.97	0.01		0.21	0.21		0.21	0.21	0.00	478.23	478.23	0.04	0.00	479.11
Total	**0.52**	**3.46**	**2.97**	**0.01**		**0.21**	**0.21**		**0.21**	**0.21**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**479.11**

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	0.00	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
Vendor	1.34	13.42	9.95	0.03	0.88	0.39	1.27	0.08	0.39	0.47	0.00	2,834.59	2,834.59	0.06	0.00	2,835.84
Worker	1.54	1.40	14.49	0.03	2.85	0.11	2.96	0.13	0.11	0.24	0.00	2,248.71	2,248.71	0.13	0.00	2,251.48
Total	**2.88**	**14.82**	**24.44**	**0.06**	**3.73**	**0.50**	**4.23**	**0.21**	**0.50**	**0.71**	**0.00**	**5,083.30**	**5,083.30**	**0.19**	**0.00**	**5,087.32**

3.5 Building Construction - 2016

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	0.52	3.46	2.97	0.01		0.21	0.21		0.21	0.21	0.00	478.23	478.23	0.04	0.00	479.11
Total	**0.52**	**3.46**	**2.97**	**0.01**		**0.21**	**0.21**		**0.21**	**0.21**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**479.11**

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	0.00	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
Vendor	1.34	13.42	9.95	0.03	0.08	0.39	0.47	0.08	0.39	0.47	0.00	2,834.59	2,834.59	0.06	0.00	2,835.84
Worker	1.54	1.40	14.49	0.03	0.13	0.11	0.24	0.13	0.11	0.24	0.00	2,248.71	2,248.71	0.13	0.00	2,251.48
Total	**2.88**	**14.82**	**24.44**	**0.06**	**0.21**	**0.50**	**0.71**	**0.21**	**0.50**	**0.71**	**0.00**	**5,083.30**	**5,083.30**	**0.19**	**0.00**	**5,087.32**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.48	3.13	2.94	0.01		0.18	0.18		0.18	0.18	0.00	476.40	476.40	0.04	0.00	477.20
Total	**0.48**	**3.13**	**2.94**	**0.01**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**476.40**	**476.40**	**0.04**	**0.00**	**477.20**

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	0.00	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
Vendor	1.24	12.40	9.21	0.03	0.87	0.36	1.23	0.08	0.36	0.44	0.00	2,828.65	2,828.65	0.05	0.00	2,829.80
Worker	1.42	1.27	13.14	0.03	2.84	0.11	2.95	0.13	0.11	0.24	0.00	2,189.52	2,189.52	0.12	0.00	2,192.06
Total	**2.66**	**13.67**	**22.35**	**0.06**	**3.71**	**0.47**	**4.18**	**0.21**	**0.47**	**0.68**	**0.00**	**5,018.17**	**5,018.17**	**0.17**	**0.00**	**5,021.86**

3.5 Building Construction - 2017

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	0.48	3.13	2.94	0.01		0.18	0.18		0.18	0.18	0.00	476.40	476.40	0.04	0.00	477.20
Total	**0.48**	**3.13**	**2.94**	**0.01**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**476.40**	**476.40**	**0.04**	**0.00**	**477.20**

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	0.00	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
Vendor	1.24	12.40	9.21	0.03	0.08	0.36	0.44	0.08	0.36	0.44	0.00	2,828.65	2,828.65	0.05	0.00	2,829.80
Worker	1.42	1.27	13.14	0.03	0.13	0.11	0.24	0.13	0.11	0.24	0.00	2,189.52	2,189.52	0.12	0.00	2,192.06
Total	**2.66**	**13.67**	**22.35**	**0.06**	**0.21**	**0.47**	**0.68**	**0.21**	**0.47**	**0.68**	**0.00**	**5,018.17**	**5,018.17**	**0.17**	**0.00**	**5,021.86**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.44	2.84	2.93	0.01		0.16	0.16		0.16	0.16	0.00	478.23	478.23	0.04	0.00	478.97
Total	**0.44**	**2.84**	**2.93**	**0.01**		**0.16**	**0.16**		**0.16**	**0.16**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**478.97**

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	0.00	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
Vendor	1.16	11.61	8.66	0.03	0.88	0.33	1.21	0.03	0.30	0.33	0.00	2,844.26	2,844.26	0.05	0.00	2,845.34
Worker	1.32	1.15	12.06	0.03	2.85	0.11	2.96	0.05	0.10	0.15	0.00	2,150.79	2,150.79	0.11	0.00	2,153.16
Total	**2.48**	**12.76**	**20.72**	**0.06**	**3.73**	**0.44**	**4.17**	**0.08**	**0.40**	**0.48**	**0.00**	**4,995.05**	**4,995.05**	**0.16**	**0.00**	**4,998.50**

3.5 Building Construction - 2018

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	0.44	2.84	2.93	0.01		0.16	0.16		0.16	0.16	0.00	478.23	478.23	0.04	0.00	478.97
Total	**0.44**	**2.84**	**2.93**	**0.01**		**0.16**	**0.16**		**0.16**	**0.16**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**478.97**

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	0.00	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
Vendor	1.16	11.61	8.66	0.03	0.08	0.33	0.41	0.03	0.30	0.33	0.00	2,844.26	2,844.26	0.05	0.00	2,845.34
Worker	1.32	1.15	12.06	0.03	0.13	0.11	0.24	0.05	0.10	0.15	0.00	2,150.79	2,150.79	0.11	0.00	2,153.16
Total	**2.48**	**12.76**	**20.72**	**0.06**	**0.21**	**0.44**	**0.65**	**0.08**	**0.40**	**0.48**	**0.00**	**4,995.05**	**4,995.05**	**0.16**	**0.00**	**4,998.50**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.40	2.57	2.92	0.01		0.13	0.13		0.13	0.13	0.00	478.23	478.23	0.03	0.00	478.91
Total	**0.40**	**2.57**	**2.92**	**0.01**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.91**

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	0.00	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
Vendor	1.09	10.89	8.10	0.03	0.88	0.31	1.18	0.03	0.28	0.31	0.00	2,849.16	2,849.16	0.05	0.00	2,850.16
Worker	1.24	1.05	11.09	0.03	2.85	0.11	2.96	0.05	0.10	0.15	0.00	2,107.60	2,107.60	0.10	0.00	2,109.79
Total	**2.33**	**11.94**	**19.19**	**0.06**	**3.73**	**0.42**	**4.14**	**0.08**	**0.38**	**0.46**	**0.00**	**4,956.76**	**4,956.76**	**0.15**	**0.00**	**4,959.95**

3.5 Building Construction - 2019

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	0.40	2.57	2.92	0.01		0.13	0.13		0.13	0.13	0.00	478.23	478.23	0.03	0.00	478.91
Total	**0.40**	**2.57**	**2.92**	**0.01**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.91**

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	0.00	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
Vendor	1.09	10.89	8.10	0.03	0.08	0.31	0.39	0.03	0.28	0.31	0.00	2,849.16	2,849.16	0.05	0.00	2,850.16
Worker	1.24	1.05	11.09	0.03	0.13	0.11	0.24	0.05	0.10	0.15	0.00	2,107.60	2,107.60	0.10	0.00	2,109.79
Total	**2.33**	**11.94**	**19.19**	**0.06**	**0.21**	**0.42**	**0.63**	**0.08**	**0.38**	**0.46**	**0.00**	**4,956.76**	**4,956.76**	**0.15**	**0.00**	**4,959.95**

3.5 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	0.37	2.34	2.91	0.01		0.11	0.11		0.11	0.11	0.00	480.06	480.06	0.03	0.00	480.68
Total	**0.37**	**2.34**	**2.91**	**0.01**		**0.11**	**0.11**		**0.11**	**0.11**	**0.00**	**480.06**	**480.06**	**0.03**	**0.00**	**480.68**

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	0.00	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
Vendor	1.04	10.31	7.72	0.03	0.88	0.29	1.17	0.03	0.26	0.29	0.00	2,864.29	2,864.29	0.05	0.00	2,865.24
Worker	1.17	0.97	10.28	0.03	2.86	0.11	2.97	0.05	0.10	0.15	0.00	2,075.99	2,075.99	0.10	0.00	2,078.05
Total	**2.21**	**11.28**	**18.00**	**0.06**	**3.74**	**0.40**	**4.14**	**0.08**	**0.36**	**0.44**	**0.00**	**4,940.28**	**4,940.28**	**0.15**	**0.00**	**4,943.29**

3.5 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	0.37	2.34	2.91	0.01		0.11	0.11		0.11	0.11	0.00	480.06	480.06	0.03	0.00	480.68
Total	**0.37**	**2.34**	**2.91**	**0.01**		**0.11**	**0.11**		**0.11**	**0.11**	**0.00**	**480.06**	**480.06**	**0.03**	**0.00**	**480.68**

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	0.00	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
Vendor	1.04	10.31	7.72	0.03	0.08	0.29	0.37	0.03	0.26	0.29	0.00	2,864.29	2,864.29	0.05	0.00	2,865.24
Worker	1.17	0.97	10.28	0.03	0.13	0.11	0.24	0.05	0.10	0.15	0.00	2,075.99	2,075.99	0.10	0.00	2,078.05
Total	**2.21**	**11.28**	**18.00**	**0.06**	**0.21**	**0.40**	**0.61**	**0.08**	**0.36**	**0.44**	**0.00**	**4,940.28**	**4,940.28**	**0.15**	**0.00**	**4,943.29**

3.5 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	0.33	2.10	2.88	0.01		0.10	0.10		0.10	0.10	0.00	478.23	478.23	0.03	0.00	478.79
Total	**0.33**	**2.10**	**2.88**	**0.01**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.79**

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	0.00	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
Vendor	0.98	9.75	7.30	0.03	0.88	0.27	1.14	0.03	0.25	0.27	0.00	2,857.22	2,857.22	0.04	0.00	2,858.11
Worker	1.10	0.88	9.49	0.03	2.85	0.11	2.96	0.05	0.10	0.15	0.00	2,031.71	2,031.71	0.09	0.00	2,033.64
Total	**2.08**	**10.63**	**16.79**	**0.06**	**3.73**	**0.38**	**4.10**	**0.08**	**0.35**	**0.42**	**0.00**	**4,888.93**	**4,888.93**	**0.13**	**0.00**	**4,891.75**

3.5 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	0.33	2.10	2.88	0.01		0.10	0.10		0.10	0.10	0.00	478.23	478.23	0.03	0.00	478.79
Total	**0.33**	**2.10**	**2.88**	**0.01**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.79**

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	0.00	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
Vendor	0.98	9.75	7.30	0.03	0.08	0.27	0.35	0.03	0.25	0.27	0.00	2,857.22	2,857.22	0.04	0.00	2,858.11
Worker	1.10	0.88	9.49	0.03	0.13	0.11	0.24	0.05	0.10	0.15	0.00	2,031.71	2,031.71	0.09	0.00	2,033.64
Total	**2.08**	**10.63**	**16.79**	**0.06**	**0.21**	**0.38**	**0.59**	**0.08**	**0.35**	**0.42**	**0.00**	**4,888.93**	**4,888.93**	**0.13**	**0.00**	**4,891.75**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.31	1.89	2.86	0.01		0.08	0.08		0.08	0.08	0.00	476.40	476.40	0.02	0.00	476.92
Total	**0.31**	**1.89**	**2.86**	**0.01**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.92**

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	0.00	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
Vendor	0.93	9.27	6.95	0.03	0.87	0.25	1.12	0.03	0.23	0.26	0.00	2,849.82	2,849.82	0.04	0.00	2,850.67
Worker	1.04	0.81	8.77	0.03	2.84	0.11	2.95	0.05	0.10	0.15	0.00	1,990.62	1,990.62	0.09	0.00	1,992.41
Total	**1.97**	**10.08**	**15.72**	**0.06**	**3.71**	**0.36**	**4.07**	**0.08**	**0.33**	**0.41**	**0.00**	**4,840.44**	**4,840.44**	**0.13**	**0.00**	**4,843.08**

3.5 Building Construction - 2022

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	0.31	1.89	2.86	0.01		0.08	0.08		0.08	0.08	0.00	476.40	476.40	0.02	0.00	476.92
Total	**0.31**	**1.89**	**2.86**	**0.01**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.92**

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	0.00	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
Vendor	0.93	9.27	6.95	0.03	0.08	0.25	0.33	0.03	0.23	0.26	0.00	2,849.82	2,849.82	0.04	0.00	2,850.67
Worker	1.04	0.81	8.77	0.03	0.13	0.11	0.24	0.05	0.10	0.15	0.00	1,990.62	1,990.62	0.09	0.00	1,992.41
Total	**1.97**	**10.08**	**15.72**	**0.06**	**0.21**	**0.36**	**0.57**	**0.08**	**0.33**	**0.41**	**0.00**	**4,840.44**	**4,840.44**	**0.13**	**0.00**	**4,843.08**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.29	1.72	2.86	0.01		0.07	0.07		0.07	0.07	0.00	476.40	476.40	0.02	0.00	476.89
Total	**0.29**	**1.72**	**2.86**	**0.01**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.89**

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	0.00	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
Vendor	0.89	8.91	6.67	0.03	0.87	0.24	1.11	0.03	0.22	0.24	0.00	2,853.18	2,853.18	0.04	0.00	2,853.99
Worker	0.99	0.75	8.15	0.03	2.84	0.11	2.95	0.05	0.10	0.15	0.00	1,960.10	1,960.10	0.08	0.00	1,961.80
Total	**1.88**	**9.66**	**14.82**	**0.06**	**3.71**	**0.35**	**4.06**	**0.08**	**0.32**	**0.39**	**0.00**	**4,813.28**	**4,813.28**	**0.12**	**0.00**	**4,815.79**

3.5 Building Construction - 2023

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	0.29	1.72	2.86	0.01		0.07	0.07		0.07	0.07	0.00	476.40	476.40	0.02	0.00	476.89
Total	**0.29**	**1.72**	**2.86**	**0.01**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.89**

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	0.00	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
Vendor	0.89	8.91	6.67	0.03	0.08	0.24	0.32	0.03	0.22	0.24	0.00	2,853.18	2,853.18	0.04	0.00	2,853.99
Worker	0.99	0.75	8.15	0.03	0.13	0.11	0.24	0.05	0.10	0.15	0.00	1,960.10	1,960.10	0.08	0.00	1,961.80
Total	**1.88**	**9.66**	**14.82**	**0.06**	**0.21**	**0.35**	**0.56**	**0.08**	**0.32**	**0.39**	**0.00**	**4,813.28**	**4,813.28**	**0.12**	**0.00**	**4,815.79**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.28	1.58	2.87	0.01		0.06	0.06		0.06	0.06	0.00	480.06	480.06	0.02	0.00	480.53
Total	**0.28**	**1.58**	**2.87**	**0.01**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.53**

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	0.00	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
Vendor	0.87	8.65	6.46	0.03	0.88	0.23	1.11	0.03	0.21	0.24	0.00	2,878.01	2,878.01	0.04	0.00	2,878.80
Worker	0.94	0.69	7.68	0.03	2.86	0.11	2.97	0.05	0.10	0.15	0.00	1,947.16	1,947.16	0.08	0.00	1,948.78
Total	**1.81**	**9.34**	**14.14**	**0.06**	**3.74**	**0.34**	**4.08**	**0.08**	**0.31**	**0.39**	**0.00**	**4,825.17**	**4,825.17**	**0.12**	**0.00**	**4,827.58**

3.5 Building Construction - 2024

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	0.28	1.58	2.87	0.01		0.06	0.06		0.06	0.06	0.00	480.06	480.06	0.02	0.00	480.53
Total	**0.28**	**1.58**	**2.87**	**0.01**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.53**

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	0.00	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
Vendor	0.87	8.65	6.46	0.03	0.08	0.23	0.31	0.03	0.21	0.24	0.00	2,878.01	2,878.01	0.04	0.00	2,878.80
Worker	0.94	0.69	7.68	0.03	0.13	0.11	0.24	0.05	0.10	0.15	0.00	1,947.16	1,947.16	0.08	0.00	1,948.78
Total	**1.81**	**9.34**	**14.14**	**0.06**	**0.21**	**0.34**	**0.55**	**0.08**	**0.31**	**0.39**	**0.00**	**4,825.17**	**4,825.17**	**0.12**	**0.00**	**4,827.58**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.08	0.43	0.85	0.00		0.01	0.01		0.01	0.01	0.00	142.92	142.92	0.01	0.00	143.05
Total	**0.08**	**0.43**	**0.85**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**142.92**	**142.92**	**0.01**	**0.00**	**143.05**

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	0.00	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
Vendor	0.25	2.50	1.86	0.01	0.26	0.06	0.33	0.01	0.06	0.07	0.00	857.58	857.58	0.01	0.00	857.80
Worker	0.27	0.19	2.15	0.01	0.85	0.03	0.89	0.01	0.03	0.04	0.00	572.20	572.20	0.02	0.00	572.66
Total	**0.52**	**2.69**	**4.01**	**0.02**	**1.11**	**0.09**	**1.22**	**0.02**	**0.09**	**0.11**	**0.00**	**1,429.78**	**1,429.78**	**0.03**	**0.00**	**1,430.46**

3.5 Building Construction - 2025

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	0.08	0.43	0.85	0.00		0.01	0.01		0.01	0.01	0.00	142.92	142.92	0.01	0.00	143.05
Total	**0.08**	**0.43**	**0.85**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**142.92**	**142.92**	**0.01**	**0.00**	**143.05**

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	0.00	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
Vendor	0.25	2.50	1.86	0.01	0.02	0.06	0.09	0.01	0.06	0.07	0.00	857.58	857.58	0.01	0.00	857.80
Worker	0.27	0.19	2.15	0.01	0.04	0.03	0.07	0.01	0.03	0.04	0.00	572.20	572.20	0.02	0.00	572.66
Total	**0.52**	**2.69**	**4.01**	**0.02**	**0.06**	**0.09**	**0.16**	**0.02**	**0.09**	**0.11**	**0.00**	**1,429.78**	**1,429.78**	**0.03**	**0.00**	**1,430.46**

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.23	1.42	1.78	0.00		0.09	0.09		0.09	0.09	0.00	242.12	242.12	0.02	0.00	242.51
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.23**	**1.42**	**1.78**	**0.00**		**0.09**	**0.09**		**0.09**	**0.09**	**0.00**	**242.12**	**242.12**	**0.02**	**0.00**	**242.51**

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	0.00	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
Vendor	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
Worker	0.01	0.00	0.04	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	11.28	11.28	0.00	0.00	11.28
Total	**0.01**	**0.00**	**0.04**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**11.28**	**11.28**	**0.00**	**0.00**	**11.28**

3.6 Paving - 2025

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	0.23	1.42	1.78	0.00		0.09	0.09		0.09	0.09	0.00	242.12	242.12	0.02	0.00	242.51
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.23**	**1.42**	**1.78**	**0.00**		**0.09**	**0.09**		**0.09**	**0.09**	**0.00**	**242.12**	**242.12**	**0.02**	**0.00**	**242.51**

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	0.00	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
Vendor	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
Worker	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.28	11.28	0.00	0.00	11.28
Total	**0.01**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11.28**	**11.28**	**0.00**	**0.00**	**11.28**

3.6 Paving - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.05	0.29	0.36	0.00		0.02	0.02		0.02	0.02	0.00	48.95	48.95	0.00	0.00	49.03
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.05**	**0.29**	**0.36**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**48.95**	**48.95**	**0.00**	**0.00**	**49.03**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28	2.28	0.00	0.00	2.28
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.28**	**2.28**	**0.00**	**0.00**	**2.28**

3.6 Paving - 2026

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	0.05	0.29	0.36	0.00		0.02	0.02		0.02	0.02	0.00	48.95	48.95	0.00	0.00	49.03
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.05**	**0.29**	**0.36**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**48.95**	**48.95**	**0.00**	**0.00**	**49.03**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28	2.28	0.00	0.00	2.28
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.28**	**2.28**	**0.00**	**0.00**	**2.28**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	62.55					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.13	0.20	0.00		0.01	0.01		0.01	0.01	0.00	28.05	28.05	0.00	0.00	28.08
Total	**62.57**	**0.13**	**0.20**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**28.05**	**28.05**	**0.00**	**0.00**	**28.08**

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	0.00	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
Vendor	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
Worker	0.15	0.11	1.21	0.00	0.48	0.02	0.50	0.01	0.02	0.03	0.00	322.60	322.60	0.01	0.00	322.86
Total	**0.15**	**0.11**	**1.21**	**0.00**	**0.48**	**0.02**	**0.50**	**0.01**	**0.02**	**0.03**	**0.00**	**322.60**	**322.60**	**0.01**	**0.00**	**322.86**

3.7 Architectural Coating - 2026

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	62.55					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.13	0.20	0.00		0.01	0.01		0.01	0.01	0.00	28.05	28.05	0.00	0.00	28.08
Total	**62.57**	**0.13**	**0.20**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**28.05**	**28.05**	**0.00**	**0.00**	**28.08**

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	0.00	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
Vendor	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
Worker	0.15	0.11	1.21	0.00	0.02	0.02	0.04	0.01	0.02	0.03	0.00	322.60	322.60	0.01	0.00	322.86
Total	**0.15**	**0.11**	**1.21**	**0.00**	**0.02**	**0.02**	**0.04**	**0.01**	**0.02**	**0.03**	**0.00**	**322.60**	**322.60**	**0.01**	**0.00**	**322.86**

4.0 Mobile Detail

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	19.44	28.63	149.19	0.56	54.64	2.39	57.03	0.93	2.09	3.02	0.00	37,777.89	37,777.89	1.24	0.00	37,803.83
Unmitigated	19.44	28.63	149.19	0.56	54.64	2.39	57.03	0.93	2.09	3.02	0.00	37,777.89	37,777.89	1.24	0.00	37,803.83
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	3,973.25	752.47	387.63	8,761,179	8,761,179
General Office Building	13,234.02	2,848.74	1177.96	23,964,714	23,964,714
Office Park	26,859.84	3,857.28	1787.52	50,104,898	50,104,898
Research & Development	8,904.78	2,086.20	1218.78	17,124,429	17,124,429
Strip Mall	8,021.92	7,609.24	3697.83	11,311,910	11,311,910
Total	60,993.81	17,153.93	8,269.72	111,267,130	111,267,130

4.3 Trip Type Information

	Miles			Trip %		
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
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00
Office Park	9.50	7.30	7.30	33.00	48.00	19.00
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00

5.0 Energy Detail

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						0.00	0.00		0.00	0.00	0.00	12,089.77	12,089.77	1.21	0.46	12,257.31
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	12,089.77	12,089.77	1.21	0.46	12,257.31
NaturalGas Mitigated	0.64	5.84	4.91	0.04		0.00	0.44		0.00	0.44	0.00	6,357.32	6,357.32	0.12	0.12	6,396.01
NaturalGas Unmitigated	0.64	5.84	4.91	0.04		0.00	0.44		0.00	0.44	0.00	6,357.32	6,357.32	0.12	0.12	6,396.01
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	tons/yr										MT/yr					
General Light Industry	1.5625e+007	0.08	0.77	0.64	0.00		0.00	0.06		0.00	0.06	0.00	833.81	833.81	0.02	0.02	838.88
General Office Building	2.06984e+007	0.11	1.01	0.85	0.01		0.00	0.08		0.00	0.08	0.00	1,104.55	1,104.55	0.02	0.02	1,111.27
Office Park	5.22614e+007	0.28	2.56	2.15	0.02		0.00	0.19		0.00	0.19	0.00	2,788.87	2,788.87	0.05	0.05	2,805.84
Research & Development	3.00962e+007	0.16	1.48	1.24	0.01		0.00	0.11		0.00	0.11	0.00	1,606.05	1,606.05	0.03	0.03	1,615.82
Strip Mall	450690	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00	0.00	24.05	24.05	0.00	0.00	24.20
Total		**0.63**	**5.84**	**4.90**	**0.04**		**0.00**	**0.44**		**0.00**	**0.44**	**0.00**	**6,357.33**	**6,357.33**	**0.12**	**0.12**	**6,396.01**

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	tons/yr										MT/yr					
General Light Industry	1.5625e+007	0.08	0.77	0.64	0.00		0.00	0.06		0.00	0.06	0.00	833.81	833.81	0.02	0.02	838.88
General Office Building	2.06984e+007	0.11	1.01	0.85	0.01		0.00	0.08		0.00	0.08	0.00	1,104.55	1,104.55	0.02	0.02	1,111.27
Office Park	5.22614e+007	0.28	2.56	2.15	0.02		0.00	0.19		0.00	0.19	0.00	2,788.87	2,788.87	0.05	0.05	2,805.84
Research & Development	3.00962e+007	0.16	1.48	1.24	0.01		0.00	0.11		0.00	0.11	0.00	1,606.05	1,606.05	0.03	0.03	1,615.82
Strip Mall	450690	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00	0.00	24.05	24.05	0.00	0.00	24.20
Total		**0.63**	**5.84**	**4.90**	**0.04**		**0.00**	**0.44**		**0.00**	**0.44**	**0.00**	**6,357.33**	**6,357.33**	**0.12**	**0.12**	**6,396.01**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	5.14752e+006					677.11	0.07	0.03	686.50
General Office Building	2.36914e+007					3,116.41	0.31	0.12	3,159.60
Office Park	5.10384e+007					6,713.68	0.67	0.25	6,806.72
Research & Development	9.91494e+006					1,304.23	0.13	0.05	1,322.30
Strip Mall	2.11589e+006					278.33	0.03	0.01	282.19
Total						**12,089.76**	**1.21**	**0.46**	**12,257.31**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	5.14752e+006					677.11	0.07	0.03	686.50
General Office Building	2.36914e+007					3,116.41	0.31	0.12	3,159.60
Office Park	5.10384e+007					6,713.68	0.67	0.25	6,806.72
Research & Development	9.91494e+006					1,304.23	0.13	0.05	1,322.30
Strip Mall	2.11589e+006					278.33	0.03	0.01	282.19
Total						**12,089.76**	**1.21**	**0.46**	**12,257.31**

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	27.36	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
Unmitigated	27.36	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	6.26					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	21.10					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**27.36**	**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**

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	6.26					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	21.10					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**27.36**	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					1,112.55	39.40	1.02	2,254.82
Unmitigated					1,112.55	39.40	1.02	2,254.82
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

<u>Unmitigated</u>

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	102.099 / 0					73.82	3.12	0.08	164.23
General Office Building	213.636 / 130.938					214.74	6.54	0.17	404.76
Office Park	418.03 / 256.212					420.19	12.80	0.33	792.01
Research & Development	539.88 / 0					390.33	16.52	0.42	868.42
Strip Mall	13.4071 / 8.21727					13.48	0.41	0.01	25.40
Total						**1,112.56**	**39.39**	**1.01**	**2,254.82**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	102.099 / 0					73.82	3.12	0.08	164.23
General Office Building	213.636 / 130.938					214.74	6.54	0.17	404.76
Office Park	418.03 / 256.212					420.19	12.80	0.33	792.01
Research & Development	539.88 / 0					390.33	16.52	0.42	868.42
Strip Mall	13.4071 / 8.21727					13.48	0.41	0.01	25.40
Total						**1,112.56**	**39.39**	**1.01**	**2,254.82**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					1,736.27	102.61	0.00	3,891.09
Unmitigated					1,736.27	102.61	0.00	3,891.09
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	4974.71					1,009.82	59.68	0.00	2,263.07
General Office Building	1117.86					226.92	13.41	0.00	508.53
Office Park	2187.36					444.01	26.24	0.00	995.06
Research & Development	83.44					16.94	1.00	0.00	37.96
Strip Mall	190.05					38.58	2.28	0.00	86.46
Total						**1,736.27**	**102.61**	**0.00**	**3,891.08**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	4974.71					1,009.82	59.68	0.00	2,263.07
General Office Building	1117.86					226.92	13.41	0.00	508.53
Office Park	2187.36					444.01	26.24	0.00	995.06
Research & Development	83.44					16.94	1.00	0.00	37.96
Strip Mall	190.05					38.58	2.28	0.00	86.46
Total						**1,736.27**	**102.61**	**0.00**	**3,891.08**

9.0 Vegetation

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons				MT			
Unmitigated					-1,749.86	0.00	0.00	-1,749.86
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

9.1 Vegetation Land Change

Vegetation Type

	Initial/Final	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	Acres	tons				MT			
Grassland	406 / 0					-1,749.86	0.00	0.00	-1,749.86
Total						**-1,749.86**	**0.00**	**0.00**	**-1,749.86**

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons				MT			
Unmitigated					-1,749.86	0.00	0.00	-1,749.86
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

9.1 Vegetation Land Change

Vegetation Type

	Initial/Final	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	Acres	tons				MT			
Grassland	406 / 0					-1,749.86	0.00	0.00	-1,749.86
Total						**-1,749.86**	**0.00**	**0.00**	**-1,749.86**

APPENDIX H

Health Risk Assessment

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SAN JOSE/SANTA CLARA WATER POLLUTION CONTROL PLANT MASTER PLAN
Health Risk Assessment - Diesel Particulate Matter Calculations

Diesel Particulate Matter **Construction**

Highest annual concentration	0.150	µg/m^3	Based on unit emissions
Annual emissions	0.212	tons/year	
ISC Emissions Input	0.025	g/s	

Cancer Risk Computation

Resident Child

Dose = (Cair * DBR * EF * ED * CF) / AT

Cair	0.004	µg/m^3
DBR	581	L/kg
EF	350	days/year
ED	24.0	year
CF	0.000001	
AT	25550	days

Dose	7.25E-07

Cancer Risk = (Dose * CRAF * Cancer Potency Factor)

Dose	7.25E-07	mg/kg-day
CRAF	10.0	
CPF	1.1	mg/kg-day-1

Cancer Risk	7.97E-06

Resident Adult

Dose = (Cair * DBR * EF * ED * CF) / AT

Cair	0.004	µg/m^3
DBR	302	L/kg
EF	350	days/year
ED	24.0	year
CF	0.000001	
AT	25550	days

Dose	3.77E-07

Cancer Risk = (Dose * CRAF * Cancer Potency Factor)

Dose	3.77E-07	mg/kg-day
CRAF	1.7	
CPF	1.1	mg/kg-day-1

Cancer Risk	7.04E-07

Student

Dose = (Cair * DBR * EF * ED * CF) / AT

Maximum annual concentration	0.050	µg/m^3	Based on unit emissions
Annual emissions	0.212	tons/year	
ISC Emissions Input	0.025	g/s	

Cair	0.001	µg/m^3
DBR	581	L/kg
EF	180	days/year
ED	24.0	year
CF	0.000001	
AT	25550	days

Dose	1.24E-07

Cancer Risk = (Dose * CRAF * Cancer Potency Factor)

Dose	1.24E-07	mg/kg-day
CRAF	3	
CPF	1.1	mg/kg-day-1

Cancer Risk	4.10E-07

Child - Daycare

Maximum annual concentration	0.070	µg/m^3	Based on unit emissions
Annual emissions	0.212	tons/year	
ISC Emissions Input	0.025	g/s	

SAN JOSE/SANTA CLARA WATER POLLUTION CONTROL PLANT MASTER PLAN
Health Risk Assessment - Diesel Particulate Matter Calculations

Dose = (Cair * DBR * EF * ED * CF) / AT

Cair	0.002	µg/m^3
DBR	581	L/kg
EF	245	days/year
ED	24.0	year
CF	0.000001	
AT	25550	days

Dose	2.37E-07

Cancer Risk = (Dose * CRAF * Cancer Potency Factor)

Dose	2.37E-07	mg/kg-day
CRAF	10	
CPF	1.1	mg/kg-day-1

Cancer Risk	2.60E-06

Hazard Index Computation

Resident Adult and Child
Chronic hazard index
Inhalation chronic risk = Cair / Inhalation Chronic REL

Cair	0.004	µg/m^3
REL	5	µg/m^3
Chronic hazard index	0.001	

Student
Chronic hazard index
Inhalation chronic risk = Cair / Inhalation Chronic REL

Cair	0.001	µg/m^3
REL	5	µg/m^3
Chronic hazard index	0.0003	

Child - Daycare
Chronic hazard index
Inhalation chronic risk = Cair / Inhalation Chronic REL

Cair	0.002	µg/m^3
REL	5	µg/m^3
Chronic hazard index	0.0004	

Fine Particulate Matter

Construction
Resident Adult and Child

Highest annual concentration	0.150	µg/m^3	Based on unit emissions
Annual emissions	0.192	tons/year	
ISC Emissions Input	0.023	g/s	
PM2.5 concentration	0.003	µg/m^3	

Student

Highest annual concentration	0.050	µg/m^3	Based on unit emissions
Annual emissions	0.192	tons/year	
ISC Emissions Input	0.023	g/s	
PM2.5 concentration	0.001	µg/m^3	

Child Daycare

Highest annual concentration	0.070	µg/m^3	Based on unit emissions
Annual emissions	0.192	tons/year	
ISC Emissions Input	0.023	g/s	
PM2.5 concentration	0.002	µg/m^3	

Acute Risks - Construction
Based on TOG Speciation (EPA SPECIATE Profile #3161

TOG Emissions	0.619	tons/year

Resident Adult and Child

Maximum 1-hour concentration	15.860	μg/m^3	Based on unit emissions
ISC Emissions Input	0.074	g/s	
Adjusted concentration 1-hour	1.171	μg/m^3	

TOG Speciation

Compound	Weight %	Acute REL	Conc	Acute HI
Benzene	2	1300	0.023	1.80E-05
Formaldehyde	14.71	55	0.172	3.13E-03
Methyl alcohol	0.03	28000	0.000	1.26E-08
Methyl ethyl ketone	1.48	13000	0.017	1.33E-06
Styrene	0.06	21000	0.001	3.35E-08
Toluene	1.47	37000	0.017	4.65E-07
M-Xylene	0.61	22000	0.007	3.25E-07
O-Xylene	0.34	22000	0.004	1.81E-07
P-Xylene	0.1	22000	0.001	5.32E-08
				0.0032

Student

Maximum 1-hour concentration	4.470	μg/m^3	Based on unit emissions
ISC Emissions Input	0.074	g/s	
Adjusted concentration 1-hour	0.330	μg/m^3	

TOG Speciation

Compound	Weight %	Acute REL	Conc	Acute HI
Benzene	2	1300	0.007	5.08E-06
Formaldehyde	14.71	55	0.049	8.83E-04
Methyl alcohol	0.03	28000	0.000	3.54E-09
Methyl ethyl ketone	1.48	13000	0.005	3.76E-07
Styrene	0.06	21000	0.000	9.43E-09
Toluene	1.47	37000	0.005	1.31E-07
M-Xylene	0.61	22000	0.002	9.15E-08
O-Xylene	0.34	22000	0.001	5.10E-08
P-Xylene	0.1	22000	0.000	1.50E-08
				0.0009

Daycare Child

Maximum 1-hour concentration	5.420	μg/m^3	Based on unit emissions
ISC Emissions Input	0.074	g/s	
Adjusted concentration 1-hour	0.400	μg/m^3	

TOG Speciation

Compound	Weight %	Acute REL	Conc	Acute HI
Benzene	2	1300	0.008	6.16E-06
Formaldehyde	14.71	55	0.059	1.07E-03
Methyl alcohol	0.03	28000	0.000	4.29E-09
Methyl ethyl ketone	1.48	13000	0.006	4.56E-07
Styrene	0.06	21000	0.000	1.14E-08
Toluene	1.47	37000	0.006	1.59E-07
M-Xylene	0.61	22000	0.002	1.11E-07
O-Xylene	0.34	22000	0.001	6.19E-08
P-Xylene	0.1	22000	0.000	1.82E-08
				0.0011

APPENDIX I

Greenhouse Gas Emissions Estimates

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Introduction

Construction- and operation-related greenhouse gas (GHG) emissions that would be associated with the project-level Water Pollution Control Plant (WPCP) improvements have been quantified using the methods described below.

Construction Emission Estimates

Total construction emissions associated with the project-level WPCP improvements were estimated using project-specific information identified by Carollo Engineers. For each of the improvements, Carollo Engineers provided the following information:

1. A list of the types of off-road construction equipment to be used;
2. The number of pieces of each type of off-road equipment;
3. The number of on-road vehicle trips (for both construction workers and haul truck deliveries) per day (see Section 1.3, Project-Level Round Trips);
4. Daily equipment usage rates in terms of hours per day and total days for each piece of off-road equipment (see Section 1.2, Project-Level Equipment Hours);
5. The horse-power (hp) rating for each type of off-road equipment used; and
6. Daily water use rates for the indirect emissions estimate.

This appendix contains the direct and indirect emissions estimate calculations and all of the assumptions used to estimate the construction-phase GHG emissions that would be associated with the project-level WPCP improvements. Section I.1, Summary of Total Emissions (Metric Tons) contains a summary of total estimated construction-related GHG emissions.

Off-Road Equipment Emissions

The combustion of diesel fuel to provide power for the operation of various equipment results in the generation of GHGs. Off-road construction equipment diesel fuel consumption rates for each of the improvements were generated for Santa Clara County using California Air Resources Board (CARB)'s Offroad 2011 emissions inventory database model. The fuel consumption rates for the WPCP improvements are based on the estimated year that construction activities would commence for each of the improvements (see Section I.8, Off-Road Fuel Use Factors). GHG emissions for off-road construction equipment were estimated by multiplying the total diesel fuel consumed by each piece of equipment by carbon dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4) emission factors obtained from The Climate Registry[1] (TCR) for diesel fuel combustion. N_2O and CH_4 emissions were multiplied by their respective global warming potentials and added to the CO_2 emissions to obtain CO_2 equivalent (CO_2e) emissions. Off-road equipment exhaust emissions were estimated using the following equation:

[1] The Climate Registry. Table 13.1 US Default CO_2 Emission Factors for Transport Fuels, 2011. Available: http://www.theclimateregistry.org/downloads/2009/05/2011-Emission-Factors.pdf.

$$E_{CO2e,i,j} = (EF_{CO2} \times FC_{i,j} \times H_{i,j}) + (EF_{N20} \times FC_{i,j} \times H_{i,j} \times GWP_{N20}) + (EF_{CH4} \times FC_{i,j} \times H_{i,j} \times GWP_{CH4})$$
(Equation 1)

Where:

$E_{CO2e,i,j}$ = Total CO_2e emissions for equipment type i during WPCP improvement j;

EF_{CO2} = Emission factor for CO_2;

$FC_{i,j}$ = Fuel consumption rate for equipment type i during WPCP improvement j.

$H_{i,j}$ = Total hours of operating time for equipment type i during WPCP improvement j.

EF_{N2O} = Emission factor for N_2O;

GWP_{N20} = Global warming potential for N_2O (310);

EF_{CH4}= Emission factor for CH_4; and

GWP_{CH4} = Global warming potential for CH_4 (21).

The total CO_2e emissions for all the equipment types are then added for each WPCP improvement to obtain the total off-road equipment CO_2e emissions for each of the project-level WPCP improvements. See Section I.6, Construction Equipment Emission Factors and Fuel Consumption Rates per Calendar Year, and Section I.7, On-Site Construction Exhaust Emissions, for the off-road equipment construction emissions assumptions and estimates for each of the project-level WPCP improvements.

Motor Vehicle Emissions

GHG emissions from motor vehicles used during construction were estimated using emission factors obtained from the EMFAC2011 emissions model and The Climate Registry (TCR). Since the EMFAC2011 model provides GHG emission factors only for CO_2 emissions, N_2O and CH_4 emission factors for gasoline and diesel combustion were obtained from TCR[2]. GHG emissions in the form of CO_2e were calculated by multiplying the estimated total miles travelled by project-related worker vehicles and haul trucks by the GHG emission factors, then multiplying the N_2O and CH_4 emissions by their respective global warming potential, and then adding the CO_2, N_2O, and CH_4 emissions. Daily trip amounts and the WPCP improvement durations were obtained from Carollo Engineers (see Appendix C). The exact end points for the daily trips are not known at this time; the on-road emissions were estimated using the assumption that each worker trip would be 40 miles round trip and each material haul trip would be 10 miles round trip. On-road vehicle exhaust emissions were estimated using the following equation:

2 Ibid.

$E_{CO2e,i,k}$ = $(EF_{CO2,i,k} \times M_{j,k}) + (EF_{N2O} \times M_{j,k} \times GWP_{N20}) + (EF_{CH4} \times M_{j,k} \times GWP_{CH4})$ (Equation 2)

Where:

$E_{CO2e,i,k}$ = Total CO_2e emissions for vehicle type i during WPCP improvement k;

$EF_{CO2,i,k}$ = Emission factor (grams/mile) for CO_2 for vehicle type i during WPCP improvement k;

$M_{i,k}$ = Total miles traveled for vehicle type i during WPCP improvement k

EF_{N2O} = Emission factor (grams/mile) for N_2O;

GWP_{N20} = Global warming potential for N_2O (310);

EF_{CH4} = Emission factor (grams/mile) for CH_4; and

GWP_{CH4} = Global warming potential for CH_4 (21).

The total CO_2e emissions for each of the vehicle types are then added for each WPCP improvement to obtain the total on-road equipment CO_2e emissions for each of the project-level WPCP improvement. See Section I.4, On-Road Emission Factors per Calendar Year, and Section I.5, Construction Off-Site Emissions, for the on-road vehicle construction emissions assumptions and estimates for each of the project-level WPCP improvements.

Indirect Emissions

Indirect GHG emissions would result from water use for dust control and other construction activities associated with construction of the improvements. These emissions were estimated using daily water use information identified by Carollo Engineers (see Appendix C) for each of the WPCP improvements, electricity consumption rates for water use obtained from the California Energy Commissions (CEC)[3], and CO_2 emission factors for electricity use specific for Pacific Gas and Electric Company (PG&E)'s electrical energy production portfolio for the given calendar year of each of the improvements[4]. N_2O and CH_4 emission factors for electricity were obtained from TCR[5].

GHG emissions in the form of CO_2e were calculated by multiplying the N_2O and CH_4 emissions by their respective global warming potential, and then adding the CO_2, N_2O, and CH_4 emissions. As identified in Appendix C, approximately 91 million gallons of water would be required for the project-level WPCP improvements, and based on CEC use factors, an estimated 1,450 kilowatt-

3 California Energy Commission, *California's Water – Energy Relationship*, Prepared in Support of the 2005 Integrated Energy Policy Report Proceeding, Final Staff Report, November 2005 (CEC-700-2005-011-SF) Table C-6, page 118;

4 Pacific Gas and Electric Company, Greenhouse Gas Emission Factors Info Sheet, last revised April 8, 2011, Available: (http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf, accessed September 21, 2012.

5 The Climate Registry. Table 13.1 US Default CO_2 Emission Factors for Transport Fuels, 2011. Available: http://www.theclimateregistry.org/downloads/2009/05/2011-Emission-Factors.pdf.

hours (kWh) of electricity would be required for every one million gallons of water used[6]. Construction-related indirect emissions associated with electricity for water use were estimated using the following equation:

$$IEW_{CO2e,i} = (W_i \times EW \times IEEF_{CO2} \times El_i) + (W_i \times EW \times IEEF_{N2O} \times El_i \times GWP_{N20}) + (W_i \times EW \times IEEF_{CH4} \times El_i \times GWP_{CH4}) \qquad \text{(Equation 3)}$$

Where:

$IEW_{CO2e,i}$ = Total water-related indirect electricity CO_2e emissions for WPCP improvement i;

Wi = Total water usage (million gallons) for WPCP improvement i;

EW = Electricity water use factor (1.45 megawatt-hours/million gallons);

$IEEF_{CO2}$ = Indirect electricity emission factor (pounds/megawatt-hour) for CO_2;

El_i = Total annual electricity usage (megawatt-hours) for WPCP improvement i;

$IEEF_{N2O}$ = Indirect electricity emission factor (pounds/megawatt-hour) for N_2O;

GWP_{N20} = Global warming potential for N_2O (310);

$IEEF_{CH4}$ = Indirect electricity emission factor (pounds/megawatt-hour) for CH_4; and

GWP_{CH4} = Global warming potential for CH_4 (21).

The total construction water-related indirect CO_2e emissions for the project were estimated by combining the water-related indirect emissions for each of the WPCP improvements. See Section I.10, Indirect Emissions, for the indirect water-related electrical use emissions assumptions and estimates for each of the project-level WPCP improvements.

Operation Emission Estimates

Motor Vehicle Emissions

The GHG emissions from motor vehicles used during operations were estimated using the same methodology described above for GHG emissions from construction phase motor vehicles. Emissions that would be associated with commuting workers, material hauling, and deliveries were estimated using the EMFAC2011emission factors for light-duty gasoline-fueled trucks and heavy-duty (T7) diesel-fueled trucks multiplied by the estimated long-term operation and maintenance-related employee vehicle trips per year (up to 35 round trips each day for 365 days per year) and the estimated additional haul truck trips (up to four round trips each day for 365 days per year) that would be associated with the project. For a conservative analysis, all

[6] California Energy Commission, *California's Water – Energy Relationship*, Prepared in Support of the 2005 Integrated Energy Policy Report Proceeding, Final Staff Report, November 2005 (CEC-700-2005-011-SF) Table C-6, page 118.

WPCP improvements are assumed to be operational by 2017; therefore, EMFAC2011 vehicle emission factors for calendar year 2017 were used to estimate operation-related vehicle exhaust. The analysis also assumes that each employee vehicle round trip would be 25 miles and each haul truck round trip would consist of 50 miles. The on-road vehicle GHG emissions were estimated using Equation 2 (see above). See Section I.9, Operation On-Road and Gas Emissions Estimates, for the on-road vehicle operation GHG emissions estimated for each of the project-level WPCP improvements.

Gas Combustion Emissions

GHG emissions from natural gas use during operations were estimated using GHG natural gas combustion emission factors for CO_2, N_2O, and CH_4 obtained from U.S. Environmental Protection Agency (U.S. EPA)'s AP-42 emissions document[7]. GHG emissions in the form of CO_2e were calculated by multiplying the emission factors by the estimated total million British thermal units (MMBtu) provided by Carollo Engineers that would be associated with the WPCP improvements, multiplying the N_2O and CH_4 emissions by their respective global warming potential, and then adding the CO_2, N_2O, and CH_4 emissions. Data provided by Carollo Engineers indicates that improvements B2-P1 – Dewatering Phase 1 and B4-P1 – Thermal Drying Phase 1 would require blended gas to generate 1,800 MMBtu and 86,250 MMBtu, respectively.

Based on the current blend of natural gas, digester gas, and landfill gas that is used at the WPCP, it is assumed that approximately 25 percent of the total gas requirements would be in the form of natural gas,[8] which is considered to be anthropogenic, and the associated combustion emissions should be included in the emission estimates for the project. Emissions related to combustion of digester and landfill gases are considered to be biogenic, and should not be included in the project emissions estimate; although these emissions are disclosed for informational purposes.

Natural gas combustion emissions were estimated using the following equation:

$$E_{CO2e,k,NG} = (EF_{CO2,NG} \times FI_{k,NG}) + (EF_{N2O,NG} \times FI_{k,NG} \times GWP_{N20}) + (EF_{CH4,NG} \times FI_{k,NG} \times GWP_{CH4})$$
(Equation 4)

Where:

$E_{CO2e,k,NG}$ = Emissions of CO_2e from combustion of natural gas associated with WPCP improvement k;

$EF_{CO2,NG}$ = CO_2 emission factor (pounds/MMBtu) for natural gas;

$FI_{k,NG}$ = Natural Gas Fuel Input (MMBtu) for WPCP improvement k. Natural gas fuel input is assumed to be 25% of the blended gas;

$EF_{N2O,NG}$ = N_2O emission factor (pounds/MMBtu) for natural gas;

GWP_{N20} = Global warming potential for N_2O (310);

[7] U.S. Environmental Protection Agency, AP-42, Section 3.1, Stationary Gas Turbines, Table 3.1-2a.
[8] Carollo Engineers, 2011. Task No. 5, Project Memorandum No. 3, Energy Evaluation, Final Draft, August 2011.

$EF_{CH4,NG}$ = CH_4 emission factor (pounds/MMBtu) for natural gas; and

GWP_{CH4} = Global warming potential for CH_4 (21).

The total CO_2e natural gas combustion emissions for the project were estimated by combining the natural gas combustion emissions for each of the applicable WPCP improvements. See Section I.9, Operation On-Road and Gas Emissions Estimates, for the natural gas assumptions and combustion emissions estimates for the applicable project-level WPCP improvements.

Blended gas combustion emissions (for informational purposes only) were estimated using the following equation:

$E_{CO2e,k,BG1}$ = $(EF_{CO2,BG1} \times FI_{k,BG1}) + (EF_{N2O,BG1} \times FI_{k,BG1} \times GWP_{N20}) + (EF_{CH4,BG1} \times FI_{k,BG1} \times GWP_{CH4})$ (Equation 5)

Where:

$E_{CO2e,k,BG1}$ = Emissions of CO_2e from combustion of BG1 blended fuel gas (i.e., 25% natural gas, 41% landfill gas, and 34% digester gas) associated with WPCP improvement k;

$EF_{CO2,BG1}$ = CO_2 emission factor (pounds/MMBtu) for BG1 blended fuel gas, where:

$EF_{CO2,BG1} = (EF_{CO2,NG} \times 0.25) + (EF_{CO2,LFG} \times 0.41) + (EF_{CO2,DG} \times 0.34)$, where:

$EF_{CO2,NG}$ = Natural gas emission factor for CO_2;

$EF_{CO2,LFG}$ = Landfill gas emission factor for CO_2; and

$EF_{CO2,DG}$ = Digester gas emission factor for CO_2;

$FI_{k,BG1}$ = Blended gas fuel Input (MMBtu) for WPCP improvement k

$EF_{N20,BG1}$ = N_2O emission factor (pounds/MMBtu) for BG1 blended fuel gas, where:

$EF_{N2O,BG1} = (EF_{N2O,NG} \times 0.25) + (EF_{N2O,LFG} \times 0.41) + (EF_{N2O,DG} \times 0.34)$, where:

$EF_{N2O,NG}$ = Natural gas emission factor for N_2O;

$EF_{N2O,LFG}$ = Landfill gas emission factor for N_2O; and

$EF_{N2O,DG}$ = Digester gas emission factor for N_2O.

GWP_{N20} = Global warming potential for N_2O (310);

$EF_{CH4,BG1}$ = CH_4 emission factor (pounds/MMBtu) for BG1 blended fuel gas, where:

$EF_{CH4,BG1} = (EF_{CH4,NG} \times 0.25) + (EF_{CH4,LFG} \times 0.41) + (EF_{CH4,DG} \times 0.34)$, where:

$EF_{CH4,NG}$ = Natural gas emission factor for CH_4;

$EF_{CH4,LFG}$ = Landfill gas emission factor for CH_4; and

$EF_{CH4,DG}$ = Digester gas emission factor for CH_4; and

GWP_{CH4} = Global warming potential for CH_4 (21).

The total CO_2e blended gas combustion emissions for the project were estimated by combining the blended gas combustion emissions for each of the WPCP improvements. See Section I.9, Operation On-Road and Gas Emissions Estimates, for the blended gas assumptions and estimates for the applicable project-level WPCP improvements.

Indirect Electricity Grid Emissions

Indirect GHG emissions that would be generated by WPCP improvements' use of electricity from Pacific Gas and Electric (PG&E)'s electrical grid were estimated using an emission factor of 349 pounds of CO_2 per megawatt-hour. PG&E developed this emission factor for its estimated energy production portfolio in 2017[9]. N_2O and CH_4 emission factors for electricity were obtained from TCR[10]. GHG emissions in the form of CO_2e were calculated by multiplying the N_2O and CH_4 emissions by their respective global warming potential, and then adding the CO_2, N_2O, and CH_4 emissions. Based on information provided by Carollo Engineers, project-level WPCP improvements would have a total net increase in electricity demand over baseline conditions of approximately 10,375 megawatt-hours annually.[11] Operational indirect emissions associated with electricity usage were estimated using the following equation:

$$IEE_{CO2e,i} = (IEEF_{CO2} \times El_i) + (IEEF_{N2O} \times El_i \times GWP_{N20}) + (IEEF_{CH4} \times El_i \times GWP_{CH4})$$
(Equation 6)

Where:

$IEE_{CO2e,i}$ = Total indirect electricity CO_2e emissions for WPCP improvement i;

$IEEF_{CO2}$ = Indirect electricity emission factor (pounds/megawatt-hour) for CO_2;

El_i = Total annual electricity usage (megawatt-hours) for WPCP improvement i;

$IEEF_{N2O}$ = Indirect electricity emission factor (pounds/megawatt-hour) for N_2O;

GWP_{N20} = Global warming potential for N_2O (310);

$IEEF_{CH4}$ = Indirect electricity emission factor (pounds/megawatt-hour) for CH_4; and

GWP_{CH4} = Global warming potential for CH_4 (21).

9 Pacific Gas and Electric Company, Greenhouse Gas Emission Factors Info Sheet, last revised April 8, 2011, Available: (http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf, accessed September 21, 2012.

10 The Climate Registry, Table 13.1 US Default CO_2 Emission Factors for Transport Fuels, 2011. Available: http://www.theclimateregistry.org/downloads/2009/05/2011-Emission-Factors.pdf.

11 Carollo Engineers, 2011. Responses to requested information, November and December 2011.

The total operational indirect CO_2e emissions for the project were estimated by combining the indirect emissions for each of the WPCP improvements. See Section I.10, Indirect Emissions, for the electrical use assumptions and indirect emission estimates for each of the project-level WPCP improvements.

I.1 SUMMARY OF TOTAL EMISSIONS (METRIC TONS)

Summary of Direct Construction Emissions

	CO2e (metric tons)		
Source	On-site	Off-site	Total
H1 - Headworks Odor Control	64.46	41.13	105.60
P1 - Primary Treatment Odor Control	74.66	46.05	120.71
P2 - Equalization Basin	452.43	993.23	1,445.66
B2-P1 - Dewatering Phase 1 - Sludge Dewatering	42.32	27.36	69.69
B2-P1 - Dewatering Phase 1 - Full Mechanical Dewatering Facility	115.29	286.56	401.85
B2-P1 - Dewatering Phase 1 - Cake Storage	50.99	140.14	191.13
B2-P1 - Dewatering Phase 1 - Side-Stream Nitrogen Removal	144.73	240.18	384.91
B2-P1 - Dewatering Phase 1 - Double-Ended Substation	65.63	43.85	109.48
B3-P1 - Covered Lagoons Phase 1	1,643.32	1,185.60	2,828.93
B4-P1 - Thermal Drying Phase 1	73.11	214.92	288.03
B5-P1 - Greenhouse Drying Phase 1	100.44	77.58	178.03
B6 - Back-up Sludge Pipeline	22.34	151.15	173.49
E2 - Digester Gas Storage	113.81	49.23	163.04
SF1-P1-100 - Landscaping and Road Repairs Phase 1	385.50	123.11	508.61
SF2 108 - Warehouse	10.99	63.26	74.24
Total	3,360.03	3,683.37	7,043.40

Summary of Total Construction Emissions

Source	CO2 (metric tons)
Direct Exhaust Emissions (off-site vehicles and on-site equipment)	7,043.4
Indirect Emissions - Water Usage	24.1
Total	7,067.5
Amortized Total (30 years)	235.6

Summary of Total Operation Emissions

Source	CO2 (metric tons)
Off-site Vehicle Emissions	227.1
On-site Natural Gas Emissions	1,109.4
Indirect Electrical Grid Emissions	1,654.2
Total Long-term Operation Emissions	2,990.7

I.2 PROJECT-LEVEL EQUIPMENT HOURS

H1 - Headworks Odor Control (Year 2015)

	Excavation				Foundation - Rebar				Backfilling/Paving				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	5	6	30													30
Jackhammers									1	3	6	18					18
Roller									1	2	6	12					12
Paving equipment									1	1	3	3					3
Dozer/Loader									1	3	6	18					18
Graders									1	2	6	12					12
Cranes					1	21	6	128					1	128	6	770	899
Forklifts					1	21	6	128					1	128	6	770	899
On-site Hauling	2	5	6	60					3	3	6	54					114
Water Truck	1	5	2	10	1	21	2	42	1	3	2	6	1	128	1	128	186
Total days		5				21				4				128			158

P1 - Primary Treatment Odor Control (Year 2015)

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	4	6	24													24
Jackhammers									1	3	6	18					18
Roller									1	1	6	6					6
Paving equipment									1	1	3	3					3
Dozer/Loader									1	3	6	18					18
Graders									1	2	6	12					12
Cranes					1	21	6	128					1	128	6	770	899
Forklifts					1	21	6	128					1	128	6	770	899
On-site Hauling	2	4	6	48					2	3	7	42					90
Water Truck	1	4	2	8	1	21	2	42	1	3	2	6	1	128	1	128	184
Total days		4				21				3				128			156

I.2 PROJECT-LEVEL EQUIPMENT HOURS

P2 - Equalization Basin (Year 2013)

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	69	6	414													414
Jackhammers									3	61	6	1,098					1,098
Roller									1	63	6	378					378
Paving equipment									1	1	3	3					3
Dozer/Loader									4	73	6	1,752					1,752
Graders									2	58	6	696					696
Cranes					1	43	6	257									257
Forklifts					1	43	6	257									257
On-site Hauling	4	69	6	1,656					5	88	6	2,640					4,296
Water Truck	1	69	2	138	1	43	2	86	1	88	2	176					400
Total days		69				43				88							200

P2 - Equalization Basin Pipeline (Year 2013)

	Pipeline Unpaved				Pipeline Paved				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	10	6	60	1	8	6	48	108
Jackhammers									0
Roller									0
Paving equipment					1	8	3	24	24
Dozer/Loader	1	10	6	60	1	8	6	48	108
Graders									0
Cranes	1	10	3	30	1	8	3	24	54
Forklifts									0
On-site Hauling									0
Water Truck									0
Total Days		10				8			18

B2-P1 - Dewatering Phase 1 - Sludge Dewatering (Year 2016

I.2 PROJECT-LEVEL EQUIPMENT HOURS

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	5	6	30													30
Jackhammers									1	3	6	18					18
Roller									1	2	6	12					12
Paving equipment									1	1	3	3					3
Dozer/Loader									1	3	6	18					18
Graders									1	2	6	12					12
Cranes					1	21	6	128					1	64	6	385	514
Forklifts					1	21	6	128					1	64	6	385	514
On-site Hauling	2	5	6	60					3	3	6	54					114
Water Truck	1	5	2	10	1	21	2	42	1	3	2	6	1	64	1	64	122
Total days		5				21				3				64			93

B2-P1 - Dewatering Phase 1 - Full Mechanical Dewatering Facility (Year 2013

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	11	6	66													66
Jackhammers									1	10	10	100					100
Roller									1	5	6	30					30
Paving equipment									1	1	6	6					6
Dozer/Loader									1	13	6	78					78
Graders									1	10	6	60					60
Cranes					1	43	6	257					1	128	6	770	1,027
Forklifts					1	43	6	257					1	128	6	770	1,027
On-site Hauling	4	11	6	264					4	7	6	168					432
Water Truck	1	11	2	22	1	21	2		1	13	2	26	1	128	1	128	176
Total Days		11				43				13				128			195

I.2 PROJECT-LEVEL EQUIPMENT HOURS

B2-P1 - Dewatering Phase 1 - Full Mechanical Dewatering Facility Pipeline (Year 201:

	Pipeline Unpaved				Pipeline Paved				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	30	6	180	1	4	6	24	204
Jackhammers									0
Roller									0
Paving equipment					1	4	3	12	12
Dozer/Loader	1	30	6	180	1	4	6	24	204
Graders									0
Cranes	1	30	3	90	1	4	3	12	102
Forklifts									0
On-site Hauling									0
Water Truck									0
Total Days		30				4			34

B2-P1 - Dewatering Phase 1 - Cake Storage (Year 2015

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	5	6	30													30
Jackhammers									2	4	6	48					48
Roller									1	2	6	12					12
Paving equipment									1	1	3	3					3
Dozer/Loader									1	6	6	36					36
Graders									1	5	6	30					30
Cranes					1	21	6	128					1	64	6	385	514
Forklifts					1	21	6	128					1	64	6	385	514
On-site Hauling	4	5	6	120					3	5	6	90					210
Water Truck	1	5	2	10	1	21	2	42	1	6	2	12	1	64	1	64	128
Total days		5				21				6				64			96

B2-P1 - Dewatering Phase 1 - Side-Stream Nitrogen Removal (Year 2018

I.2 PROJECT-LEVEL EQUIPMENT HOURS

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	11	6	66													66
Jackhammers									2	5	6	60					60
Roller									1	7	6	42					42
Paving equipment									1	1	6	6					6
Dozer/Loader									1	14	6	84					84
Graders									1	7	6	42					42
Cranes		1		0	1	43	6	257					1	86	6	514	770
Forklifts		1		0	1	43	6	257					1	86	6	514	770
On-site Hauling	4	7	6	168					4	12	6	288					456
Water Truck	1	11	2	22	1	43	2	86	1	14	2	28	1	86	1	86	222
Total days		11				43				14				86			154

B2-P1 - Dewatering Phase 1 - Side-Stream Nitrogen Removal Pipeline (Year 2018

	Pipeline Unpaved				Pipeline Unpaved				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	36	6	216	1	19	6	111	327
Jackhammers									0
Roller									0
Paving equipmen					1	19	3	57	57
Dozer/Loade	1	36	6	216	1	19	6	111	327
Graders									0
Cranes	1	36	3	108	1	19	3	56	164
Forklifts									0
On-site Hauling									0
Water Truck									0
Total Days		36				19			55

I.2 PROJECT-LEVEL EQUIPMENT HOURS

B2-P1 - Dewatering Phase 1 - Double-Ended Substation (Year 2015

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	4	6	24													24
Jackhammers									1	3	6	18					18
Roller									1	1	6	6					6
Paving equipment									1	1	3	3					3
Dozer/Loader									1	3	6	18					18
Graders									1	2	6	12					12
Cranes					1	21	6	128					1	128	6	770	899
Forklifts					1	21	6	128					1	128	6	770	899
On-site Hauling	3	3	6	54					3	3	6	54					108
Water Truck	1	4	2	8	1	21	2	43	1	3	2	6	1	128	1	128	233
Total days		4				21				3				128			156

B3-P1 - Covered Lagoons Phase 1 (Year 2015

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	2	108	6	1,296													1,296
Jackhammers									12	207	6	14,904					14,904
Roller									1	156	6	936					936
Paving equipment									1	68	6	408					408
Dozer/Loader									3	145	6	2,610					2,610
Graders									5	150	6	4,500					4,500
Cranes					1	43	6	257					1	128	6	770	1,027
Forklifts					1	43	6	257					1	128	6	770	1,027
On-site Hauling	12	111	6	7,992					12	100	6	7,200					15,192
Water Truck	1	11	4	44	1	43	2	86	1	156	4	624	1	128	1	128	882
Total days		111				43				207				128			489

B4-P1 - Thermal Drying Phase 1 (Year 2016

I.2 PROJECT-LEVEL EQUIPMENT HOURS

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	5	6	30													30
Jackhammers									1	3	18	54					54
Roller									1	2	6	12					12
Paving equipment									1	1	3	2					2
Dozer/Loader									1	3	6	18					18
Graders									1	2	6	12					12
Cranes					1	43	6	257					1	128	6	770	1,027
Forklifts					1	43	6	257					1	128	6	770	1,027
On-site Hauling	2	5	6	60					3	3	6	54					114
Water Truck	1	5	2	10	1	43	2	86	1	3	2	6	1	128	1	128	230
Total days		5				43				3				128			179

B5-P1 - Greenhouse Drying Phase 1 (Year 2016)

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	7	6	42													42
Jackhammers									1	15	6	90					90
Roller									1	5	6	30					30
Paving equipment									1	1	6	6					6
Dozer/Loader									1	12	6	72	1	128	6	770	842
Graders									1	10	6	60	1	128	6	770	830
Cranes					1	43	6	257									257
Forklifts					1	43	6	257									257
On-site Hauling	4	10	6	240					3	10	6	180					420
Water Truck	1	10	2	20	1	43	2	86	1	12	2	24	1	128	1	128	258
Total days		10				43				15				128			196

I.2 PROJECT-LEVEL EQUIPMENT HOURS

B6 - Back-up Sludge Pipeline (Year 2015)

	14-Inch Pipeline			
Equipment Type	no.	days	hr/day	tot. hrs.
Excavators	1	52	6	309
Jackhammers				
Roller				
Paving equipment				
Dozer/Loader	1	52	6	309
Graders				
Cranes	1	52	3	155
Forklifts				
On-site Hauling				
Water Truck				
Total days		52		52

E2 - Digester Gas Storage (Year 2022)

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	4	6	24													24
Jackhammers									1	3	6	18					18
Roller									1	1	6	6					6
Paving equipment									1	1	1	1					1
Dozer/Loader									1	3	6	18					18
Graders									1	2	6	12					12
Cranes					1	43	6	257					1	128	6	770	1,027
Forklifts					1	43	6	257					1	128	6	770	1,027
On-site Hauling	2	5	6	60					3	3	6	54					114
Water Truck	1	5	2	10	1	43	2	86		3	2	0	1	128	1	128	224
Total days		5				43				3				128			179

I.2 PROJECT-LEVEL EQUIPMENT HOURS

E2 - Digester Gas Storage Pipeline (Year 2022)

	Pipeline to Storage Sphere			
Equipment Type	no.	days	hr/day	tot. hrs.
Excavators	1	6	6	36
Jackhammers				
Roller				
Paving equipment				
Dozer/Loader	1	6	6	36
Graders				
Cranes	1	6	3	18
Forklifts				
On-site Hauling				
Water Truck				
Total days		6		6

SF1-P1-100 - Landscaping and Road Repairs Phase 1 (Year 2016)

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	4	25	6	600													600
Jackhammers									6	48	6	1,728					1,728
Roller									1	24	6	144					144
Paving equipment									1	17	6	102					102
Dozer/Loader									4	20	6	480					480
Graders									4	45	6	1,080					1,080
Cranes													1	64	6	385	385
Forklifts													1	64	6	385	385
On-site Hauling	10	24	6	1,440					10	19	6	1,140					2,580
Water Truck	10	25	6	1,500					1	48	6	288	1	64	1	64	1,852
Total days		25								48				64			137

SF2 108 - Warehouse (Year 2017)

	Excavation				Foundation - Rebar				Backfilling				Mechanical/Electrical				Total
Equipment Type	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	no.	days	hr/day	tot. hrs.	Hours/Days
Excavators	1	8	6	48													48
Jackhammers									2	11	6	132					132
Roller									1	5	6	30					30
Paving equipment									1	1	6	6					6
Dozer/Loader									1	14	6	84					84
Graders					1	43	6	257	1	13	6	78					335
Cranes					1	43	6	257					1	128	6	770	1,027
Forklifts													1	128	6	770	770
On-site Hauling	5	10	6	300					4	8	6	192					492
Water Truck	1	10	2	20	1	43	2	86	1	14	2	28	1	128	1	128	262
Total days		10				43				14				128			195

I.3 PROJECT-LEVEL ROUND TRIPS

H1 - Headworks Odor Control (Year 2015)

Construction Phase	Days/Phase	Worker Vehicles Trips/day	Worker Vehicles Trips/Phase	Haul Trucks Trips/day	Haul Trucks Trips/Phase
Mobilization	21	5	107	3	64
Excavation	2	10	20	40	80
Foundation - Rebar	21	10	214	6	128
Foundation - Concrete	3	10	30	14	42
Backfilling	1	10	10	28	28
Mechanical/Electrical	128	10	1,284	4	514
Demobilizatior	21	5	107	4	86
Total	199	NA	1,772	NA	942

P1 - Primary Treatment Odor Control (Year 2015)

Construction Phase	Days/Phase	Worker Vehicles Trips/day	Worker Vehicles Trips/Phase	Haul Trucks Trips/day	Haul Trucks Trips/Phase
Mobilization	21	5	107	5	107
Excavatior	1	10	10	41	41
Foundation - Reba	21	10	214	7	150
Foundation - Concrete	2	10	20	16	32
Backfilling	1	10	5	29	15
Mechanical/Electrica	128	10	1,284	6	770
Demobilizatior	21	5	107	6	128
Total	196	NA	1,747	NA	1,243

P2 - Equalization Basin (Year 2013)

Construction Phase	Days/Phase	Worker Vehicles Trips/day	Worker Vehicles Trips/Phase	Haul Trucks Trips/day	Haul Trucks Trips/Phase
Mobilization	21	10	214	10	214
Excavation	70	40	2,800	392	27,440
Foundation - Rebar	43	20	856	106	4,537
Foundation - Concrete	26	30	780	68	1,768
Backfilling	71	30	2,130	237	16,827
Mechanical/Electrical	0	0	0	0	0
Demobilization	21	10	214	10	214
Pipeline - Unpaved	10	15	150	9	90
Pipeline - Paved	8	15	120	18	144
Total	271	NA	7,264	NA	51,234

B2-P1 - Dewatering Phase 1 - Sludge Dewatering (Year 2016)

Construction Phase	Days/Phase	Worker Vehicles Trips/day	Worker Vehicles Trips/Phase	Haul Trucks Trips/day	Haul Trucks Trips/Phase
Mobilization	21	5	107	6	128
Excavation	2	10	20	41	82
Foundation - Rebar	21	10	214	7	150
Foundation - Concrete	3	10	30	16	48
Backfilling	1	10	5	29	15
Mechanical/Electrical	64	5	321	6	385
Demobilization	21	5	107	8	171
Total	134	NA	804	NA	979

I.3 PROJECT-LEVEL ROUND TRIPS

B2-P1 - Dewatering Phase 1 - Full Mechanical Dewatering Facility (Year 2013)

		Worker Vehicles		Haul Trucks	
Construction Phase	Days/Phase	Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	43	5	214	49	2,097
Excavation	9	10	90	91	819
Foundation - Rebar	43	10	428	57	2,440
Foundation - Concrete	15	10	150	60	900
Backfilling	3	10	30	79	237
Mechanical/Electrical	128	10	1,284	50	6,420
Demobilization	21	5	107	50	1,070
Pipeline - Unpaved	30	15	450	5	150
Pipeline - Paved	4	15	60	10	40
Total	296	NA	2,813	NA	14,173

B2-P1 - Dewatering Phase 1 - Cake Storage (Year 2015)

		Worker Vehicles		Haul Trucks	
Construction Phase	Days/Phase	Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	21	5	107	50	1,070
Excavation	4	10	40	87	348
Foundation - Rebar	21	10	214	53	1,134
Foundation - Concrete	3	10	30	60	180
Backfilling	1	10	10	75	75
Mechanical/Electrical	64	10	642	50	3,210
Demobilization	21	5	107	50	1,070
Total	136	NA	1,150	NA	7,087

B2-P1 - Dewatering Phase 1 - Side-Stream Nitrogen Removal (Year 2018)

		Worker Vehicles		Haul Trucks	
Construction Phase	Days/Phase	Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	43	10	428	50	2,140
Excavation	1	50	50	160	160
Foundation - Rebar	43	20	856	56	2,397
Foundation - Concrete	18	20	360	60	1,080
Backfilling	10	15	150	100	1,000
Mechanical/Electrical	86	0	0	50	4,280
Demobilization	21	10	214	50	1,070
Pipeline - Unpaved	36	15	540	5	180
Pipeline - Paved	19	15	278	11	204
Total	276	NA	2,876	NA	12,510

B2-P1 - Dewatering Phase 1 - Double-Ended Substation (Year 2115)

		Worker Vehicles		Haul Trucks	
Construction Phase	Days/Phase	Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	21	5	107	1	21
Excavation	1	10	10	38	38
Foundation - Rebar	21	10	214	4	86
Foundation - Concrete	2	10	20	12	24
Backfilling	1	10	10	26	26
Mechanical/Electrical	128	15	1,926	3	385
Demobilization	21	5	107	1	21
Total	197	NA	2,394	NA	602

I.3 PROJECT-LEVEL ROUND TRIPS

B3-P1 - Covered Lagoons Phase 1 (Year 2015)

		Worker Vehicles		Haul Trucks	
Construction Phase	Days/Phase	Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	43	10	428	50	2,140
Excavation	95	20	1,900	185	17,575
Foundation - Rebar	43	20	856	79	3,381
Foundation - Concrete	140	40	5,600	120	16,800
Backfilling	69	20	1,380	147	10,143
Mechanical/Electrical	128	20	2,568	50	6,420
Demobilization	21	10	214	50	1,070
Total	539	NA	12,946	NA	57,529

B4-P1 - Thermal Drying Phase 1 (Year 2016)

		Worker Vehicles		Haul Trucks	
Construction Phase	Days/Phase	Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	21	5	107	49	1,049
Excavation	2	10	20	86	172
Foundation - Rebar	43	10	428	52	2,226
Foundation - Concrete	3	10	30	60	180
Backfilling	1	10	5	74	37
Mechanical/Electrical	128	10	1,284	50	6,420
Demobilization	21	5	107	50	1,070
Total	220	NA	1,981	NA	11,153

B5-P1 - Greenhouse Drying Phase 1 (Year 2016)

		Worker Vehicles		Haul Trucks	
Construction Phase	Days/Phase	Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	43	10	428	7	300
Excavation	8	10	80	47	376
Foundation - Rebar	43	10	428	13	556
Foundation - Concrete	14	10	140	17	238
Backfilling	3	10	30	35	105
Mechanical/Electrical	128	10	1,284	7	899
Demobilization	21	5	107	6	128
Total	260	NA	2,497	NA	2,602

B6 - Back-up Sludge Pipeline (Year 2015)

		Worker Vehicles		Haul Trucks	
Construction Phase	Days/Phase	Trips/day	Trips/Phase	Trips/day	Trips/Phase
14-inch Pipeline	52	15	773	156	8,034
Total	52	NA	773	NA	8,034

E2 - Digester Gas Storage (Year 2022)

		Worker Vehicles		Haul Trucks	
Construction Phase	Days/Phase	Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	43	5	214	4	171
Excavation	1	10	10	41	41
Foundation - Rebar	43	10	428	7	300
Foundation - Concrete	2	10	20	15	30
Backfilling	1	10	10	29	29
Mechanical/Electrical	128	10	1,284	5	642
Demobilization	21	5	107	4	86
Pipeline to Storage Sphere	6	15	90	49	294
Total	245	NA	2,163	NA	1,592

I.3 PROJECT-LEVEL ROUND TRIPS

SF1-P1 - Landscaping and Road Repairs Phase 1 (Year 2016)

Construction Phase	Days/Phase	Worker Vehicles		Haul Trucks	
		Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	21	10	214	2	43
Excavation	18	15	270	209	3,762
Foundation - Rebar	0	0	0	0	0
Foundation - Concrete	0	0	0	0	0
Backfilling	13	15	195	161	2,093
Mechanical/Electrical	64	10	642	2	128
Demobilization	21	10	214	2	43
Total	138	NA	1,535	NA	6,069

SF2 108 - Warehouse (Year 2017)

Construction Phase	Days/Phase	Worker Vehicles		Haul Trucks	
		Trips/day	Trips/Phase	Trips/day	Trips/Phase
Mobilization	43	5	214	3	128
Excavation	11	10	110	44	484
Foundation - Rebar	43	10	428	6	257
Foundation - Concrete	20	10	200	12	240
Backfilling	4	10	40	40	160
Mechanical/Electrical	128	10	1,284	4	514
Demobilization	21	5	107	6	128
Total	270	NA	2,383	NA	1,911

I.4 ON-ROAD EMISSION FACTORS PER CALENDAR YEAR

Emission Factors

Vehicle Type (Calendar Year)	Running Exhaust Emission Factors			
	Units	CO2*	N20**	CH4**
Light duty truck (2013)	g/mile	356.1030	0.0220	0.2024
Heavy duty truck (2013)	g/mile	1728.8020	0.0048	0.0051
Light duty truck (2015)	g/mile	337.0700	0.0220	0.2024
Heavy duty truck (2015)	g/mile	1745.9030	0.0048	0.0051
Light duty truck (2016)	g/mile	326.0550	0.0220	0.2024
Heavy duty truck (2016)	g/mile	1685.8830	0.0048	0.0051
Light duty truck (2017)	g/mile	314.1990	0.0220	0.2024
Heavy duty truck (2017)	g/mile	1685.8830	0.0048	0.0051
Light duty truck (2018)	g/mile	302.9380	0.0220	0.2024
Heavy duty truck (2018)	g/mile	1629.5840	0.0048	0.0051
Light duty truck (2022)	g/mile	272.1760	0.0220	0.2024
Heavy duty truck (2022)	g/mile	1550.8670	0.0048	0.0051

* Emission factors (g/mile) obtained online from EMFAC 2011, for Santa Clara County, average model years, and average speed. Heavy truck = T7 Single Construction; Light duty truck = LDT1.

**Emission factors (g/mile) obtained from TCR, 2011, Table 13-3.

I.5 CONSTRUCTION OFF-SITE EMISSIONS

H1 - Headworks Odor Control (Year 2015)

Vehicle Type	Trips/proj	miles/trip	CO2	N20	CH4	CO2e*
Light duty truck (2015)	1,772	40	23.89	0.00	0.01	24.68
Heavy duty truck (2015)	942	10	16.44	0.00	0.00	16.46
Total Emissions (metric tons/improvement)			40.33	0.00	0.01	41.13

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.

P1 - Primary Treatment Odor Control (Year 2015)

Vehicle Type	Trips/proj	miles/trip	CO2	N20	CH4	CO2e*
Light duty truck (2015)	1,747	40	23.55	0.00	0.01	24.33
Heavy duty truck (2015)	1,243	10	21.70	0.00	0.00	21.72
Total Emissions (metric tons/improvement)			45.26	0.00	0.01	46.05

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.

P2 - Equalization Basin (Year 2013)

Vehicle Type	Trips/proj	miles/trip	CO2	N20	CH4	CO2e*
Light duty truck (2013)	7,264	40	103.47	0.01	0.06	106.69
Heavy duty truck (2013)	51,234	10	885.73	0.00	0.00	886.55
Total Emissions (metric tons/improvement)			989.20	0.01	0.06	993.23

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.

B2-P1 - Dewatering Phase 1 - Sludge Dewatering (Year 2016)

Vehicle Type	Trips/proj	miles/trip	CO2	N20	CH4	CO2e*
Light duty truck (2013)	804	40	10.49	0.00	0.01	10.84
Heavy duty truck (2013)	979	10	16.51	0.00	0.00	16.52
Total Emissions (metric tons/improvement)			26.99	0.00	0.01	27.36

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.

I.5 CONSTRUCTION OFF-SITE EMISSIONS

B2-P1 - Dewatering Phase 1 - Full Mechanical Dewatering Facility (Year 2013)

Vehicle Type	Trips/proj	miles/trip	CO2	N20	CH4	CO2e*
Light duty truck (2013)	2,813	40	40.07	0.00	0.02	41.31
Heavy duty truck (2013)	14,173	10	245.02	0.00	0.00	245.25
Total Emissions (metric tons/improvement)			285.09	0.00	0.02	286.56

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.

B2-P1 - Dewatering Phase 1 - Cake Storage (Year 2015)

Vehicle Type	Trips/proj	miles/trip	CO2	N20	CH4	CO2e*
Light duty truck (2013)	1,150	40	15.51	0.00	0.01	16.29
Heavy duty truck (2013)	7,087	10	123.74	0.00	0.00	123.85
Total Emissions (metric tons/improvement)			139.24	0.00	0.01	140.14

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.

B2-P1 - Dewatering Phase 1 - Side-Stream Nitrogen Removal (Year 2018)

Vehicle Type	Trips/proj	miles/trip	CO2	N20	CH4	CO2e*
Light duty truck (2018)	2,876	40	34.84	0.00	0.02	36.12
Heavy duty truck (2018)	12,510	10	203.87	0.00	0.00	204.07
Total Emissions (metric tons/improvement)			238.71	0.00	0.02	240.18

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.

B2-P1 - Dewatering Phase 1 - Double-Ended Substation (Year 2115)

Vehicle Type	Trips/proj	miles/trip	CO2	N20	CH4	CO2e*
Light duty truck (2013)	2,394	40	32.28	0.00	0.02	33.34
Heavy duty truck (2013)	602	10	10.50	0.00	0.00	10.51
Total Emissions (metric tons/improvement)			42.78	0.00	0.02	43.85

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.

B3-P1 - Covered Lagoons Phase 1 (Year 2015)

Vehicle Type	Trips/proj	miles/trip	CO2	N20	CH4	CO2e*
Light duty truck (2015)	12,946	40	174.55	0.01	0.10	180.28
Heavy duty truck (2015)	57,529	10	1,004.40	0.00	0.00	1,005.32
Total Emissions (metric tons/improvement)			1178.95	0.01	0.11	1185.60

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.

B4-P1 - Thermal Drying Phase 1 (Year 2016)

Vehicle Type	Trips/proj	miles/trip	CO2	N20	CH4	CO2e*
Light duty truck (2016)	1,981	40	25.84	0.00	0.02	26.71
Heavy duty truck (2016)	11,153	10	188.03	0.00	0.00	188.21
Total Emissions (metric tons/improvement)			213.87	0.00	0.02	214.92

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.

B5-P1 - Greenhouse Drying Phase 1 (Year 2016)

Vehicle Type	Trips/proj	miles/trip	CO2	N20	CH4	CO2e*
Light duty truck (2016)	2,497	40	32.57	0.00	0.02	33.67
Heavy duty truck (2016)	2,602	10	43.87	0.00	0.00	43.91
Total Emissions (metric tons/improvement)			76.44	0.00	0.02	77.58

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.

B6 - Back-up Sludge Pipeline (Year 2015)

Vehicle Type	Trips/proj	miles/trip	CO2	N20	CH4	CO2e*
Light duty truck (2015)	773	40	10.42	0.00	0.01	10.76
Heavy duty truck (2015)	8,034	10	140.27	0.00	0.00	140.39
Total Emissions (metric tons/improvement)			150.68	0.00	0.01	151.15

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.

I.5 CONSTRUCTION OFF-SITE EMISSIONS

E2 - Digester Gas Storage (Year 2022)

Vehicle Type	Trips/proj	miles/trip	CO2	N20	CH4	CO2e*
Light duty truck (2022)	2,163	40	23.55	0.00	0.02	24.51
Heavy duty truck (2022)	1,592	10	24.70	0.00	0.00	24.72
Total Emissions (metric tons/improvement)			48.24	0.00	0.02	49.23

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.

SF1-P1 - Landscaping and Road Repairs Phase 1 (Year 2016)

Vehicle Type	Trips/proj	miles/trip	CO2	N20	CH4	CO2e*
Light duty truck (2016)	1,535	40	20.02	0.00	0.01	20.70
Heavy duty truck (2016)	6,069	10	102.32	0.00	0.00	102.41
Total Emissions (metric tons/improvement)			122.34	0.00	0.01	123.11

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.

SF2 108 - Warehouse (Year 2017)

Vehicle Type	Trips/proj	miles/trip	CO2	N20	CH4	CO2e*
Light duty truck (2018)	2,383	40	29.95	0.00	0.02	31.00
Heavy duty truck (2018)	1,911	10	32.22	0.00	0.00	32.25
Total Emissions (metric tons/improvement)			62.17	0.00	0.02	63.26

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.

I-6 CONSTRUCTION EQUIPMENT EMISSION FACTORS AND FUEL CONSUMPTION RATES PER CALENDAR YEAR

GHG Emissions Factors for Diesel Equipment

Fuel	CO2 (kg/gal)	CO2 (g/gal)	N2O (g/gal)	CH4 (g/gal)
Diesel*	10.21	10,210.00	0.26	0.58

*Emission factors obtained from TCR, 2011, Tables 13.1 and 13.6.

Fuel Consumption Calendar Year 2013

Equipment	Offroad HP Range	Fuel Consumption (l/hr)*	Fuel Consumption (gal/hr)
Excavators (188 hp)	176 to 250	16.361	4.317
Jackhammers** (25 hp)	1 to 50	3.013	0.795
Roller (95 hp)	51 to 120	6.413	1.692
Paving Equipment (175 hp)	121 to 175	12.875	3.397
Dozer/Loader (105 hp)	51 to 120	6.050	1.596
Graders (173 hp)	121 to 175	12.109	3.195
Cranes (150 hp)	121 to 175	8.393	2.215
Forklifts (150 hp)	121 to 175	10.191	2.689
Dump Truck (350 hp)	251 to 500	28.080	7.409
Water Truck (189 hp)	176 to 250	15.680	4.137

Fuel Consumption Calendar Year 2015

Equipment	Offroad HP Range	Fuel Consumption (l/hr)*	Fuel Consumption (gal/hr)
Excavators (188 hp)	176 to 250	16.362	4.317
Jackhammers** (25 hp)	1 to 50	3.020	0.797
Roller (95 hp)	51 to 120	6.409	1.691
Paving Equipment (175 hp)	121 to 175	6.446	1.701
Dozer/Loader (105 hp)	51 to 120	6.037	1.593
Graders (173 hp)	121 to 175	12.100	3.193
Cranes (150 hp)	121 to 175	8.390	2.214
Forklifts (150 hp)	121 to 175	10.192	2.689
Dump Truck (350 hp)	251 to 500	28.077	7.408
Water Truck (189 hp)	176 to 250	15.675	4.136

Fuel Consumption Calendar Year 2016

Equipment	Offroad HP Range	Fuel Consumption (l/hr)*	Fuel Consumption (gal/hr)
Excavators (188 hp)	176 to 250	16.357	4.316
Jackhammers** (25 hp)	1 to 50	3.021	0.797
Roller (95 hp)	51 to 120	6.411	1.691
Paving Equipment (175 hp)	121 to 175	12.874	3.397
Dozer/Loader (105 hp)	51 to 120	6.030	1.591
Graders (173 hp)	121 to 175	12.089	3.190
Cranes (150 hp)	121 to 175	8.390	2.214
Forklifts (150 hp)	121 to 175	10.191	2.689
Dump Truck (350 hp)	251 to 500	28.067	7.405
Water Truck (189 hp)	176 to 250	15.669	4.134

I-6 CONSTRUCTION EQUIPMENT EMISSION FACTORS AND FUEL CONSUMPTION RATES PER CALENDAR YEAR

Fuel Consumption Calendar Year 2017

Equipment	Offroad HP Range	Fuel Consumption (l/hr)*	Fuel Consumption (gal/hr)
Excavators (188 hp)	176 to 250	16.353	4.315
Jackhammers** (25 hp)	1 to 50	3.022	0.797
Roller (95 hp)	51 to 120	6.409	1.691
Paving Equipment (175 hp)	121 to 175	12.882	3.399
Dozer/Loader (105 hp)	51 to 120	6.023	1.589
Graders (173 hp)	121 to 175	12.072	3.185
Cranes (150 hp)	121 to 175	8.392	2.214
Forklifts (150 hp)	121 to 175	10.192	2.689
Dump Truck (350 hp)	251 to 500	28.044	7.400
Water Truck (189 hp)	176 to 250	15.671	4.135

Fuel Consumption Calendar Year 2018

Equipment	Offroad HP Range	Fuel Consumption (l/hr)*	Fuel Consumption (gal/hr)
Excavators (188 hp)	176 to 250	16.333	4.310
Jackhammers** (25 hp)	1 to 50	3.021	0.797
Roller (95 hp)	51 to 120	6.406	1.690
Paving Equipment (175 hp)	121 to 175	12.885	3.400
Dozer/Loader (105 hp)	51 to 120	6.016	1.587
Graders (173 hp)	121 to 175	12.036	3.176
Cranes (150 hp)	121 to 175	8.389	2.213
Forklifts (150 hp)	121 to 175	10.193	2.690
Dump Truck (350 hp)	251 to 500	28.059	7.403
Water Truck (189 hp)	176 to 250	15.686	4.139

Fuel Consumption Calendar Year 2022

Equipment	Offroad HP Range	Fuel Consumption (l/hr)*	Fuel Consumption (gal/hr)
Excavators (188 hp)	176 to 250	16.345	4.313
Jackhammers** (25 hp)	1 to 50	3.014	0.795
Roller (95 hp)	51 to 120	6.411	1.692
Paving Equipment (175 hp)	121 to 175	12.885	3.400
Dozer/Loader (105 hp)	51 to 120	6.013	1.587
Graders (173 hp)	121 to 175	11.976	3.160
Cranes (150 hp)	121 to 175	8.389	2.213
Forklifts (150 hp)	121 to 175	10.194	2.690
Dump Truck (350 hp)	251 to 500	28.016	7.392
Water Truck (189 hp)	176 to 250	15.697	4.142

Notes:

*Fuel consumption factors were derived using Offroad2011.

**Based on ratio (1,354 hp / 875 hp) applied to 875 hp emissions (875 hp is the assumed average of 750 hp - 1,000 hp)

References:

CARB (California Air Resources Board), 2000.
SCAQMD (South Coast Air Quality Management District). 2006.

I-7 ON-SITE CONSTRUCTION EXHAUST EMISSIONS

H1 - Headworks Odor Control (Year 2015)

Equipment	Total Hours	Total Emissions (metric tons)			
		CO2	N2O	CH4	CO2e*
Excavators (188 hp)	30	1.32	0.00	0.00	1.33
Jackhammers* (25 hp)	18	0.15	0.00	0.00	0.15
Roller (95 hp)	12	0.21	0.00	0.00	0.21
Paving Equipment (175 hp)	3	0.05	0.00	0.00	0.05
Dozer/Loader (105 hp)	18	0.29	0.00	0.00	0.30
Graders (173 hp)	12	0.39	0.00	0.00	0.39
Cranes (150 hp)	899	20.32	0.00	0.00	20.50
Forklifts (150 hp)	899	24.68	0.00	0.00	24.90
Dump Truck (350 hp)	114	8.62	0.00	0.00	8.70
Water Truck (189 hp)	186	7.85	0.00	0.00	7.93
Total Emissions (metric tons/improvement)		63.88	0.00	0.00	64.46

P1 - Primary Treatment Odor Control (Year 2015)

Equipment	Total Hours	Total Emissions (metric tons)			
		CO2	N2O	CH4	CO2e*
Excavators (188 hp)	18	0.79	0.00	0.00	0.80
Jackhammers* (25 hp)	6	0.05	0.00	0.00	0.05
Roller (95 hp)	3	0.05	0.00	0.00	0.05
Paving Equipment (175 hp)	18	0.31	0.00	0.00	0.32
Dozer/Loader (105 hp)	12	0.20	0.00	0.00	0.20
Graders (173 hp)	899	29.30	0.00	0.00	29.56
Cranes (150 hp)	899	20.32	0.00	0.00	20.50
Forklifts (150 hp)	90	2.47	0.00	0.00	2.49
Dump Truck (350 hp)	184	13.92	0.00	0.00	14.04
Water Truck (189 hp)	156	6.59	0.00	0.00	6.65
Total Emissions (metric tons/improvement)		73.99	0.00	0.00	74.66

P2 - Equalization Basin (Year 2013)

Equipment	Total Hours	Total Emissions (metric tons)			
		CO2	N2O	CH4	CO2e*
Excavators (188 hp)	414	18.25	0.00	0.00	18.41
Jackhammers* (25 hp)	1,098	8.91	0.00	0.00	8.99
Roller (95 hp)	378	6.53	0.00	0.00	6.59
Paving Equipment (175 hp)	3	0.10	0.00	0.00	0.10
Dozer/Loader (105 hp)	1,752	28.56	0.00	0.00	28.82
Graders (173 hp)	696	22.70	0.00	0.00	22.91
Cranes (150 hp)	257	5.81	0.00	0.00	5.86
Forklifts (150 hp)	257	7.05	0.00	0.00	7.11
Dump Truck (350 hp)	4,296	324.97	0.01	0.02	327.92
Water Truck (189 hp)	400	16.90	0.00	0.00	17.05
Total Emissions (metric tons/improvement)		439.78	0.01	0.02	443.77

I-7 ON-SITE CONSTRUCTION EXHAUST EMISSIONS

P2 - Equalization Basin Pipeline (Year 2013)

Equipment	Total Hours	Total Emissions (metric tons)			
		CO2	N2O	CH4	CO2e*
Excavators (188 hp)	108	4.76	0.00	0.00	4.80
Jackhammers* (25 hp)	0	0.00	0.00	0.00	0.00
Roller (95 hp)	0	0.00	0.00	0.00	0.00
Paving Equipment (175 hp)	24	0.83	0.00	0.00	0.84
Dozer/Loader (105 hp)	108	1.76	0.00	0.00	1.78
Graders (173 hp)	0	0.00	0.00	0.00	0.00
Cranes (150 hp)	54	1.22	0.00	0.00	1.23
Forklifts (150 hp)	0	0.00	0.00	0.00	0.00
Dump Truck (350 hp)	0	0.00	0.00	0.00	0.00
Water Truck (189 hp)	0	0.00	0.00	0.00	0.00
Total Emissions (metric tons/improvement)		8.57	0.00	0.00	8.65

B2-P1 - Dewatering Phase 1 - Sludge Dewatering (Year 2016)

Equipment	Total Hours	Total Emissions (metric tons)			
		CO2	N2O	CH4	CO2e*
Excavators (188 hp)	30	1.32	0.00	0.00	1.33
Jackhammers* (25 hp)	18	0.15	0.00	0.00	0.15
Roller (95 hp)	12	0.21	0.00	0.00	0.21
Paving Equipment (175 hp)	3	0.10	0.00	0.00	0.10
Dozer/Loader (105 hp)	18	0.29	0.00	0.00	0.30
Graders (173 hp)	12	0.39	0.00	0.00	0.39
Cranes (150 hp)	514	11.61	0.00	0.00	11.71
Forklifts (150 hp)	514	14.10	0.00	0.00	14.23
Dump Truck (350 hp)	114	8.62	0.00	0.00	8.70
Water Truck (189 hp)	122	5.15	0.00	0.00	5.20
Total Emissions (metric tons/improvement)		41.94	0.00	0.00	42.32

B2-P1 - Dewatering Phase 1 - Full Mechanical Dewatering Facility (Year 2013)

Equipment	Total Hours	Total Emissions (metric tons)			
		CO2	N2O	CH4	CO2e*
Excavators (188 hp)	66	2.91	0.00	0.00	2.94
Jackhammers* (25 hp)	100	0.81	0.00	0.00	0.82
Roller (95 hp)	30	0.52	0.00	0.00	0.52
Paving Equipment (175 hp)	6	0.21	0.00	0.00	0.21
Dozer/Loader (105 hp)	78	1.27	0.00	0.00	1.28
Graders (173 hp)	60	1.96	0.00	0.00	1.98
Cranes (150 hp)	1,027	23.23	0.00	0.00	23.44
Forklifts (150 hp)	1,027	28.20	0.00	0.00	28.46
Dump Truck (350 hp)	432	32.68	0.00	0.00	32.98
Water Truck (189 hp)	176	7.43	0.00	0.00	7.50
Total Emissions (metric tons/improvement)		99.22	0.00	0.01	100.12

B2-P1 - Dewatering Phase 1 - Full Mechanical Dewatering Facility Pipeline (Year 2013)

Equipment	Total Hours	Total Emissions (metric tons)			
		CO2	N2O	CH4	CO2e*
Excavators (188 hp)	204	8.99	0.00	0.00	9.07
Jackhammers* (25 hp)	0	0.00	0.00	0.00	0.00
Roller (95 hp)	0	0.00	0.00	0.00	0.00
Paving Equipment (175 hp)	12	0.42	0.00	0.00	0.42
Dozer/Loader (105 hp)	204	3.33	0.00	0.00	3.36
Graders (173 hp)	0	0.00	0.00	0.00	0.00
Cranes (150 hp)	102	2.31	0.00	0.00	2.33
Forklifts (150 hp)	0	0.00	0.00	0.00	0.00
Dump Truck (350 hp)	0	0.00	0.00	0.00	0.00
Water Truck (189 hp)	0	0.00	0.00	0.00	0.00
Total Emissions (metric tons/improvement)		15.04	0.00	0.00	15.18

I-7 ON-SITE CONSTRUCTION EXHAUST EMISSIONS

B2-P1 - Dewatering Phase 1 - Cake Storage (Year 2015)

		Total Emissions (metric tons)			
Equipment	Total Hours	CO2	N2O	CH4	CO2e*
Excavators (188 hp)	30	1.32	0.00	0.00	1.33
Jackhammers* (25 hp)	48	0.39	0.00	0.00	0.39
Roller (95 hp)	12	0.21	0.00	0.00	0.21
Paving Equipment (175 hp)	3	0.05	0.00	0.00	0.05
Dozer/Loader (105 hp)	36	0.59	0.00	0.00	0.59
Graders (173 hp)	30	0.98	0.00	0.00	0.99
Cranes (150 hp)	514	11.61	0.00	0.00	11.71
Forklifts (150 hp)	514	14.10	0.00	0.00	14.23
Dump Truck (350 hp)	210	15.88	0.00	0.00	16.03
Water Truck (189 hp)	128	5.41	0.00	0.00	5.45
Total Emissions (metric tons/improvement)		50.53	0.00	0.00	50.99

B2-P1 - Dewatering Phase 1 - Side-Stream Nitrogen Removal (Year 2018)

		Total Emissions (metric tons)			
Equipment	Total Hours	CO2	N2O	CH4	CO2e*
Excavators (188 hp)	66	2.90	0.00	0.00	2.93
Jackhammers* (25 hp)	60	0.49	0.00	0.00	0.49
Roller (95 hp)	42	0.72	0.00	0.00	0.73
Paving Equipment (175 hp)	6	0.21	0.00	0.00	0.21
Dozer/Loader (105 hp)	84	1.36	0.00	0.00	1.37
Graders (173 hp)	42	1.36	0.00	0.00	1.37
Cranes (150 hp)	770	17.41	0.00	0.00	17.57
Forklifts (150 hp)	770	21.16	0.00	0.00	21.35
Dump Truck (350 hp)	456	34.47	0.00	0.00	34.78
Water Truck (189 hp)	222	37.98	0.00	0.00	38.32
Total Emissions (metric tons/improvement)		118.06	0.00	0.01	119.14

B2-P1 - Dewatering Phase 1 - Side-Stream Nitrogen Removal Pipeline (Year 2018)

		Total Emissions (metric tons)			
Equipment	Total Hours	CO2	N2O	CH4	CO2e*
Excavators (188 hp)	327	14.39	0.00	0.00	14.52
Jackhammers* (25 hp)	0	0.00	0.00	0.00	0.00
Roller (95 hp)	0	0.00	0.00	0.00	0.00
Paving Equipment (175 hp)	57	1.98	0.00	0.00	2.00
Dozer/Loader (105 hp)	327	5.30	0.00	0.00	5.35
Graders (173 hp)	0	0.00	0.00	0.00	0.00
Cranes (150 hp)	164	3.69	0.00	0.00	3.73
Forklifts (150 hp)	0	0.00	0.00	0.00	0.00
Dump Truck (350 hp)	0	0.00	0.00	0.00	0.00
Water Truck (189 hp)	0	0.00	0.00	0.00	0.00
Total Emissions (metric tons/improvement)		25.36	0.00	0.00	25.59

I-7 ON-SITE CONSTRUCTION EXHAUST EMISSIONS

B2-P1 - Dewatering Phase 1 - Double-Ended Substation (Year 2015)

Equipment	Total Hours	Total Emissions (metric tons)			
		CO2	N2O	CH4	CO2e*
Excavators (188 hp)	24	1.06	0.00	0.00	1.07
Jackhammers* (25 hp)	18	0.15	0.00	0.00	0.15
Roller (95 hp)	6	0.10	0.00	0.00	0.10
Paving Equipment (175 hp)	3	0.05	0.00	0.00	0.05
Dozer/Loader (105 hp)	18	0.29	0.00	0.00	0.30
Graders (173 hp)	12	0.39	0.00	0.00	0.39
Cranes (150 hp)	899	20.32	0.00	0.00	20.50
Forklifts (150 hp)	899	24.68	0.00	0.00	24.90
Dump Truck (350 hp)	108	8.17	0.00	0.00	8.24
Water Truck (189 hp)	233	9.83	0.00	0.00	9.92
Total Emissions (metric tons/improvement)		65.04	0.00	0.00	65.63

B3-P1 - Covered Lagoons Phase 1 (Year 2015)

Equipment	Total Hours	Total Emissions (metric tons)			
		CO2	N2O	CH4	CO2e*
Excavators (188 hp)	1,296	57.13	0.00	0.00	57.64
Jackhammers* (25 hp)	14,904	121.26	0.00	0.01	122.37
Roller (95 hp)	936	16.16	0.00	0.00	16.31
Paving Equipment (175 hp)	408	7.08	0.00	0.00	7.15
Dozer/Loader (105 hp)	2,610	42.45	0.00	0.00	42.83
Graders (173 hp)	4,500	146.68	0.00	0.01	148.02
Cranes (150 hp)	1,027	23.22	0.00	0.00	23.43
Forklifts (150 hp)	1,027	28.20	0.00	0.00	28.46
Dump Truck (350 hp)	15,192	1,149.09	0.03	0.07	1,159.54
Water Truck (189 hp)	882	37.24	0.00	0.00	37.58
Total Emissions (metric tons/improvement)		1,628.53	0.04	0.09	1,643.32

B4-P1 - Thermal Drying Phase 1 (Year 2016)

Equipment	Total Hours	Total Emissions (metric tons)			
		CO2	N2O	CH4	CO2e*
Excavators (188 hp)	30	1.32	0.00	0.00	1.33
Jackhammers* (25 hp)	54	0.44	0.00	0.00	0.44
Roller (95 hp)	12	0.21	0.00	0.00	0.21
Paving Equipment (175 hp)	2	0.05	0.00	0.00	0.05
Dozer/Loader (105 hp)	18	0.29	0.00	0.00	0.30
Graders (173 hp)	12	0.39	0.00	0.00	0.39
Cranes (150 hp)	1,027	23.22	0.00	0.00	23.43
Forklifts (150 hp)	1,027	28.20	0.00	0.00	28.46
Dump Truck (350 hp)	114	8.62	0.00	0.00	8.70
Water Truck (189 hp)	230	9.71	0.00	0.00	9.80
Total Emissions (metric tons/improvement)		72.45	0.00	0.00	73.11

B5-P1 - Greenhouse Drying Phase 1 (Year 2016)

Equipment	Total Hours	Total Emissions (metric tons)			
		CO2	N2O	CH4	CO2e*
Excavators (188 hp)	42	1.85	0.00	0.00	1.87
Jackhammers* (25 hp)	90	0.73	0.00	0.00	0.74
Roller (95 hp)	30	0.52	0.00	0.00	0.52
Paving Equipment (175 hp)	6	0.21	0.00	0.00	0.21
Dozer/Loader (105 hp)	842	13.68	0.00	0.00	13.81
Graders (173 hp)	830	27.04	0.00	0.00	27.29
Cranes (150 hp)	257	5.80	0.00	0.00	5.86
Forklifts (150 hp)	257	7.05	0.00	0.00	7.11
Dump Truck (350 hp)	420	31.76	0.00	0.00	32.04
Water Truck (189 hp)	258	10.89	0.00	0.00	10.99
Total Emissions (metric tons/improvement)		99.54	0.00	0.01	100.44

I-7 ON-SITE CONSTRUCTION EXHAUST EMISSIONS

B6 - Back-up Sludge Pipeline (Year 2015)

		Total Emissions (metric tons)			
Equipment	Total Hours	CO2	N2O	CH4	CO2e*
Excavators (188 hp)	309	13.62	0.00	0.00	13.74
Jackhammers* (25 hp)	0	0.00	0.00	0.00	0.00
Roller (95 hp)	0	0.00	0.00	0.00	0.00
Paving Equipment (175 hp)	0	0.00	0.00	0.00	0.00
Dozer/Loader (105 hp)	309	5.03	0.00	0.00	5.07
Graders (173 hp)	0	0.00	0.00	0.00	0.00
Cranes (150 hp)	155	3.49	0.00	0.00	3.52
Forklifts (150 hp)	0	0.00	0.00	0.00	0.00
Dump Truck (350 hp)	0	0.00	0.00	0.00	0.00
Water Truck (189 hp)	0	0.00	0.00	0.00	0.00
Total Emissions (metric tons/improvement)		22.14	0.00	0.00	22.34

E2 - Digester Gas Storage (Year 2022)

		Total Emissions (metric tons)			
Equipment	Total Hours	CO2	N2O	CH4	CO2e*
Excavators (188 hp)	24	1.06	0.00	0.00	1.07
Jackhammers* (25 hp)	18	0.79	0.00	0.00	0.80
Roller (95 hp)	6	0.26	0.00	0.00	0.27
Paving Equipment (175 hp)	1	0.04	0.00	0.00	0.04
Dozer/Loader (105 hp)	18	0.79	0.00	0.00	0.80
Graders (173 hp)	12	0.53	0.00	0.00	0.53
Cranes (150 hp)	1,027	45.23	0.00	0.00	45.64
Forklifts (150 hp)	1,027	45.23	0.00	0.00	45.64
Dump Truck (350 hp)	114	5.02	0.00	0.00	5.07
Water Truck (189 hp)	224	9.86	0.00	0.00	9.95
Total Emissions (metric tons/improvement)		108.82	0.00	0.01	109.81

E2 - Digester Gas Storage Pipeline (Year 2022)

		Total Emissions (metric tons)			
Equipment	Total Hours	CO2	N2O	CH4	CO2e*
Excavators (188 hp)	36	1.59	0.00	0.00	1.60
Jackhammers* (25 hp)	0	0.00	0.00	0.00	0.00
Roller (95 hp)	0	0.00	0.00	0.00	0.00
Paving Equipment (175 hp)	0	0.00	0.00	0.00	0.00
Dozer/Loader (105 hp)	36	1.59	0.00	0.00	1.60
Graders (173 hp)	0	0.00	0.00	0.00	0.00
Cranes (150 hp)	18	0.79	0.00	0.00	0.80
Forklifts (150 hp)	0	0.00	0.00	0.00	0.00
Dump Truck (350 hp)	0	0.00	0.00	0.00	0.00
Water Truck (189 hp)	0	0.00	0.00	0.00	0.00
Total Emissions (metric tons/improvement)		3.96	0.00	0.00	4.00

I-7 ON-SITE CONSTRUCTION EXHAUST EMISSIONS

SF1-P1-100 - Landscaping and Road Repairs Phase 1 (Year 2016)

Equipment	Total Hours	Total Emissions (metric tons)			
		CO2	N2O	CH4	CO2e*
Excavators (188 hp)	600	26.44	0.00	0.00	26.68
Jackhammers* (25 hp)	1,728	14.06	0.00	0.00	14.19
Roller (95 hp)	144	2.49	0.00	0.00	2.51
Paving Equipment (175 hp)	102	3.54	0.00	0.00	3.57
Dozer/Loader (105 hp)	480	7.80	0.00	0.00	7.87
Graders (173 hp)	1,080	35.17	0.00	0.00	35.49
Cranes (150 hp)	385	8.71	0.00	0.00	8.79
Forklifts (150 hp)	385	10.58	0.00	0.00	10.67
Dump Truck (350 hp)	2,580	195.07	0.00	0.01	196.85
Water Truck (189 hp)	1,852	78.17	0.00	0.00	78.88
Total Emissions (metric tons/improvement)		382.03	0.01	0.02	385.50

SF2 108 - Warehouse (Year 2017)

Equipment	Total Hours	Total Emissions (metric tons)			
		CO2	N2O	CH4	CO2e*
Excavators (188 hp)	48	2.11	0.00	0.00	2.13
Jackhammers* (25 hp)	132	1.07	0.00	0.00	1.08
Roller (95 hp)	30	0.52	0.00	0.00	0.52
Paving Equipment (175 hp)	6	0.21	0.00	0.00	0.21
Dozer/Loader (105 hp)	84	1.36	0.00	0.00	1.38
Graders (173 hp)	335	10.89	0.00	0.00	10.99
Cranes (150 hp)	1,027	23.22	0.00	0.00	23.43
Forklifts (150 hp)	770	21.15	0.00	0.00	21.34
Dump Truck (350 hp)	492	37.17	0.00	0.00	37.51
Water Truck (189 hp)	262	11.06	0.00	0.00	11.16
Total Emissions (metric tons/improvement)		108.77	0.00	0.01	109.76

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.
Source: Source: California Climate Action Registry (CCAR), 2009.

I.8 OFF-ROAD FUEL USE FACTORS

Calendar Year	Equipment Type	Horsepower Bin	Base BSFC (lbs/yr)	FC (liter/hr)	Base Activity	Population
2013	Cranes	50	14815.05693	2.515894727	3142.253895	8.038696209
2013	Cranes	120	353370.3352	4.993552462	37761.64325	96.92370857
2013	Cranes	175	932891.8518	8.393163206	59311.10909	145.3855629
2013	Cranes	250	1575358.837	12.26886299	68518.14397	163.3003716
2013	Cranes	500	2412610.13	18.95928364	67904.04357	156.6397376
2013	Excavators	50	1807564.067	2.976417842	324063.5711	499.2769684
2013	Excavators	120	2346661.401	6.051060106	206942.35	361.1225555
2013	Excavators	175	4943765.712	10.92686733	241430.7728	458.8116226
2013	Excavators	250	6289822.662	16.36074429	205147.2773	394.4349361
2013	Excavators	500	10434246.61	24.50723236	227194.2009	401.1791604
2013	Graders	50	11936.89602	3.270657966	1947.541384	6.367762508
2013	Graders	120	322678.2027	7.273411945	23673.46656	67.78585895
2013	Graders	175	2997216.171	12.10897464	132081.232	317.1556552
2013	Graders	250	5200653.9	16.53836916	167801.4404	251.8347366
2013	Graders	500	1483016.468	23.50084446	33673.86132	47.03927788
2013	Off-Highway Trucks	50	71459.36189	2.346321463	16251.82113	11.3816853
2013	Off-Highway Trucks	120	87754.88406	6.41977601	7294.269997	6.389718062
2013	Off-Highway Trucks	175	1697818.043	11.83193362	76571.26707	61.10167897
2013	Off-Highway Trucks	250	3482696.927	15.67990629	118522.9994	104.6316333
2013	Off-Highway Trucks	500	14800010.12	28.07981061	281253.7047	232.4259945
2013	Pavers	50	49599.68946	3.51100379	7538.380811	23.93757044
2013	Pavers	120	479494.3798	6.4410681	39724.28085	116.2966964
2013	Pavers	175	651648.1147	12.87513726	27007.95423	78.59502294
2013	Pavers	250	440044.7785	17.4208662	13478.99588	33.91155812
2013	Pavers	500	165829.9876	26.37485393	3355.084161	8.378149653
2013	Rollers	50	1017610.447	2.922402438	185811.226	604.7627158
2013	Rollers	120	1590465.966	6.413097826	132338.7197	451.009483
2013	Rollers	175	1642830.406	10.5607629	83009.51063	260.7654829
2013	Rollers	250	259332.8146	15.70390756	8812.115012	31.98067243
2013	Rollers	500	163414.8631	24.86693974	3506.708176	13.12027587
2013	Rough Terrain Forklifts	50	51817.55756	4.145494908	6670.078819	27.46804502
2013	Rough Terrain Forklifts	120	4167706.306	7.593355959	292882.7282	1176.863653
2013	Rough Terrain Forklifts	175	766279.8667	10.19133174	40122.39877	157.4676719
2013	Rough Terrain Forklifts	250	63069.81684	16.44614611	2046.387333	9.234946172
2013	Rough Terrain Forklifts	500	26707.87051	29.15285687	488.8645606	2.131141424
2013	Tractors/Loaders/Backhoes	50	1518680.281	3.012784229	268985.4187	586.3140873
2013	Tractors/Loaders/Backhoes	120	24629711.73	6.050381911	2172235.732	3981.011366
2013	Tractors/Loaders/Backhoes	175	4250040.761	10.33705821	219394.9096	445.3535576
2013	Tractors/Loaders/Backhoes	250	2462411.148	14.70168306	89376.61991	178.141423
2013	Tractors/Loaders/Backhoes	500	3319441.002	23.17124981	76444.44084	160.7767201
2015	Cranes	50	14269.61952	2.515665558	3026.843054	7.518337821
2015	Cranes	120	340333.5867	4.992702742	36374.7079	90.64967316
2015	Cranes	175	898328.9039	8.390369986	57132.69028	135.9745097
2015	Cranes	250	1517496.783	12.26885328	66001.56292	152.7296626
2015	Cranes	500	2324070.329	18.95987254	65410.01762	146.5001827
2015	Excavators	50	1741299.25	2.976630884	312161.1436	466.9579267
2015	Excavators	120	2261695.44	6.054336143	199341.6305	337.7464824
2015	Excavators	175	4762961.954	10.92864382	232563.339	429.1119711
2015	Excavators	250	6059326.2	16.36214962	197612.4884	368.9024963
2015	Excavators	500	10052455.6	24.51075594	218849.6576	375.2101556
2015	Graders	50	11499.80956	3.271039115	1876.010758	5.955566482
2015	Graders	120	310771.9988	7.27213291	22803.97135	63.39796577
2015	Graders	175	2884992.808	12.10000104	127230.0625	296.6256338

I.8 OFF-ROAD FUEL USE FACTORS

Calendar Year	Equipment Type	Horsepower Bin	Base BSFC (lbs/yr)	FC (liter/hr)	Base Activity	Population
2015	Graders	250	5009556.16	16.53808993	161638.3148	235.5330486
2015	Graders	500	1428336.632	23.49737996	32437.06481	43.99434595
2015	Off-Highway Trucks	50	68905.81804	2.34874378	15654.91318	10.64492958
2015	Off-Highway Trucks	120	84525.75157	6.419319478	7026.361082	5.976100816
2015	Off-Highway Trucks	175	1633924.81	11.82083125	73758.90543	57.14646405
2015	Off-Highway Trucks	250	3353746.673	15.67506698	114169.806	97.85865086
2015	Off-Highway Trucks	500	14255113.95	28.07722779	270923.6271	217.3806672
2015	Pavers	50	47750.17187	3.508961882	7261.506027	22.38805106
2015	Pavers	120	462236.0652	6.445989115	38265.26041	108.7686147
2015	Pavers	175	627447.1733	12.86966558	26015.9877	73.50743431
2015	Pavers	250	423749.4454	17.41539729	12983.93014	31.71640567
2015	Pavers	500	159631.1876	26.35700808	3231.856345	7.835817871
2015	Rollers	50	979987.7199	2.921665341	178986.6248	565.6154034
2015	Rollers	120	1530993.087	6.408672595	127478.0931	421.8148771
2015	Rollers	175	1583241.264	10.56576703	79960.6808	243.8856926
2015	Rollers	250	249884.4892	15.70872463	8488.457651	29.91050947
2015	Rollers	500	157556.1255	24.88957325	3377.91141	12.27097824
2015	Rough Terrain Forklifts	50	49913.75828	4.145444351	6425.095622	25.68999206
2015	Rough Terrain Forklifts	120	4015068.806	7.594182238	282125.5319	1100.68328
2015	Rough Terrain Forklifts	175	738150.5951	10.19154129	38648.75599	147.2745234
2015	Rough Terrain Forklifts	250	60723.49014	16.43806412	1971.226225	8.637152503
2015	Rough Terrain Forklifts	500	25724.159	29.1497218	470.9092101	1.993189039
2015	Tractors/Loaders/Backhoes	50	1466517.46	3.020231854	259105.939	548.3609858
2015	Tractors/Loaders/Backhoes	120	23673213.77	6.037151164	2092452.379	3723.313774
2015	Tractors/Loaders/Backhoes	175	4092538.39	10.33351321	211336.824	416.5250694
2015	Tractors/Loaders/Backhoes	250	2369936.129	14.68907673	86093.93455	166.6100277
2015	Tractors/Loaders/Backhoes	500	3192112.557	23.13204732	73636.73736	150.3693714
2016	Cranes	50	13879.01101	2.515547681	2944.125917	7.211012118
2016	Cranes	120	330989.0592	4.992040037	35380.66505	86.94420326
2016	Cranes	175	873741.9463	8.390009389	55571.37623	130.4163049
2016	Cranes	250	1475850.39	12.26738656	64197.88158	146.4865605
2016	Cranes	500	2261010.463	18.96366356	63622.50194	140.5117219
2016	Excavators	50	1694142.682	2.977385555	303630.4481	447.870174
2016	Excavators	120	2199859.318	6.054256799	193894.0507	323.940482
2016	Excavators	175	4634151.24	10.9318304	226207.8811	411.5712405
2016	Excavators	250	5891817.627	16.35681887	192212.1623	353.8229373
2016	Excavators	500	9771228.038	24.49442299	212868.9652	359.8727595
2016	Graders	50	11186.32417	3.271267146	1824.743402	5.712121894
2016	Graders	120	302228.5371	7.270912498	22180.78766	60.80645887
2016	Graders	175	2803669.232	12.08929488	123753.1374	284.5005227
2016	Graders	250	4872356.391	16.53707398	157221.0859	225.9052078
2016	Graders	500	1388278.108	23.48004163	31550.62931	42.19599721
2016	Off-Highway Trucks	50	67060.56795	2.350068383	15227.09793	10.20979876
2016	Off-Highway Trucks	120	82210.43612	6.41889725	6834.345683	5.73181685
2016	Off-Highway Trucks	175	1589084.117	11.81942528	71743.23253	54.81049863
2016	Off-Highway Trucks	250	3260786.574	15.66877511	111049.7897	93.85850092
2016	Off-Highway Trucks	500	13860331.39	28.0666558	263519.8647	208.4948379
2016	Pavers	50	46445.67265	3.50899291	7063.064621	21.47289884
2016	Pavers	120	449271.0766	6.441213923	37219.5528	104.3225002
2016	Pavers	175	610505.8533	12.87399836	25305.02648	70.50268453
2016	Pavers	250	412062.2092	17.4108732	12629.10714	30.41994003
2016	Pavers	500	155278.0711	26.35858031	3143.536633	7.515514595
2016	Rollers	50	952858.6186	2.920598272	174095.3037	542.4948474

I.8 OFF-ROAD FUEL USE FACTORS

Calendar Year	Equipment Type	Horsepower Bin	Base BSFC (lbs/yr)	FC (liter/hr)	Base Activity	Population
2016	Rollers	120	1489602.508	6.410601378	123994.3898	404.5724285
2016	Rollers	175	1539285.472	10.56103844	77775.52666	233.9164223
2016	Rollers	250	243062.0547	15.70913654	8256.486285	28.68786311
2016	Rollers	500	153519.4508	24.93326131	3285.600326	11.76937974
2016	Rough Terrain Forklifts	50	48525.01554	4.143334761	6249.511521	24.63986701
2016	Rough Terrain Forklifts	120	3907337.99	7.598056609	274415.6454	1055.690854
2016	Rough Terrain Forklifts	175	717952.2522	10.19116841	37592.56827	141.25441
2016	Rough Terrain Forklifts	250	59059.34093	16.43675431	1917.356835	8.28409322
2016	Rough Terrain Forklifts	500	25019.80983	29.1481339	458.04027	1.91171382
2016	Tractors/Loaders/Backhoes	50	1426901.811	3.021208218	252025.1287	525.9457354
2016	Tractors/Loaders/Backhoes	120	22999507.74	6.03013304	2035270.138	3571.116566
2016	Tractors/Loaders/Backhoes	175	3972191.841	10.31143182	205561.4413	399.4988513
2016	Tractors/Loaders/Backhoes	250	2304956.472	14.68771065	83741.17173	159.7995405
2016	Tractors/Loaders/Backhoes	500	3105239.62	23.13473434	71624.40305	144.2227504
2017	Cranes	50	13409.82482	2.515427523	2844.734301	6.873542465
2017	Cranes	120	319780.8174	4.991504886	34186.23874	82.87528343
2017	Cranes	175	844396.5784	8.391515418	53695.32575	124.3129251
2017	Cranes	250	1426291.521	12.2696645	62030.60635	139.6311055
2017	Cranes	500	2185544.58	18.97116539	61474.65113	133.9358846
2017	Excavators	50	1636650.897	2.97684222	293380.0983	426.9102047
2017	Excavators	120	2125886.444	6.055090844	187348.3242	308.7803241
2017	Excavators	175	4476753.982	10.92950722	218571.2625	392.3100326
2017	Excavators	250	5691713.847	16.35337055	185723.2152	337.2643042
2017	Excavators	500	9447081.049	24.50927003	205682.659	343.0309995
2017	Graders	50	10809.54083	3.27152715	1763.141351	5.444799115
2017	Graders	120	291970.3924	7.26954005	21431.97991	57.96076477
2017	Graders	175	2705201.055	12.07225539	119575.3188	271.1861237
2017	Graders	250	4708845.302	16.54050313	151913.4129	215.3330231
2017	Graders	500	1341048.461	23.47369895	30485.50231	40.22125798
2017	Off-Highway Trucks	50	64980.2265	2.356726386	14713.04184	9.731988271
2017	Off-Highway Trucks	120	79429.47735	6.418445345	6603.622991	5.463572363
2017	Off-Highway Trucks	175	1536114.806	11.82463704	69321.23158	52.24541072
2017	Off-Highway Trucks	250	3151174.374	15.67111075	107300.8271	89.46599744
2017	Off-Highway Trucks	500	13381791.39	28.04438889	254623.6198	198.7374447
2017	Pavers	50	44878.11818	3.509025648	6824.620538	20.46798419
2017	Pavers	120	433880.1997	6.437893158	35963.04694	99.44028986
2017	Pavers	175	590282.2446	12.88243644	24450.74662	67.20321476
2017	Pavers	250	397671.5599	17.3898954	12202.75738	28.99631094
2017	Pavers	500	149620.5285	26.28559082	3037.413053	7.163794467
2017	Rollers	50	920641.0423	2.920440484	168217.969	517.1065183
2017	Rollers	120	1438969.801	6.409065767	119808.4267	385.6387594
2017	Rollers	175	1486701.439	10.55664423	75149.87971	222.9693191
2017	Rollers	250	234883.1528	15.71092257	7977.753128	27.34529385
2017	Rollers	500	148449.0908	24.95214546	3174.680776	11.21858209
2017	Rough Terrain Forklifts	50	46889.96213	4.143610198	6038.532417	23.48674076
2017	Rough Terrain Forklifts	120	3775023.386	7.597240282	265151.5667	1006.285358
2017	Rough Terrain Forklifts	175	693769.8177	10.19197828	36323.46966	134.6438156
2017	Rough Terrain Forklifts	250	57060.90386	16.43541918	1852.62822	7.896404221
2017	Rough Terrain Forklifts	500	24170.93331	29.14303933	442.5771534	1.822247128
2017	Tractors/Loaders/Backhoes	50	1378882.594	3.021541257	243516.938	501.3318917
2017	Tractors/Loaders/Backhoes	120	22195828.78	6.022743808	1966560.853	3403.99114

I.8 OFF-ROAD FUEL USE FACTORS

Calendar Year	Equipment Type	Horsepower Bin	Base BSFC (lbs/yr)	FC (liter/hr)	Base Activity	Population
2017	Tractors/Loaders/Backhoes	175	3833907.38	10.30018553	198621.8319	380.8026216
2017	Tractors/Loaders/Backhoes	250	2227335.584	14.68898226	80914.12881	152.3210486
2017	Tractors/Loaders/Backhoes	500	2990149.43	23.05562827	69206.4137	137.47324
2018	Cranes	50	12862.07313	2.515305018	2728.668208	6.506805404
2018	Cranes	120	306867.0751	4.993676043	32791.42898	78.45348229
2018	Cranes	175	809699.0265	8.388967806	51504.53883	117.6802234
2018	Cranes	250	1368082.754	12.26952454	59499.73725	132.1811041
2018	Cranes	500	2098102.732	18.9868128	58966.46518	126.789751
2018	Excavators	50	1567206.917	2.971782918	281410.0939	404.1324602
2018	Excavators	120	2041070.47	6.060794774	179704.4511	292.3053857
2018	Excavators	175	4293938.608	10.92909402	209653.4832	371.3783763
2018	Excavators	250	5452712.974	16.33307047	178145.6471	319.2696063
2018	Excavators	500	9060848.257	24.50713658	197290.739	324.7286203
2018	Graders	50	10369.45631	3.27182636	1691.204605	5.15429249
2018	Graders	120	279632.0503	7.258486034	20557.54809	54.86827489
2018	Graders	175	2587117.18	12.03638151	114696.6065	256.7170195
2018	Graders	250	4513686.223	16.52938275	145715.2958	203.8439546
2018	Graders	500	1286608.809	23.47872761	29241.6838	38.07525742
2018	Off-Highway Trucks	50	62361.12805	2.357940731	14112.74491	9.212739165
2018	Off-Highway Trucks	120	76184.49123	6.418088372	6334.193005	5.172064093
2018	Off-Highway Trucks	175	1472789.382	11.81940914	66492.90257	49.45786289
2018	Off-Highway Trucks	250	3025380.832	15.68550023	102922.9181	84.69254952
2018	Off-Highway Trucks	500	12842473.04	28.05894687	244234.8925	188.1338314
2018	Pavers	50	43006.55958	3.505722892	6546.17378	19.37591727
2018	Pavers	120	416447.5348	6.44206656	34495.74282	94.13466472
2018	Pavers	175	566308.4198	12.88493659	23453.14814	63.61759503
2018	Pavers	250	381118.7548	17.37495691	11704.88088	27.44921613
2018	Pavers	500	143592.4983	26.29960882	2913.485603	6.781571044
2018	Rollers	50	882835.3749	2.919636159	161354.6206	489.51636
2018	Rollers	120	1379493.169	6.405508048	114920.2035	365.0630481
2018	Rollers	175	1426461.207	10.55973617	72083.73995	211.0728169
2018	Rollers	250	225324.0352	15.71260957	7652.258182	25.88628887
2018	Rollers	500	142588.8251	24.98658021	3045.152758	10.62001595
2018	Rough Terrain Forklifts	50	44975.48652	4.143485848	5792.158313	22.23360843
2018	Rough Terrain Forklifts	120	3620280.703	7.595728618	254333.2958	952.5951198
2018	Rough Terrain Forklifts	175	665558.7263	10.19343241	34841.46018	127.4599104
2018	Rough Terrain Forklifts	250	54718.23553	16.43104562	1777.04038	7.475092489
2018	Rough Terrain Forklifts	500	23117.99208	29.05912355	424.5198603	1.725021344
2018	Tractors/Loaders/Backhoes	50	1322234.833	3.020652816	233581.367	474.5833867
2018	Tractors/Loaders/Backhoes	120	21265545.23	6.015760315	1886324.524	3222.371588
2018	Tractors/Loaders/Backhoes	175	3674863.209	10.29284865	190517.996	360.4849418
2018	Tractors/Loaders/Backhoes	250	2138076.331	14.70009817	77612.80579	144.1939767
2018	Tractors/Loaders/Backhoes	500	2849288.85	22.90401007	66382.7693	130.1383712
2022	Cranes	50	13218.79158	2.514790095	2804.919665	6.368498167
2022	Cranes	120	315651.7565	4.996991202	33707.77133	76.78589219
2022	Cranes	175	832304.7839	8.388756823	52943.81097	115.1788383
2022	Cranes	250	1405847.601	12.26546206	61162.43177	129.3714913
2022	Cranes	500	2154790.062	18.96970542	60614.25764	124.0947357
2022	Excavators	50	1612249.141	2.974083791	289273.9777	395.5423088
2022	Excavators	120	2096726.713	6.056806666	184726.2145	286.0922062

I.8 OFF-ROAD FUEL USE FACTORS

Calendar Year	Equipment Type	Horsepower Bin	Base BSFC (lbs/yr)	FC (liter/hr)	Base Activity	Population
2022	Excavators	175	4413101.079	10.92703941	215512.1594	363.4844385
2022	Excavators	250	5609309.562	16.34537581	183123.8504	312.4832812
2022	Excavators	500	9295364.567	24.45797209	202803.9437	317.8262596
2022	Graders	50	10665.22997	3.273669174	1738.464589	5.044733973
2022	Graders	120	286870.4264	7.243945615	21132.01991	53.7020068
2022	Graders	175	2646116.78	11.97620317	117901.7537	251.2602985
2022	Graders	250	4620228.819	16.45959177	149787.2469	199.5110919
2022	Graders	500	1321452.544	23.4590225	30058.83006	37.26593806
2022	Off-Highway Trucks	50	64056.66403	2.356207549	14507.11948	9.016915191
2022	Off-Highway Trucks	120	78297.5245	6.416784527	6511.199299	5.062127827
2022	Off-Highway Trucks	175	1517279.685	11.8454365	68351.01808	48.40659734
2022	Off-Highway Trucks	250	3112190.07	15.69693062	105799.0547	82.89234316
2022	Off-Highway Trucks	500	13180985.67	28.01566243	251059.9314	184.1348997
2022	Pavers	50	44188.66086	3.504160802	6729.103785	18.964067
2022	Pavers	120	428469.2544	6.447849314	35459.71149	92.13375882
2022	Pavers	175	582119.1874	12.88461615	24108.53625	62.2653533
2022	Pavers	250	391679.8034	17.37100308	12031.96873	26.86576158
2022	Pavers	500	147549.8075	26.28975192	2994.901703	6.637423449
2022	Rollers	50	907422.6837	2.919368664	165863.606	479.111307
2022	Rollers	120	1419265.571	6.411032791	118131.5991	357.3033476
2022	Rollers	175	1466261.571	10.55929343	74098.089	206.5862992
2022	Rollers	250	231732.9698	15.72023124	7866.097239	25.33605556
2022	Rollers	500	146704.305	25.00889434	3130.248239	10.3942792
2022	Rough Terrain Forklifts	50	46204.1764	4.140964685	5954.01768	21.7610157
2022	Rough Terrain Forklifts	120	3723185.825	7.599275869	261440.5301	932.3469657
2022	Rough Terrain Forklifts	175	684217.7455	10.19433035	35815.08977	124.7506503
2022	Rough Terrain Forklifts	250	56319.02884	16.45199534	1826.699008	7.316203554
2022	Rough Terrain Forklifts	500	23802.60865	29.10631739	436.3828848	1.688354666
2022	Tractors/Loaders/Backhoes	50	1356146.128	3.013901188	240108.6977	464.4957458
2022	Tractors/Loaders/Backhoes	120	21850269.32	6.013137023	1939037.05	3153.87756
2022	Tractors/Loaders/Backhoes	175	3781349.483	10.30318577	195841.9393	352.8225525
2022	Tractors/Loaders/Backhoes	250	2194810.115	14.67994019	79781.6622	141.129021
2022	Tractors/Loaders/Backhoes	500	2942844.869	23.01297259	68237.80718	127.3721784

I.9 OPERATION ON-ROAD AND GAS EMISSIONS ESTIMATES

Vehicle Fuel Emission Factors

	Running Exhaust Emission Factors			
Vehicle Type (Calendar Year)	Units	CO2*	N20**	CH4**
Light duty truck (2017)	g/mile	314.1990	0.0220	0.2024
Heavy duty truck (2017)	g/mile	1685.8830	0.0048	0.0051

* Emission factors (g/mile) obtained online from EMFAC 2011, for Santa Clara County, average model years, and average speed. Heavy truck = T7 Single Construction; Light duty truck = LDT1.

**Emission factors (g/mile) obtained from TCR, 2011, Table 13-3.

Project Level Off-Site Annual Vehicle Emissions

Vehicle Type (Calendar Year)	Trips/proj	miles/trip	CO2	N20	CH4	CO2e*
Light duty truck (2017)	12,775	25	100.35	0.01	0.06	103.88
Heavy duty truck (2017)	1,460	50	123.07	0.00	0.00	123.19
Total Emissions (metric tons/year)			223.42	0.01	0.07	227.07

*Global Warming Potential for CH4 = 21; GWP for N2O = 310.

It is assumed that each employee would generate approximately 1.5, 25-mile round trips each day; there would be an average of 35 employee trips and 4 truck deliveries each day, 365 days a year.

Gas Emission Factors

	Running Exhaust Emission Factors			
Source	Units	CO2	N20	CH4
Natural Gas	lb/MMBtu	110.0000	0.0030	0.0086
Landfill Gas	lb/MMBtu	50.0000	0.0030	0.0086
Digester Gas	lb/MMBtu	27.0000	0.0030	0.0086
Blended Gas	lb/MMBtu	57.1800	0.0030	0.0086

Emission factors obtained from U.S. EPA, 2000, Tables 3.1-2a and 3.1-2b. Natural gas emission factors for N20 and CH4 are used for landfill and blended gas because emission factors for those sources are not available.

Blended gas is 34% digester, 41% landfill gas, and 25% natural gas.

Project-Level Natural Gas Emissions

Source	MMBtu/year*	CO2	N20	CH4	CO2e**
B2-P1 - Dewatering Phase 1 - Sludge Dewatering	450	22.45	0.00	0.00	22.68
B4-P1 - Thermal Drying Phase 1	21,563	1,075.88	0.03	0.08	1,086.74
Total Emissions (metric tons/year)		1,098.33	0.03	0.09	1,109.42

*MMBtu/year represent one quarter of the actual gas requirements to reflect the 25% of natural gas in the blended gas.

**Global Warming Potential for CH4 = 21; GWP for N2O = 310; Source: California Climate Action Registry (CCAR), 2009.

General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.

I.10 INDIRECT EMISSIONS

Electricity use emission factors per Calendar Year

Units	CO2	N2O	CH4
lbs/MW-hr (2013)	431	0.00623	0.02829
lbs/MW-hr (2015)	391	0.00623	0.02829
lbs/MW-hr (2016)	370	0.00623	0.02829
lbs/MW-hr (2017)	349	0.00623	0.02829
lbs/MW-hr (2018)	328	0.00623	0.02829
lbs/MW-hr (2022)	290	0.00623	0.02829

Source: CO2 factor is from PG&E, 2011, N2O and CH4 is from TCR, 2011, Table 14.1.

Operations Indirect Electrical Grid Emissions

	Annual Increase (MWh)	Metric tons			
Source		CO2	N2O	CH4	CO2e
H1 - Headworks Odor Control	1,699.00	268.96	0.00	0.02	270.91
P1 - Primary Treatment Odor Control	799.00	126.49	0.00	0.01	127.40
P2 - Equalization Basin	1,006.62	159.35	0.00	0.01	160.51
B2-P1 - Dewatering Phase 1 - Sludge Dewatering	40.00	6.33	0.00	0.00	6.38
B2-P1 - Dewatering Phase 1 - Full Mechanical Dewatering Facility	1,101.00	174.29	0.00	0.01	175.56
B3-P1 - Covered Lagoons Phase 1	29.00	4.59	0.00	0.00	4.62
B4-P1 - Thermal Drying Phase 1	2,000.00	316.61	0.01	0.03	318.90
B5-P1 - Greenhouse Drying Phase 1	2,600.00	411.59	0.01	0.03	414.57
B6 - Back-up Sludge Pipeline	0.00	0.00	0.00	0.00	0.00
E2 - Digester Gas Storage	1,100.00	174.14	0.00	0.01	175.40
SF1-P1 - Landscaping and Road Repairs Phase 1	0.00	0.00	0.00	0.00	0.00
SF2 108 - Warehouse	0.00	0.00	0.00	0.00	0.00
Total	10,374.62	1,642.36	0.03	0.13	1,654.24

Program-level Improvements*	20,913.00	2,750.96	0.06	0.27	2,774.92

*Assumes 32,413 MWh would be required, and solar phase 1 and 2 would offset by 11,500 MWh (7 MW; 6 hours per day, nine months a year).

Global Warming Potential for CH4 = 21; GWP for N2O = 310.

Source: Source: California Climate Action Registry (CCAR), 2009.

I.10 INDIRECT EMISSIONS

Construction Indirect Emissions from Water Use

Source	Year	Water Use		Assoc. Electricity Use		Indirect GHG Emissions (metric tons/proj)			
		gals/ source*	million gals/proj	Kw-hrs**	MW-hrs	CO2	N2O	CH4	CO2e
H1 - Headworks Odor Control	2015	384,812	0.38	557.98	0.56	0.099	0.000	0.000	0.10
P1 - Primary Treatment Odor Control	2015	654,206	0.65	948.60	0.95	0.168	0.000	0.000	0.17
P2 - Equalization Basin	2013	18,171,117	18.17	26,348.12	26.35	5.151	0.000	0.000	5.18
B2-P1 - Dewatering Phase 1 - Sludge Dewatering	2016	503,306	0.50	729.79	0.73	0.122	0.000	0.000	0.12
B2-P1 - Dewatering Phase 1 - Full Mechanical Dewatering Facility	2013	12,066,716	12.07	17,496.74	17.50	3.421	0.000	0.000	3.44
B2-P1 - Dewatering Phase 1 - Cake Storage	2015	6,192,559	6.19	8,979.21	8.98	1.593	0.000	0.000	1.60
B2-P1 - Dewatering Phase 1 - Side-Stream Nitrogen Removal	2018	10,085,433	10.09	14,623.88	14.62	2.176	0.000	0.000	2.19
B2-P1 - Dewatering Phase 1 - Double-Ended Substation	2015	63,302	0.06	91.79	0.09	0.016	0.000	0.000	0.02
B3-P1 - Covered Lagoons Phase 1	2015	29,045,613	29.05	42,116.14	42.12	7.470	0.000	0.001	7.52
B4-P1 - Thermal Drying Phase 1	2016	9,870,134	9.87	14,311.69	14.31	2.402	0.000	0.000	2.42
B5-P1 - Greenhouse Drying Phase 1	2016	1,480,847	1.48	2,147.23	2.15	0.360	0.000	0.000	0.36
B6 - Back-up Sludge Pipeline	2015	823,469	0.82	1,194.03	1.19	0.212	0.000	0.000	0.21
E2 - Digester Gas Storage	2022	740,483	0.74	1,073.70	1.07	0.141	0.000	0.000	0.14
SF1-P1 - Landscaping and Road Repairs Phase 1	2016	1,845,369	1.85	2,675.79	2.68	0.449	0.000	0.000	0.45
SF2 108 - Warehouse	2017	804,670	0.80	1,166.77	1.17	0.185	0.000	0.000	0.19
Total		92,732,036	92.73	134,461.45	134.46	23.96	0.000	0.002	24.12

*Based on construction water needs identified in Appendix B.

**Assumes 1,450 kw-hrs of electricity per million gallonswould be required to supply, treat, and distribute the water based on CEC, 2005.

APPENDIX J

Biological Resources Existing Conditions Report

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EXISTING CONDITIONS REPORT

SAN JOSE/SANTA CLARA WATER POLLUTION CONTROL PLANT MASTER PLAN

PREPARED FOR:

San Jose/Santa Clara Water Pollution Control Plant
700 Los Esteros Road
San José, CA 95134
Contact: Matthew Krupp, AICP
408/945-5182

PREPARED BY:

ICF International
75 E. Santa Clara Street, Suite 300
San José, CA 95113
Contact: Shilpa Trisal, AICP
408/216-2812

January 2012

ICF INTERNATIONAL

ICF International. 2012. Existing Conditions Report San José/Santa Clara Water Pollution Control Plant-Master Plan. (ICF 00757.10.) San José, CA. Prepared for The City of San José, San José, CA.

Contents

Tables and Figures

Acronyms and Abbreviations

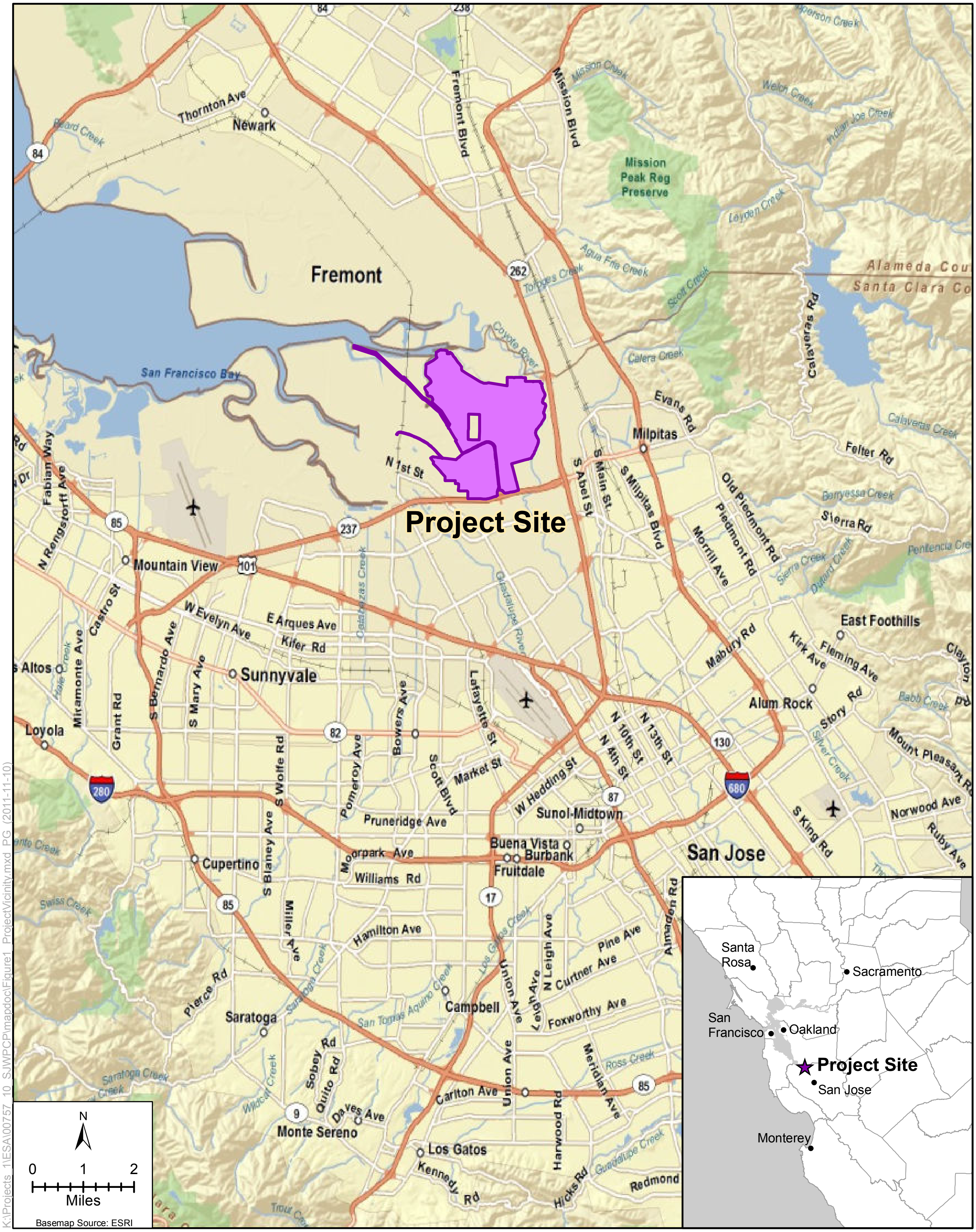
BA	biological assessment
BCDC	Bay Conservation and Development Commission
BO	biological opinion
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPPA	California Native Plant Protection Act
CWA	federal Clean Water Act
EFH	Essential Fish Habitat
EIR	environmental impact report
ESA	federal Endangered Species Act
FR	Federal Register
GIS	geographic information systems
HCP	habitat conservation plan
MBTA	Migratory Bird Treaty Act
MSL	mean sea level
NCCP	natural community conservation plan
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
OHWM	ordinary high-water mark
RHA	Rivers and Harbors Act
RWQCBs	Regional Water Quality Control Boards
SCVWD	Santa Clara Valley Water District
SFRWQCB	San Francisco Regional Water Quality Control Board
SMARA	Surface Mining and Reclamation Act
SVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SWANCC	Solid Waste Agency of Northern Cook County
SWRCB	State Water Resources Control Board

UGB	Urban Growth Boundary
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WPCP	San Jose/Santa Clara Water Pollution Control Plant

Chapter 1
Introduction

The purpose of this document is to characterize the existing biological conditions of the San Jose/Santa Clara Water Pollution Control Plant (WPCP or Plant) (project area), present and discuss applicable regulations, and provide associated recommendations that can be considered during the environmental review and permitting processes. The WPCP treats and cleans wastewater generated by over 1,500,000 people in the Cities of San José, Santa Clara, Milpitas, Campbell, Cupertino, Los Gatos, Saratoga, and Monte Sereno. Wastewater enters the WPCP through a series of underground pipelines that run through adjacent areas. The water gets treated to a tertiary level and treated water that is not recycled is discharged into the San Francisco Bay via Artesian Slough.

The WPCP is located at the southeastern edge of the San Francisco Bay in the Alviso Planning Area of the City of San José, California (**Figure 1**). The Plant lands encompass approximately 2,684 acres and consists of WPCP facilities and buildings, drying ponds, an outfall at Artesian Slough, and surrounding bufferlands (**Figure 2**). The City of San José plans to update the equipment and facilities within the WPCP to incorporate new technology more efficient in wastewater treatment, allow for economic development on portions of the project area which were previously drying ponds or bufferlands, and restore portions of the project area to pre-existing habitat.



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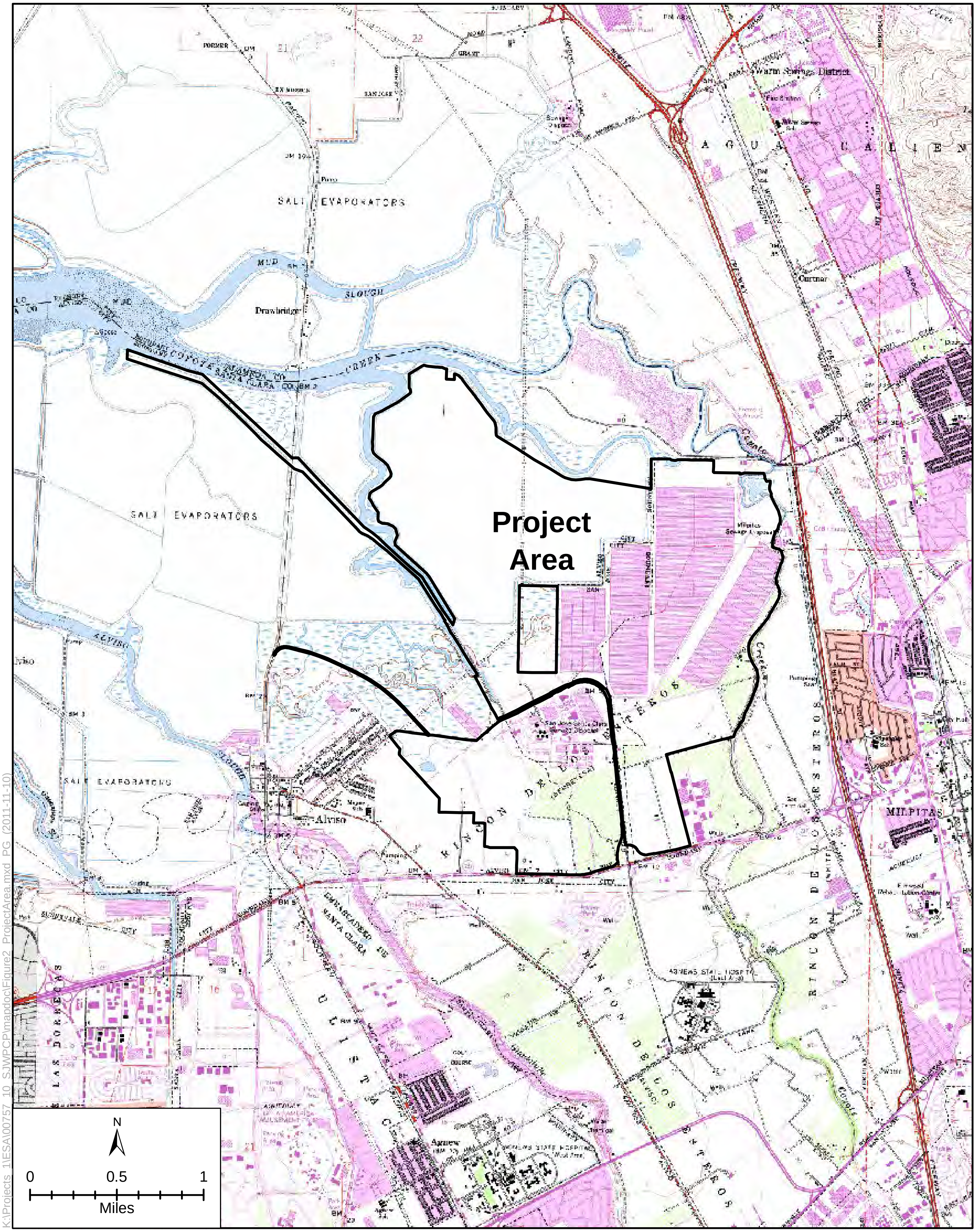
ICF INTERNATIONAL

San Jose Water Pollution Control Plant

Figure 1
Project Vicinity



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San Jose Water Pollution Control Plant

Figure 2
Project Area

Chapter 2
Regulatory Context

Federal

Federal Clean Water Act (Sections 401 and 404)

The federal Clean Water Act (CWA) is the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. As such, the CWA empowers the EPA to set national water quality standards and effluent limitations, and establishes permit review mechanisms to enforce them. The CWA operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit.

Most CWA provisions are at least indirectly relevant to the management and protection of biological resources because of the link between water quality and ecosystem health. The portions that are most directly relevant to biological resources management are contained in Section 404, which regulates the discharge of dredged and fill materials into *waters of the United States* (comprising *wetlands* and *other waters of the United States*), which include:

- all areas within the ordinary high water mark of a stream, including nonperennial streams with a defined bed and bank and any stream channel that conveys natural runoff, even if it has been realigned; and
- seasonal and perennial wetlands, including coastal wetlands.

Section 404 requires project proponents to obtain a permit from the U.S. Army Corps of Engineers (USACE) for all discharges of dredged or fill material into waters of the United States, including streams, ponds, and wetlands, before proceeding with a proposed activity. These permits may be issued only for the least environmentally damaging practicable alternative (i.e., authorization of a proposed discharge is prohibited if there is a practicable alternative that would have less adverse impacts and lacks other significant adverse consequences). Section 401 regulates water quality and is intended to ensure that permitted activities comply with the CWA and state water quality laws. Projects that affect water quality require a Section 401 Certification from the California Regional Water Quality Board (RWQCB), the regional regulatory agency responsible for issuing Section 401 certifications or waivers.

Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act (RHA) authorizes USACE to regulate the construction of any structure or work in, over, or under; excavation of material form; or deposition of material into navigable waters of the United States, including tidal waters. Navigable waters of the United States are defined as those waters subject to the ebb and flow of the tide shoreward to the mean high water mark or those that are currently used, have been used in the past, or may be susceptible to use to transport interstate or foreign commerce. A Letter of Permission or permit from USACE is required prior to any work being completed within navigable waters.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act requires that the National Oceanic and Atmospheric Administration (NOAA) Fisheries and the U.S. Fish and Wildlife Service (USFWS) be consulted when a proposed federal action may adversely affect Essential Fish Habitat. Essential Fish Habitat (EFH) is defined as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Migratory routes to and from anadromous fish spawning grounds are also considered EFH.

Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) (16 USC 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the former Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703, 50 Code of Federal Regulations [CFR] 21, 50 CFR 10). Most actions that result in taking or in permanent or temporary possession of a protected species constitute violations of the Act. Examples of permitted actions that do not violate the Act include the possession of a hunting license to pursue specific game birds; legitimate research activities; display in zoological gardens; bird-banding; and other similar activities (Faanes et al., 1992). USFWS is responsible for overseeing compliance with the MBTA, and the U.S. Department of Agriculture's Animal Damage Control Officer makes recommendations on related animal protection issues.

Federal Endangered Species Act

The federal Endangered Species Act (ESA), enacted in 1973, protects fish and wildlife species (and their habitats) that have been identified by USFWS or NOAA Fisheries as threatened or endangered. *Endangered* refers to species, subspecies, or distinct population segments in danger of extinction through all or a significant portion of their range; *threatened* refers to those likely to become endangered in the near future. The federal ESA is administered by USFWS and NOAA Fisheries. In general, NOAA Fisheries is responsible for protection of ESA-listed marine species and anadromous fish species, while other listed species are under USFWS jurisdiction.

The ESA Authorization Process for Federal Actions under Section 7 provides a means for authorizing take of threatened and endangered species by federal agencies. It applies to actions that are conducted, permitted, or funded by a federal agency. Under Section 7, the federal agency conducting, funding, or permitting an action (the lead agency) must consult with USFWS or NOAA Fisheries, as appropriate, to ensure that the proposed action will not jeopardize endangered or threatened species or destroy or adversely modify designated critical habitat. If a proposed project "may affect" a listed species or designated critical habitat, the lead agency is required to submit a biological assessment (BA) evaluating the nature and severity of the expected effect. In response, USFWS or NOAA Fisheries issues a biological opinion (BO), with a determination that the proposed action may jeopardize the continued existence of one or more listed species (jeopardy finding) or result in the destruction or adverse modification of critical habitat (adverse modification finding), or will not jeopardize the continued existence of any listed species (no jeopardy finding) or result in adverse modification of critical habitat (no adverse modification finding).

The BO issued by USFWS or NOAA Fisheries may stipulate discretionary "reasonable and prudent" conservation measures. If the project would not jeopardize a listed species, USFWS or NOAA Fisheries issues an incidental take statement to authorize the proposed activity.

State

California Fish and Game Code Section 1600

The California Fish and Game Code regulates activities that interfere with the natural flow of or substantially alter the channel, bed, or bank of a lake, river, or stream. Lake and streambed alteration activities are covered under Section 1601 for public agencies and Section 1603 for private parties. Requirements to protect the integrity of biological resources and water quality are often conditions of streambed alteration agreements administered under Section 1600 et seq.

California Endangered Species Act

The California Endangered Species Act (CESA) protects wildlife and plants listed as endangered or threatened under the act by the California Fish and Game Commission. The CESA is administered by the California Department of Fish and Game (CDFG). The CESA prohibits all persons from taking species that are state-listed as endangered or threatened except under certain circumstances; the CESA definition of *take* is any action or attempt to "hunt, pursue, catch, capture, or kill." Section 2081 provides a means by which agencies or individuals may obtain authorization for incidental take of state-listed species and species designated as "fully protected" under the California Fish and Game Code (see "California Fish and Game Code" below). Take must be incidental to, not the purpose of, an otherwise lawful activity. Requirements for a Section 2081 permit are similar to those used in the Federal ESA Section 7 process, including identification of impacts on listed species, development of mitigation measures that minimize and fully mitigate impacts, development of a monitoring plan, and assurance of funding to implement mitigation and monitoring.

California Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act provides a mechanism for protecting the quality of the state's waters through the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs). SWRCB and the San Francisco Bay RWQCB have taken the position that the act and basin plans developed pursuant to the act provide independent authority to regulate discharge of fill material to wetlands outside the jurisdiction of USACE. This position applies specifically to isolated wetlands considered nonjurisdictional based on the *Solid Waste Agency of Northern Cook County (SWANCC)* v. *United States Army Corps of Engineers* (9121 S.CT. 675, 2001) decision, which limited USACE jurisdiction over isolated wetlands.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) is the regulatory framework by which California public agencies identify and mitigate significant environmental impacts. A project normally is considered to result in a significant environmental impact on biological resources if it substantially affects a rare or endangered species or the habitat of that species; substantially interferes with the movement of resident or migratory fish or wildlife; or substantially diminishes habitat for fish, wildlife, or plants. The State CEQA Guidelines define rare, threatened, or endangered species as those listed under CESA and ESA, as well as any other species that meet the criteria of the resource agencies or local agencies (e.g., CDFG-designated "species of special concern" and species listed by the California Native Plant Society [CNPS]). The State CEQA Guidelines state that the lead agency preparing an environmental impact report (EIR) must consult with and receive written findings from CDFG concerning project impacts on species that are listed as endangered or threatened. The effects of a proposed project on these resources are important in determining whether the project has significant environmental impacts under CEQA.

California Native Plant Protection Act

The California Native Plant Protection Act (CNPPA), enacted in 1977, prohibits the import of rare and endangered plants into California, the take of rare and endangered plants, and the sale of rare and endangered plants (the "threatened" category replaced "rare" when the CESA was enacted in 1984). The CESA defers to the CNPPA, which ensures that state-listed plant species are protected when state agencies are involved in projects subject to CEQA. The removal of plants for performance of a public service by a public agency or publicly or privately owned utility is exempt from the CNPPA.

Local

Envision San José 2040 General Plan Policies

The Envision San José 2040 General Plan was in draft format at the time this report was prepared and is in the process of being updated (City of San José, 2011a). [Reviewers: ICF will confirm final version of policies now that General Plan has been approved]. The draft 2040 General Plan includes several goals and policies regarding sensitive natural communities and habitats, and special-status plants and wildlife. Goals and policies included in the draft 2040 General Plan that are applicable to future activities at the WPCP are as follows:

Goal ER-1—Grassland, Oak Woodlands, Chaparral and Coast Scrub

Preserve, protect and restore the ecological integrity and scenic characteristics of grasslands, oak woodlands, chaparral and coastal scrub in hillside areas.

Policies—Grassland, Oak Woodlands, Chaparral and Coast Scrub

- **ER-1.1** The nature and amount of public access to wooded areas, scrublands, and grasslands, when allowed, shall be consistent with the environmental characteristics of these areas.
- **ER-1.2** Prohibit the use of motorized off-road vehicles for recreation purposes in oak woodland, grassland, and hillside areas within the City to protect these limited resources.
- **ER-1.3** Cooperate with other agencies in the preservation and management of native hillside vegetation.
- **ER-1.4** Minimize the removal of ecologically valuable vegetation such as serpentine and non-serpentine grassland, oak woodland, chaparral, and coastal scrub during development and grading for projects within the City.

Goal ER-2—Riparian Corridors

Preserve, protect, and restore the City's riparian resources in an environmentally responsible manner to protect them for habitat value and recreational purposes.

Policies—Riparian Corridors

- **ER-2.2** Ensure that a 100-foot setback from riparian habitat is the standard to be achieved in all but a limited number of instances, only where no significant environmental impacts would occur.
- **ER-2.3** Design new development to protect adjacent riparian corridors from encroachment of lighting, exotic landscaping, noise and toxic substances into the riparian zone.
- **ER-2.4** When disturbances to riparian corridors cannot be avoided, implement appropriate measures to restore, and/or mitigate damage and allow for fish passage during construction.
- **ER-2.5** Restore riparian habitat through native plant restoration and removal of nonnative/invasive plants along riparian corridors and adjacent areas.

Actions—Riparian Corridors

- **ER-2.6** Develop a City Council Policy based on the City's Riparian Corridor Policy Study and Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) to successfully implement the riparian goals and policies of this General Plan, which recognizes that a 100-foot setback is the standard to be achieved in all but a limited number of instances, where no significant environmental impacts would occur.
- **ER-2.7** Partner with public, private, and non-profit t agencies on public outreach and education on the importance of protecting our riparian corridor resources.
- **ER-2.8** Develop and require the use of a criteria checklist from the Riparian Corridor Policy Study to evaluate new developments that propose to use riparian setback exceptions.

Goal ER-3—Bay and Baylands

Preserve and restore natural characteristics of the Bay and adjacent lands, and recognize the role of the Bay's vegetation and waters in maintaining a healthy regional ecosystem.

Policies—Bay and Baylands

- **ER-3.1** Protect, preserve and restore the baylands ecosystem in a manner consistent with the fragile environmental characteristics of this area and the interest of the citizens of San José in a healthful environment.
- **ER-3.2** Cooperate with the County, USACE, federal Environmental Protection Act, CDFG, Bay Conservation and Development Commission (BCDC), and other appropriate jurisdictions to prevent the degradation of baylands by discouraging new filling or dredging of Bay waters and baylands.
- **ER-3.3** In cooperation and, where appropriate, in consultation with other interested agencies and with projects such as the South Bay Salt Ponds Restoration Project, encourage the restoration of diked historic wetlands, including salt ponds, to their natural state by opening them to tidal action.

- **ER-3.4** Avoid new development which creates substantial adverse impacts on the Don Edwards San Francisco Bay National Wildlife Refuge or results in a net loss of baylands habitat value.
- **ER-3.5** Prohibit planting of invasive non-native plant species in or near baylands habitats.

Goal ER-4—Special-Status Plants and Animals

Preserve, manage, and restore habitat suitable for special-status species, including threatened and endangered species.

Policies—Special-Status Plants and Animals

- **ER-4.1** Preserve and restore, to the greatest extent feasible, habitat areas that support special-status species. Avoid development in such habitats unless no feasible alternatives exist and mitigation is provided of equivalent value.
- **ER-4.2** Limit recreational uses in wildlife refuges, nature preserves and wilderness areas in parks to those activities which have minimal impact on sensitive habitats.
- **ER-4.3** Prohibit planting of invasive non-native plant species in natural habitats that support special-status species.
- **ER-4.4** Require that development projects incorporate mitigation measures to avoid and minimize impacts to individuals of special-status species.

Action—Special-Status Plants and Animals

- **ER-4.5** Where implementation of the General Plan would result in impacts to burrowing owl habitat occupied by breeding owls in 2008 or later, providing mitigation of equivalent value shall consist of securing, protecting and managing nesting and foraging habitat in perpetuity for burrowing owls within the South Bay area such that there is no reduction in the local burrowing owl population. Mitigation shall be required for the largest number of breeding burrowing owls that have been identified nesting or foraging on a site in burrowing owl surveys since 2008. These measures are required to be implemented by individual projects unless the City develops an independent plan or participates in a regional conservation strategy (such as the Santa Clara Valley HCP) that would maintain or increase South Bay area burrowing owl populations.

Goal ER-5—Migratory Birds

Protect migratory birds from injury or mortality.

Policies—Migratory Birds

- **ER-5.1** Avoid implementing activities that result in the loss of active native birds' nests, including both direct loss and indirect loss through abandonment, of native birds. Avoidance of activities that could result in impacts to nests during the breeding season or maintenance of buffers between such activities and active nests would avoid such impacts.
- **ER-5.2** Require that development projects incorporate measures to avoid impacts to nesting migratory birds.

Goal ER-6—Urban Natural Interface

Minimize adverse effects of urbanization on natural lands adjacent to the City's developed areas.

Policies—Urban Natural Interface

- **ER-6.1** Encourage fencing between residential areas and natural lands to minimize the encroachment of people, pets, and non-native vegetation into natural lands.
- **ER-6.2** Design development at the urban/natural community interface of the Greenline/Urban Growth Boundary (UGB) to minimize the length of the shared boundary between urban development and natural areas by clustering and locating new development close to existing development. Key areas where natural communities are found adjacent to the UGB include the Baylands in Alviso, the Santa Teresa Hills, Alum Rock Park, and Evergreen.
- **ER-6.3** Employ low-glare lighting in areas developed adjacent to natural areas, including riparian woodlands. Any high-intensity lighting used near natural areas will be placed as close to the ground as possible and directed downward or away from natural areas.
- **ER-6.4** Site public facilities such as ballparks and fields that require high-intensity night lighting at least 0.5 mile from sensitive habitats to minimize light pollution, unless it can be demonstrated that lighting systems will not substantially increase lighting within natural areas (e.g., due to screening topography or vegetation).
- **ER-6.5** Prohibit use of invasive species, citywide, in required landscaping as part of the discretionary review of proposed development.
- **ER-6.6** Encourage the use of native plants in the landscaping of developed areas adjacent to natural lands.
- **ER-6.7** Include barriers to animal movement within new development and, when possible, within existing development, to prevent movement of animals (e.g., pets and wildlife) between developed areas and natural habitat areas where such barriers will help to protect sensitive species.
- **ER-6.8** Design and construct development to avoid changes in drainage patterns across adjacent natural areas and for adjacent native trees, such as oaks.

Action—Urban Natural Interface

- **ER-6.9** Work with landowners, landscapers, nurseries, and the multi-agency Santa Clara County Weed Management Area to remove and prevent the spread of highly invasive and noxious weeds. Invasive plants are those plants listed in the State's Noxious Weed List, the California Invasive Plant Council's list of "Exotic Pest Plants of Greatest Ecological Concern in California," and other priority species identified by the agricultural commissioner and California Department of Agriculture.
- **ER-6.10** Update the Riparian Corridor Policy Study and all City design guidelines based on guidance from Responsible Agencies on best practices for lighting to protect sensitive habitats and species, including birds and bats.

Goal ER-7—Wildlife Movement

Minimize adverse effects of future development on wildlife movement and remove or reduce existing impediments to wildlife movement.

Policies—Wildlife Movement

- **ER-7.1** In the area north of Highway 237 design and construct buildings and structures using bird-friendly design and practices to reduce the potential for bird strikes for species associated with the baylands or the riparian habitats of lower Coyote Creek.
- **ER-7.2** In areas important to terrestrial wildlife movement, design new or improved existing roads so that they allow wildlife to continue to move across them (e.g., either over the road surface or through undercrossings or overcrossings designed for the animals moving through the areas). Enhance undercrossings used for wildlife movement (e.g., by enlargement) when roads are improved.
- **ER-7.3** Where new road crossings of streams are constructed, or existing culverts are replaced or improved, design them to allow movement of aquatic species present in any watercourse crossed by the road. Use clear-span bridges in place of culverts where feasible.

Action—Wildlife Movement

- **ER-7.4** To facilitate the movement of wildlife across Coyote Valley, work with the appropriate transportation agencies to replace portions of the median barrier on Monterey Road with a barrier that maintains human safety while being more permeable to wildlife movement and implement other improvements to benefit wildlife movement.
- **ER-7.5** Support the ongoing identification and protection of critical linkages for wildlife movement in the Mid-Coyote Valley.
- **ER-7.6** Update the Riparian Corridor Policy Study and City design guidelines based on guidance from Responsible Agencies and other interested organizations on best practices for avoiding and minimizing bird strikes at new tall buildings.

Goal ER-8—Stormwater

Minimize the adverse effects on ground and surface water quality and protect property and natural resources from stormwater runoff generated in the City of San José.

Policies—Stormwater

- **ER-8.1** Manage stormwater runoff in compliance with the City's Post-Construction Urban Runoff (6-29) and Hydromodification Management (8-14) Policies.
- **ER-8.2** Coordinate with regional and local agencies and private landowners to plan, finance, construct, and maintain regional stormwater management facilities.
- **ER-8.3** Ensure that private development in San José includes adequate measures to treat stormwater runoff.
- **ER-8.4** Assess the potential for surface water and groundwater contamination and require appropriate preventative measures when new development is proposed in areas where storm runoff will be directed into creeks upstream from groundwater recharge facilities.

- **ER-8.5** Ensure that all development projects in San José maximize opportunities to filter, infiltrate, store and reuse or evaporate stormwater runoff onsite.
- **ER-8.6** Eliminate barriers to and enact policies in support of the reuse of stormwater runoff for beneficial uses in existing infrastructure and future development in San José.
- **ER-8.7** Encourage stormwater reuse for beneficial uses in existing infrastructure and future development through the installation of rain barrels, cisterns, or other water storage and reuse facilities.
- **ER-8.8** Consider the characteristics and condition of the local watershed and identify opportunities for water quality improvement when developing new or updating existing development plans or policies including, but not limited to, specific or area land use plans.

Actions—Stormwater

- **ER-8.9** Partner with public, private, and non-profit agencies on public outreach and education on the importance of responsible stormwater management.
- **ER-8.10** Participate in the Santa Clara Valley Urban Runoff Pollution Prevention Program (SVURPPP) and take other necessary actions to formulate and meet regional water quality standards which are implemented through the National Pollution Discharge Elimination System (NPDES) permits and other measures.

Goal ER-9—Water Resources

Protect water resources because they are vital to the ecological and economic health of the region and its residents.

Policies—Water Resources

- **ER-9.1** In consultation with the Santa Clara Valley Water District (SCVWD), other public agencies and the SCVWDs Water Resources Protection Guidelines and Standards (2006 or as amended), restrict or carefully regulate public and private development in streamside areas so as to protect and preserve the health, function and stability of streams and stream corridors.
- **ER-9.2** In consultation with the SCVWD restrict or carefully regulate public and private development in upland areas to prevent uncontrolled runoff that could impact the health and stability of streams.
- **ER-9.3** Utilize water resources in a manner that does not deplete the supply of surface or groundwater or cause overdrafting of the underground water basin.
- **ER-9.4** Work with the SCVWD to preserve water quality by establishing appropriate public access and recreational uses on land adjacent to rivers, creeks, wetlands, and other significant water courses.
- **ER-9.5** Protect groundwater recharge areas, particularly creeks and riparian corridors.
- **ER-9.6** Require the proper construction and monitoring of facilities that store hazardous materials in order to prevent contamination of the surface water, groundwater and underlying aquifers. In furtherance of this policy, design standards for such facilities should consider high groundwater tables and/or the potential for freshwater or tidal flooding.

Goal ER-11—Extractive Resources

Conserve and make prudent use of commercially usable extractive resources.

Policies—Extractive Resources

- **ER-11.1** When urban development is proposed on lands which have been identified as containing commercially usable extractive resources, consider the value of those resources.
- **ER-11.2** Encourage the conservation and development of Surface Mining and Reclamation Act (SMARA)-designated mineral deposits wherever economically feasible.
- **ER-11.3** When making land use decisions involving areas which have a SMARA designation of regional significance, balance mineral values against alternative land uses and consider the importance of these minerals to their market region as a whole and not just their importance to San José.
- **ER-11.4** Carefully regulate the quarrying of commercially usable resources, including sand and gravel, to mitigate potential environmental effects such as dust, noise and erosion.
- **ER-11.5** When approving quarrying operations, require the preparation and implementation of reclamation plans for the contouring and revegetation of sites after quarrying activities cease.

City of San José Tree Ordinance

The City of San José requires a Tree Removal Permit for the removal of any tree on private property which has a trunk circumference (measured two feet above grade) of 56 inches or greater (City of San José Municipal Code Section 13.32.020 I). For multi-family residences and for commercial and industrial properties, a Permit is required for the removal of trees of any size. For removal of trees that are equal to or greater than 56 inches in circumference, a Tree Removal Permit is required and a Permit Adjustment is required for multi-family residences and for commercial and industrial properties. For removal of trees less than 56 inches in circumference on multi-family residences and for commercial and industrial properties a Permit Adjustment is required.

City of San José Riparian Corridor Policy

The City of San José Riparian Corridor Policy Study (1994) identifies numerous streams and riparian corridors found within San José and provides guidelines on how development should be designed to protect and preserve riparian corridors. These guidelines are used in the development review process usually resulting in a 100-foot setback from the outside edge of riparian habitat (or top of bank, whichever is greater) for new development as well as other techniques to protect water quality and fish and wildlife habitat. The Study defines a riparian corridor as "any defined stream channel including the area up to the bank full-flow line, as well as all riparian vegetation in contiguous adjacent uplands. Stream channels include all perennial and intermittent streams shown as a solid or dashed blue line on U.S. Geological Survey (USGS) topographic maps, and ephemeral streams with well-defined channels and some evidence of scour or deposition" (City of San José, 1994).

Santa Clara Valley HCP/NCCP

In December 2010, the County of Santa Clara; Santa Clara Valley Transportation Authority; Santa Clara Valley Water District; and the Cities of Gilroy, Morgan Hill, and San José (collectively referred to as the Local Partners) released for public review the Draft Santa Clara Valley Habitat Plan (an HCP/NCCP)(Santa Clara Valley Habitat Plan, 2010). This Plan promotes the protection and recovery of covered species while accommodating planned public and private development, infrastructure, and maintenance activities. The Plan is being developed in association with USFWS and CDFG in consultation with a stakeholder group and the general public. The Plan's goal is to protect and enhance ecological diversity in over 500,000 acres of Santa Clara County. To fulfill this goal the Plan has five primary objectives:

- Facilitate future public- and private-sector activities, consistent with adopted General Plans and infrastructure programs, by streamlining the endangered species permitting and approval process.
- Use a science-based approach to identify, prioritize, acquire, and manage land, in order to benefit endangered and other at-risk species.
- Integrate existing and new open space, in order to achieve habitat protection through conservation of high-quality open space areas.
- Establish corridors between areas of critical habitat, in order to facilitate the movement and survival of species.
- Establish and maintain partnerships with public and private sector organizations, in order to make best use of existing and new resources for habitat protection and conservation activities.

If adopted, the Plan would provide a framework for the Local Partners and landowners to implement projects consistent with current general plans and other local planning policies, while protecting at-risk species and their habitats.

The upgrade of facilities and subsequent land use activities at the WPCP are not listed as "covered activities" under the Santa Clara Valley Habitat Plan. The southern third of the project area is within the Santa Clara Valley Habitat Plan study area. The entire project area is within the Expanded Burrowing Owl Conservation Area identified in the Plan and the project area is discussed at length in the draft burrowing owl conservation strategy that was developed as part of the Plan.

South Bay Salt Pond Restoration Project

The South Bay Salt Pond Restoration Project's goal is to restore 15,100 acres of industrial salt ponds to managed ponds, tidal salt marsh, slough, and wetlands. The Project aims to restore and enhance various wetland habitats, provide flood management in the South Bay, and provide wildlife-oriented public access and recreation. The South Bay Salt Pond Restoration Project will increase the amount of salt marsh and South Bay wetland habitat, which is ultimately expected to benefit several sensitive plant and animal species associated with South Bay wetland habitats. The Project was initiated in 2003 when state and federal agencies and private foundations purchased the ponds from Cargill Inc. and restoration efforts are ongoing (South Bay Salt Pond Restoration, 2011). In 2010, an annual report indicated that the Project is approximately 15% complete (South Bay Salt Pond Restoration, 2010). Salt Ponds within the South Bay Salt Pond Restoration Project boundary and adjacent to the project area are Salt Ponds A16, A17, A19, A20, and A21. Salt Pond A18 is not included in the South Bay Salt Pond Restoration Project but was purchased by the City of San José and is part of the PMP planning area.

Chapter 3
General Project Area Description

Location

The project area is located in the northern portion of the City of San José, within Santa Clara County. Specifically, the project area is situated within Range 1 West, Township 6 South, in an unsectioned area of the Milpitas 7.5-minute USGS quad (U.S. Geological Survey, 1961). The project area is generally bounded by State Route 237 (SR 237) to the south, North McCarthy Boulevard to the east, Dixon Landing Road to the north, and Disk Drive to the west.

Topography and Elevation

The project area is generally characterized by gently sloping to relatively flat areas draining in a northwest direction with manmade topographic alterations, including levees and dikes, building pads, drying/treatment ponds, a salt pond, and railroad and road grades. The topography of the project area ranges from below mean sea level to approximately 20 feet above mean sea level (MSL).

Climate and Hydrology

The climate of the project area is Mediterranean; characterized by cool, wet winters and hot, dry summers with the majority of rainfall experienced during the winter and early spring months. Average annual precipitation is approximately 14.88 inches (Bureau of Soils, 1903). [Reviewers: we have an inconsistency in total rainfall for the area between this memo and the Surface Hydrology memo. Will correct before finalizing the memos] The project area is in the Coyote Creek and Guadalupe River watersheds. The area is drained primarily by two creeks, the Guadalupe and Coyote. Alviso Slough, a portion of which is found in the project area, is the last reach of the Guadalupe River before it enters San Francisco Bay.

Soils

Soils within the project area consist of aquic xerorthents, bay mud substratum, 0–2% slopes; Campbell silt loam, 0–2% slopes, protected; Clear Lake silty clay, 0–2% slopes, drained; Elder fine sandy loam, 0–2% slopes, rarely flooded; Elder find sandy loam, 0–2% slopes, protected; Embarcadero silty clay loam, 0–2% slopes, drained; Novato clay, 0–1% slopes, protected; Novato clay, 0–1% slopes, tidally flooded; Novato silty clay loam, excessive salinity, 0–1% slopes, protected; urban land, 0–2% slopes, basins; xerorthents, trash substratum, 15–30% slopes; and xerorthents, trash substratum, 0–2% slopes (**Figure 3**) (National Resource Conservation Service, 2011).

Aquic xerorthents, bay mud substratum, 0–2% slopes
This soil type occurs from 0 to 10 feet above MSL and is derived from mixed human transported

material over silty and clayey fluviomarine deposits on marshes. It is a poorly drained soil, with moderately low to moderately high permeability and is not frequently ponded or flooded.

Campbell silt loam, 0–2% slopes, protected
This soil type occurs from 0 to 80 feet above MSL and is derived from alluvium from metamorphic and sedimentary rock and/or alluvium derived from metavolcanics on alluvium fans. It is a moderately well-drained soil, with moderately low to moderately high permeability and is not frequently flooded or ponded.

Clear Lake silty clay, 0–2% slopes, drained
This soil type occurs from 0 to 600 feet above MSL and is derived from alluvium from metamorphic and sedimentary rock and/or alluvium derived from metavolcanics on basin floors. It is a poorly drained soil, with moderately low to moderately high permeability and is not frequently flooded or ponded.

Elder fine sandy loam, 0–2% slopes, rarely flooded
This soil type occurs from 0 to 430 feet above MSL and is derived from alluvium from metamorphic and sedimentary rock and/or alluvium derived from metavolcanics in streams. It is a somewhat excessively drained soil, with high permeability that is rarely flooded and not frequently ponded.

Elder find sandy loam, 0–2% slopes, protected
This soil type occurs from 0 to 270 feet above MSL and is derived from alluvium from metamorphic and sedimentary rock and/or alluvium derived from metavolcanics in streams and channels. It is a somewhat excessively drained soil, with high permeability and is not frequently flooded or ponded.

Embarcadero silty clay loam, 0–2% slopes, drained
This soil type occurs from 0 to 20 feet above MSL and is derived from alluvium from metamorphic and sedimentary rock and/or alluvium derived from metavolcanics on basin floors. It is a very poorly drained soil, with moderately low to moderately high permeability and is not frequently flooded or ponded.

Novato clay, 0–1% slopes, protected
This soil type occurs from 0 to 10 feet above MSL and is derived from alluvium from metamorphic and sedimentary rock and/or alluvium derived from metavolcanics in marshes. It is a very poorly drained soil, with very low to moderately high permeability and is not frequently flooded, but is frequently ponded.

Novato clay, 0–1% slopes, tidally flooded
This soil type occurs from 0 to 10 feet above MSL and is derived from alluvium from metamorphic and sedimentary rock and/or alluvium derived from metavolcanics in marshes. It is a very poorly drained soil, with very low to moderately high permeability and is not frequently flooded, but is very frequently ponded.

Novato silty clay loam, excessive salinity, 0–1% slopes, protected
This soil type occurs from 0 to 10 feet above MSL and is derived from alluvium from metamorphic and sedimentary rock and/or alluvium derived from metavolcanics in salt ponds. It is a very poorly drained soil, with very low to moderately high permeability and is not frequently flooded, but is frequently ponded.

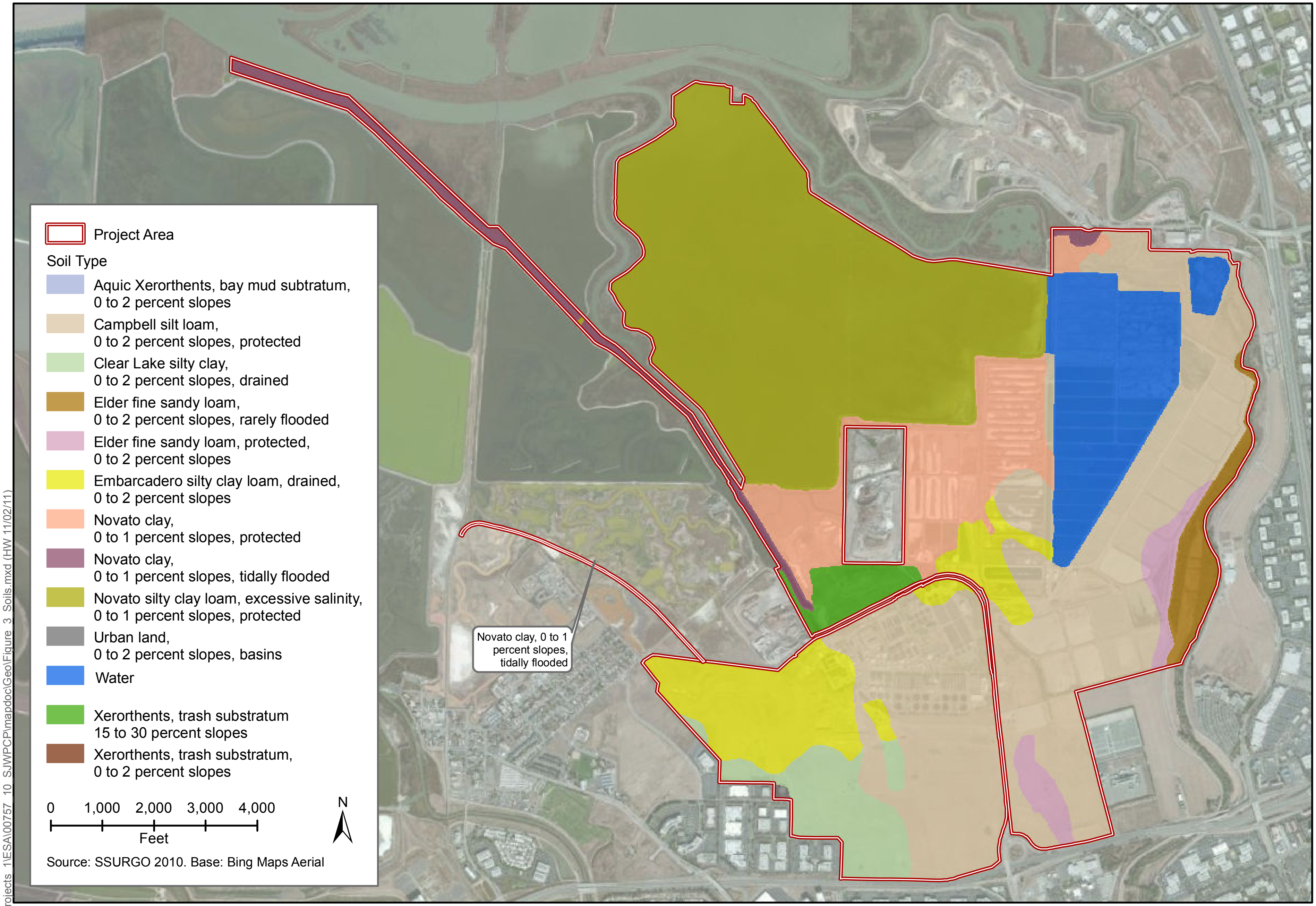

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Figure 3
Soil Types in the Project Area

Urban land, 0–2% slopes, basins
This soil type occurs from 0 to 80 feet above MSL and is derived from human transported material on basin floors and marshes.

Xerorthents, trash substratum, 15–30% slopes
This soil type occurs from 0 to 10 feet above MSL and is from disturbed and human transported material on basin floors and marshes. It is a well drained soil, with moderately low to moderately high permeability and is not frequently flooded or ponded.

Xerorthents, trash substratum, 0–2% slopes
This soil type occurs from 0 to 10 feet above MSL and is derived from human transported material on basin floors. It is a well drained soil, with moderately low to moderately high permeability and is not frequently flooded or ponded.

Land Use

Land uses surrounding the project area include interstate transport on SR 237 and commercial development to the south, commercial and residential development to the west, salt ponds to the north, and recreation uses (Coyote Creek Trail) and commercial development to the east. The project area is used for wastewater treatment, refuse disposal (landfill), and grazing (bufferlands).

Chapter 4
Existing Biological Resources

Methodology

Literature Reviewed

The following literature was reviewed for analysis of biological resources found in the WPCP project area.

- San José/Santa Clara Water Pollution Control Plant/Pond A18 Master Planning: Plant Lands Opportunities and Constraints Assessment Final. Prepared by H.T. Harvey & Associates. January 30, 2007 (H.T. Harvey & Associates, 2007)
- California Natural Diversity Database (CNDDB) search of the following USGS 7.5-minute quadrangles: Reservoir, Cupertino, La Costa Valley, Newark, Mountain View, San José West, San José East, Milpitas, Niles (**Figures 4 and 5**) (Appendix A)(CNDDB, 2011)
- CNPS Inventory of Rare and Endangered Plants Database (California Native Plant Society, 2011) search of the above USGS quadrangles
- U.S. Fish and Wildlife Service (USFWS, 2011) list of special-status species (Appendix B) (U.S. Fish and Wildlife Service, 2011)
- Bufferlands Interim Burrowing Owl Management Plan (Appendix D) (Trulio *et al.*, 2012).

Field Study

An ICF International botanist and wildlife biologist surveyed the project area on August 16–18, September 22, and October 6, 7, 12, and 14, 2011, to collect information on and map habitats, including wetlands and streams, and to survey for and evaluate the potential for occurrence of special-status plant and wildlife species. Additionally, protocol-level surveys for western burrowing owl were conducted June 1 and 6, and July 11 and 12, 2011. While these surveys were conducted specifically for burrowing owl, other data concerning habitats and other biological aspects of the project area were collected. The results of the protocol-level burrowing owl surveys are included in Appendix C. The surveys consisted of traversing the bufferlands and accessible undeveloped portions of the project area on foot. Water treatment ponds, salt marsh, portions of the landfill, and developed portions of the project area were surveyed using a combination of methods. Portions of these habitats and inaccessible areas were surveyed from a nearby vantage point with binoculars. Biological communities were mapped on an aerial photograph of the project area (see **Figure 6**). Wetlands within the project area were inspected in the field using USACE's three parameter criteria as specified in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers, 2008). Wetlands were mapped using a Trimble GeoXT GPS unit capable of sub-meter accuracy and existing data collected by H.T. Harvey (H.T. Harvey & Associates, 2007) that was verified in the field. Wetland shapefiles and spatial data were converted into graphics via ArcGIS 10 software by a geographic information systems (GIS) specialist.

The botanical survey was conducted according to CDFG *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations* (CDFG, 2009) and CNPS *Botanical Survey Guidelines* (2001). The guidelines are intended to determine when a botanical survey is needed, who should be considered qualified to conduct such surveys, how surveys should be conducted, and what information should be contained in the survey report.

During the field surveys, plant species were identified to the lowest taxonomic level possible (species, subspecies, or variety) based on the availability of flowers, fruits, or other diagnostic features. All plants were identified to a level necessary and possible to determine whether they qualified as special-status plant species. In general, survey intensity varied depending on species richness, habitat type and quality, and the probability of special-status plants occurring in a particular habitat type. The botanists walked meandering transects through all accessible portions of the project area with natural vegetation.

Vegetation Communities

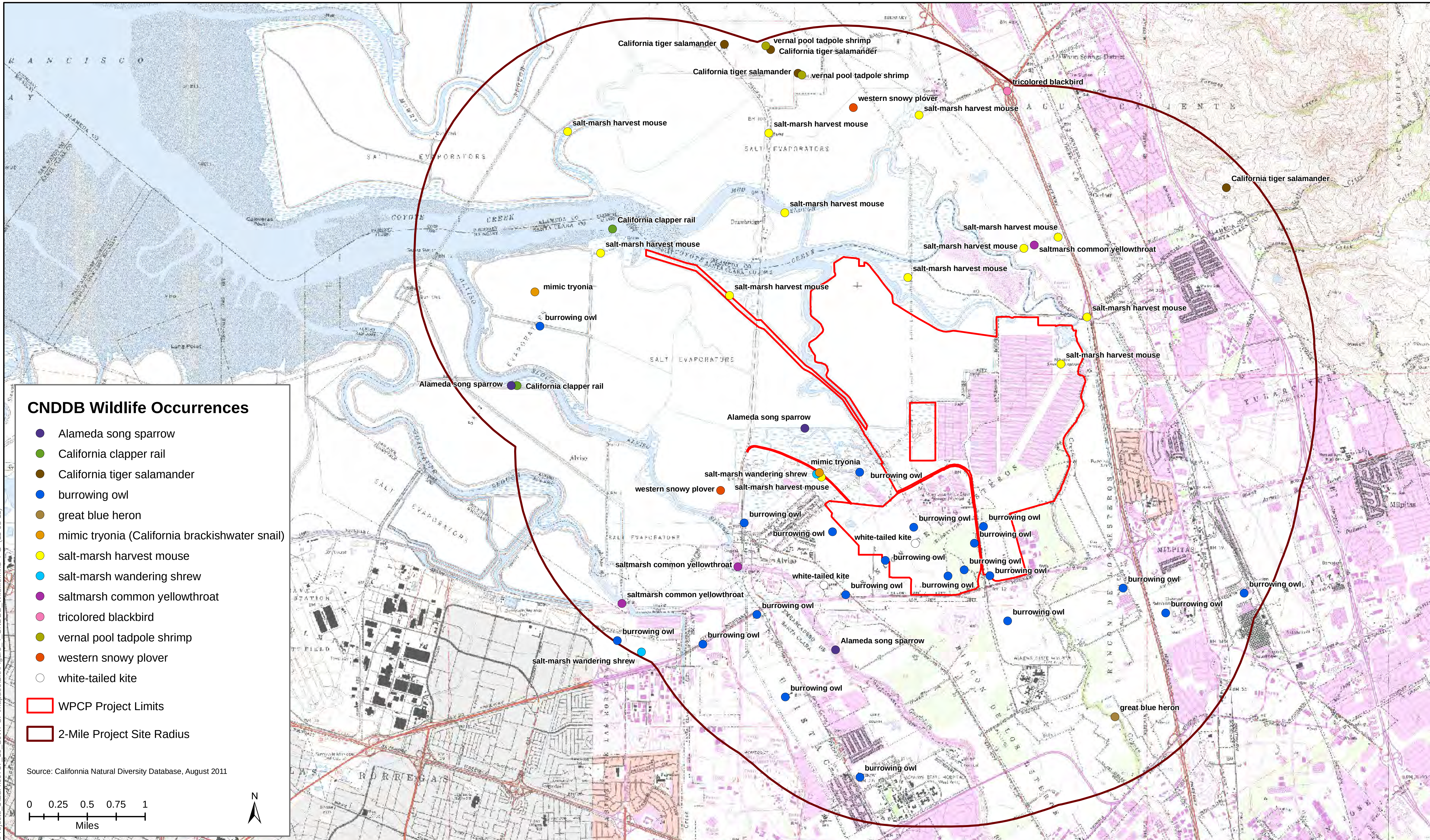
Vegetation communities occurring within the project area include non-native annual grassland, alkali grassland, seasonal wetland, freshwater marsh, non-tidal salt marsh, tidal salt marsh, non-tidal brackish marsh, tidal freshwater marsh, salt panne, salt pond, bareground/peripheral halophyte zone, open water, riparian woodland, coyote brush scrub, disturbed/ruderal, biosolids lagoons and drying beds, and developed/landscaped areas.

Non-Native Annual Grassland

There are approximately 258.8 acres of annual grassland habitat in the project area (Figure 6).

Non-native annual grassland occurs primarily in the bufferlands. This habitat is characterized by sparse to dense cover of non-native grasses and forbs. Annual grasslands in the project area were dominated by wild oats (*Avena* sp.), barley (*Hordeum murinum* ssp. *leporinum, H. marinum*), soft brome (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), and Italian ryegrass (*Lolium multiflorum*). Non-native forbs, such as bristly oxtongue (*Picris echioides*), prickly lettuce (*Lactuca serriola*), black mustard (*Brassica nigra*), Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), bull thistle (*Cirsium vulgare*), stinkwort (*Dittrichia graveolens*), and curly dock (*Rumex crispus*) are also common in annual grassland in the project area. Native species sporadically observed in annual grassland include horseweed (*Conyza canadensis*), tall annual willowherb (*Epilobium brachycarpum*), remnant patches of alkali heath (*Frankenia salina*), saltgrass (*Distichlis spicata*), and pickleweed (*Salicornia virginica*). Additionally, individuals of Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), a California Rare Plant Rank (CRPR) 1B.2 plant, were observed scattered throughout annual grassland in the bufferlands. Non-native annual grassland in the southern portion of the project area was actively being grazed by domestic goats (*Capra aegagrus hircus*) and sheep (*Ovis aries*) during field surveys in 2011.

Non-native annual grasslands support insects, amphibians, reptiles, and small birds and mammals that are preyed on by other wildlife, including red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparvarius*), western burrowing owl (*Athene cunicularia hypugaea*), turkey vulture (*Cathartes aura*), and coyote (*Canis latrans*). Grasslands near open water and woodland habitats are used by the most wildlife species (compared to other grasslands) because they provide places for resting, breeding, and



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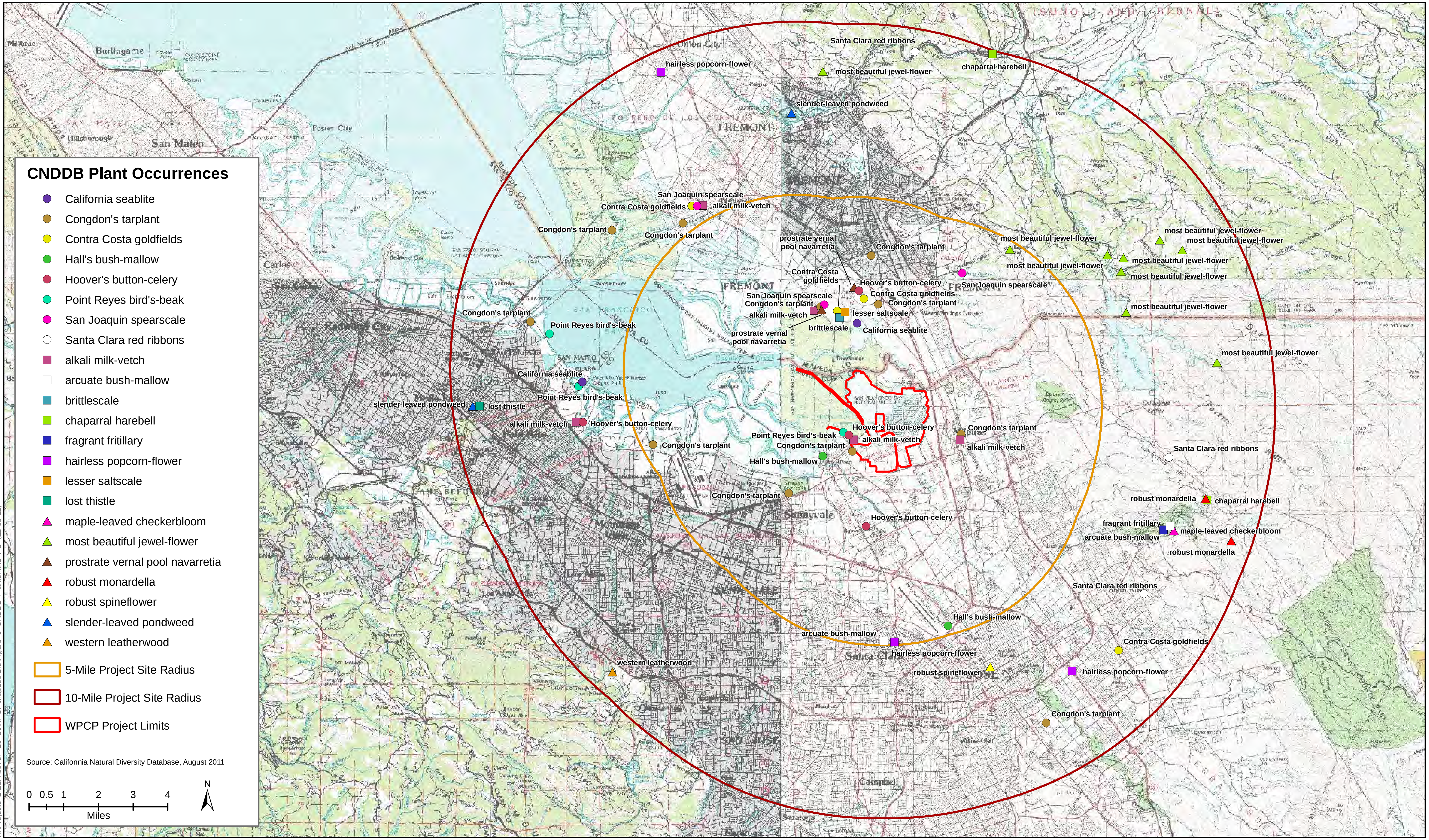
San Jose Water Pollution Control Plant
Figure 4
CNDDB Special-status Wildlife Occurrences



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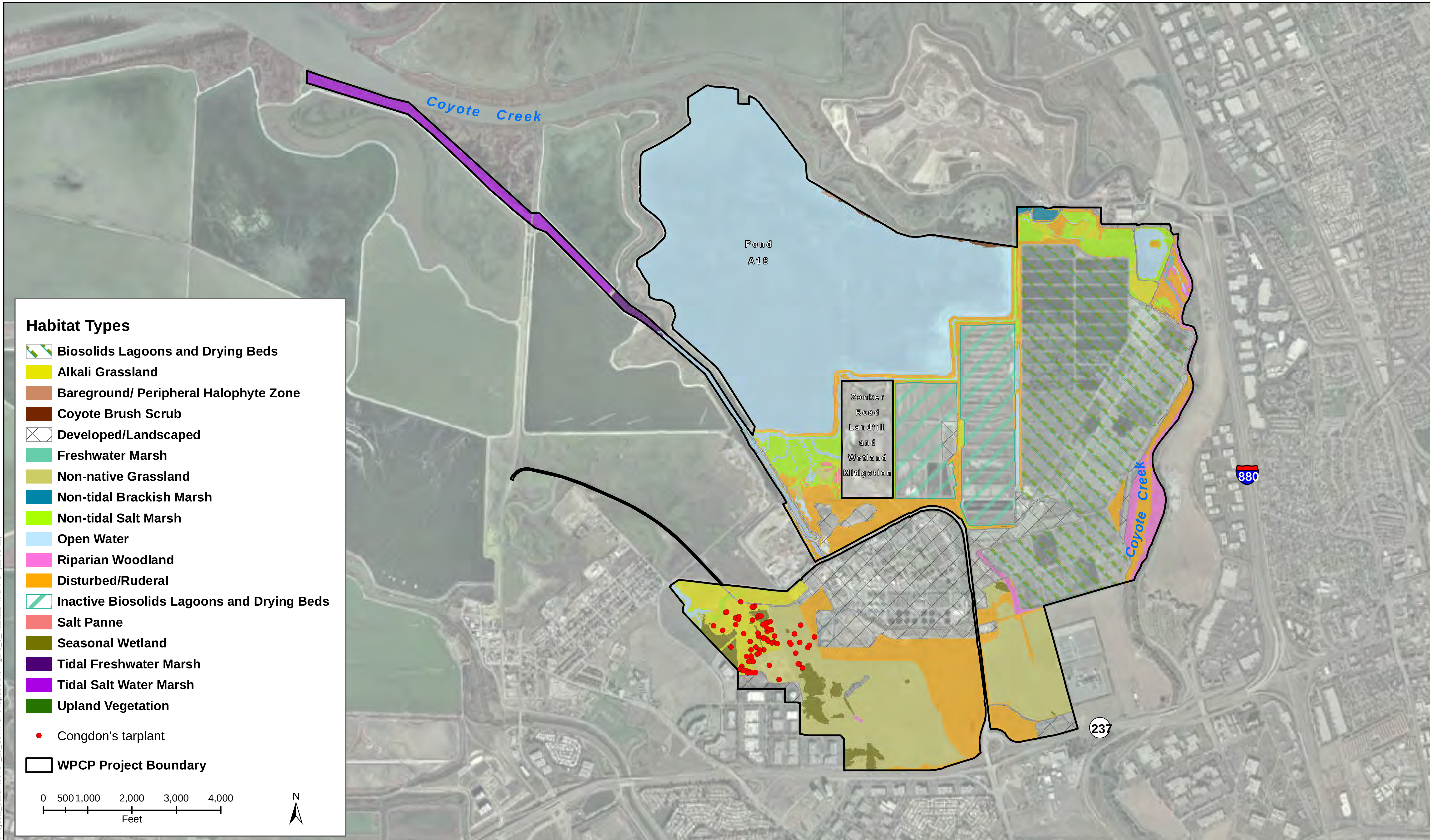
San Jose Water Pollution Control Plant
Figure 5
CNDDB Special-status Plant Occurrences



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San Jose Water Pollution Control Plant

Figure 6
Habitats in the Project Area

escape cover for species that breed in these adjacent habitats. Other wildlife species commonly observed within grasslands include black-tailed hare (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*), striped skunk (*Mephitis mephitis*), western fence lizard (*Sceloporus occidentalis*), ring-necked pheasant (*Phasianus colchicus*), mourning dove (*Zenaida macroura*), song sparrow (*Melospiza melodia*), western meadowlark (*Sturnella neglecta*), red-winged blackbird (*Agelaius phoenicus*), and mallard (*Anas platyrhynchos*).

Alkali Grassland

There is approximately 69.8 acres of alkali grassland habitat in the project area (Figure 6).

Alkali grasslands in the project area occur in the west corner of the bufferlands and adjacent to non-tidal salt marsh in the northeast corner of the project area, between the inactive biosolids lagoons and drying beds, and adjacent to non-tidal salt marsh west of the Zanker Road landfill (Figure 6). Dominant grasses in alkali grasslands include saltgrass and wild barley (*Hordeum murinum, H. marinum*); however, soft brome, ripgut brome, and Italian ryegrass were also observed in alkali grassland habitat. Forb species observed in alkali grasslands include alkali heath, pickleweed, spearscale (*Atriplex triangularis*), alkali mallow (*Malvella leprosa*), and perennial pepperweed (*Lepidium latifolium*). Individuals of Congdon’s tarplant were observed in alkali grasslands in the bufferlands in the southwest corner of the project area.

Many of the wildlife species found in non-native grassland habitat also use alkali grassland due to the similarity of the habitat types. Due to the proximity of alkali grasslands to saltwater wetland habitat, some species associated with saltwater wetlands will also use some portion of alkali grasslands.

Seasonal Wetland

There is approximately 32.6 acres of seasonal wetland habitat in the project area (Figure 6). Seasonal wetlands in the project area may be considered jurisdictional wetlands by USACE or the San Francisco Regional Water Quality Control Board (SFRWQCB).

Seasonal wetlands are wetlands that support ponded or saturated soil conditions during the winter and spring, but then are dry through summer and fall. Seasonal wetland habitat in the project area occurs scattered throughout the project area (Figure 6). The majority of the seasonal wetlands occur in the western portion of the bufferlands where the dominant vegetation includes curly dock, cocklebur (*Xanthim strumarium*), Italian ryegrass, Mediterranean barley, rabbitsfoot grass (*Polypogon monspeliensis*), and hyssop loosestrife (*Lythrum hyssopifolium*).

Two small seasonal wetlands were observed within the non-native annual grassland in the southeast corner and in the center of the bufferlands. The dominant vegetation consisted of swamp pricklegrass (*Crypsis schoenoides*), rabbitsfoot grass, and curly dock. The seasonal wetland in the center of the bufferlands was an isolated wetland that appeared to be created by a leaking pipe. Vegetation in this area consisted of cattail (*Typha* sp.), bulrush (*Scirpus* sp.),baltic rush (*Juncus balticus*), Bgrass (*Cynodon dactylon*) and rabbitsfoot grass.

Additionally, small areas of seasonal wetland were observed adjacent to riparian woodland in the northeast corner of the bufferlands adjacent to the southern biosolids lagoons and drying beds, and adjacent to Coyote Creek in the eastern edge of the project area (Figure 6). The small seasonal wetland adjacent to riparian woodland in the northeast corner of the bufferlands is a low-quality wetland consisting primarily of non-native weedy species including Bermudagrass, bristly oxtongue, everlasting cudweed (*Gnaphalium luteoalbum*), and Italian ryegrass. Native species also observed in this area include western goldenrod (*Euthamia occidentalis*), bulrush (*Scirpus* sp.), and tall flatsedge (*Cyperus eragrostis*). This wetland appeared to be maintained by artificially created ditches that collect runoff from the adjacent intermittent drainage.

Dominant vegetation observed in the seasonal wetland associated with Coyote Creek includes mugwort (*Artemisia douglasiana*), goldenrod, mulefat (*Baccharis salicifolia*), Douglas aster (*Syphyotrichum subspicatum*), and perennial pepperweed.

Seasonal wetlands can support a variety of invertebrates and amphibians that, in turn, provide food for many other wildlife species, such as great blue heron (*Ardea herodias*), great egret (*Aredea alba*), mallard, song sparrow, American avocet (*Recurvirostra americana*), killdeer (*Charadrius vociferus*),western meadowlark, and greater yellowlegs (*Tringa melanoleuca*). While only song sparrow and killdeer were observed within this habitat during surveys of the project area, the other species mentioned within this habitat may potentially occur in seasonal wetlands.

Freshwater Marsh

There is approximately 2.0 acres of freshwater marsh habitat in the project area (Figure 6). These areas may be considered jurisdictional wetlands by USACE or the SFRWQCB.

Freshwater marshes are areas dominated by emergent herbaceous wetland plants in areas that are either intermittently flooded or contain perennially saturated soils. Two small areas of freshwater marsh were observed in the project area. One is located in the northeastern corner of the project area near Coyote Creek and the other is located along the Artesian Slough. Dominant vegetation in this area includes dense stands of bulrush and cattail.

Wildlife species observed within freshwater marsh habitats in the project area include mosquito fish (*Gambusia affinis*), mallards, great egret, black-necked stilt (*Himantopus mexicanus*), black phoebe (*Sayornis nigricans*), song sparrow, red-winged blackbird (*Agelaius phoeniceus*), and coot (*Fulica americana*). Freshwater marshes and other freshwater wetlands provide numerous species of wildlife with valuable sources of drinking water, and function to draw species that are preyed upon by larger predators during times when water sources are limited. As such, freshwater wetlands typically support a wide variety of wildlife, beyond species that exclusively utilize freshwater wetlands.

Non-Tidal Salt Marsh

There is approximately 75.2 acres of non-tidal salt marsh habitat in the project area (Figure 6).

Non-tidal salt marsh occurs higher in the marsh than tidal salt marsh and is not frequently inundated by tidal water. Many areas of non-tidal salt marsh in the South Bay and in the project area have been cut off from tidal action by manmade obstructions, such as levees, dikes, access roads, and other hydrologic impediments. Non-tidal salt marsh habitat is found in several locations in the project area including in the northeast corner north of the water treatment ponds; in the western edge of the project area, south of Pond A18; in the northwest portion of the bufferlands, between the private landfill and the inactive biosolids lagoons and drying beds; and between the inactive and active biosolids lagoons and drying beds. Dominant plant species comprising this habitat include pickleweed, alkali heath, and saltgrass. Other species observed in non-tidal salt marsh habitat in the project area include spearscale perennial pepperweed, five horn bassia (*Bassia hysssopifolia*), dodder (*Cuscuta* sp.), salt grass, ripgut brome and soft brome.

Wildlife species that use non-tidal salt marsh are the same as those that are expected to be found in upper, more stable portions of tidal salt marsh because of the similarity of physical habitat characteristics. These species include fossorial mammals (e.g., California ground squirrel, California vole, salt marsh harvest mouse) and their predators (e.g., red fox, coyote, turkey vulture, western burrowing owl, American kestrel, and red-tailed hawk), various species of shorebirds and wading birds (e.g., killdeer, great egret, great blue heron), song sparrow, and western fence lizard.

Tidal Salt Marsh

There is approximately 41.9 acres of tidal salt marsh habitat in the project area (Figure 6).

Tidal salt marsh habitat was identified within the northwestern potion of the project area along Artesian Slough. As the name indicates, this salt marsh habitat is influenced by tidal action, resulting in areas that are periodically flooded by tidal waters. The fluctuation of tidal water, with varying degrees of salinity, precludes vegetation from becoming established in deeper portions of channels. Vegetation within this habitat type includes pickleweed, cordgrass (*Spartina* sp.), alkali Russian thistle (*Salsola soda*), perennial pepperweed, and spearscale.

Tidal salt marsh in the project area may be considered jurisdictional wetlands by USACE or the SFRWQCB. Tidal salt marsh habitat supports insects, reptiles, and small birds and mammals that are preyed upon by other wildlife, including western burrowing owl, red-tailed hawk, northern harrier, American kestrel, great egret, California clapper rail (*Rallus longirostris obsoletus*), red fox (*Vulpes vulpes*) and coyote(*Canis latrans*). Tidal salt marsh provides high-value habitat for many small mammals, including salt marsh harvest mouse, and large predatory species that take advantage of ease of movement through the relatively open areas and opportunities to prey upon any aquatic species that may have been marooned as the tide draws down. Other wildlife species observed include California vole, California ground squirrel, American crow (*Corvus brachyrhynchos*), black-necked stilt, black-tailed jackrabbit, song sparrow, California vole (*Microtus californicus*), and western fence lizard.

Non-tidal Brackish Marsh

There is approximately 3.8 acres of non-tidal brackish marsh habitat in the project area (Figure 6).

Brackish marsh habitat in the South Bay typically occurs in the low-to-mid intertidal reaches of sloughs and creeks draining into the San Francisco Bay (H.T. Harvey and Associates, 2010). Vegetation is usually subjected to tidal inundation diluted by freshwater flows from streams or groundwater emergence. In the project area, brackish marsh habitat is considered non-tidal because it has been cut off from tidal action by manmade dikes and levees around the border. This habitat type is found in the northwest corner of the project area north of active biosolids lagoons and drying beds. Vegetation in this habitat type is comprised primarily of alkali bulrush (*Bolboschoenus robustus*) and salt marsh bulrush (*Bolboschoenus maritimus*. Dense bulrush (*Scirpus* sp.) was also observed along the edges of non-tidal brackish marsh habitat.

Many of the same wildlife species found in saltwater wetlands able to tolerate lower salinity levels and species found in freshwater wetlands able to tolerate higher salinity levels also inhabit non-tidal brackish marsh. Species observed in non-tidal brackish marsh during field visits include song sparrow, black crowned night heron (*Nycticorax nycticorax*), mallard, Canada goose (*Branta canadensis*), American kestrel, house finch (*Carpodacus mexicanus*), California quail (*Callipepla californica*), turkey vulture, and western fence lizard.

Tidal Freshwater Marsh

There is approximately 5.5 acres of tidal freshwater marsh habitat in the project area (Figure 6).

Tidal freshwater marsh refers to areas only intermittently or sporadically exposed to tidal influence. The very low levels of salinity make this habitat type tolerable to typically freshwater emergent plant species. Tidal freshwater marsh habitat occurs along a small stretch of Artesian Slough in the northern section of the project area. Dominant species in this habitat type include California bulrush (*Schoenoplectus californicus*), cattail, western goldenrod, and perennial pepperweed.

Wildlife species expected to occur within tidal freshwater marsh are those typically found in other freshwater wetland habitats.

Salt Panne

There is approximately 2.0 acres of salt panne habitat in the project area (Figure 6).

Salt pannes are topographic depressions occurring within salt marsh habitat that are typically inundated seasonally. Typically salt pannes are flooded in winter, but become dry in the summer. Salt pannes tend to accumulate salt which can inhibit establishment of marsh vegetation. Salt panne habitat occurs in association with non-tidal salt marsh habitat in the western section of the project area near the private landfill (Zanker Road Landfill). This habitat type is characterized by its lack of vegetation and algal crusts covering the surface.

Wildlife species found in salt panne habitat are those that also occur within adjacent salt marsh habitat.

Salt Pond

There is approximately 856 acres of salt pond habitat (Pond A18) in the project area (Figure 6).

This habitat type was historically baylands of the San Francisco Bay that have been diked and separated from tidal action. Originally created for salt production and harvesting, salt ponds in the project area are currently inactive. Historically, inundation was controlled by a series of pumps and gates that were managed to allow salt from saline water to concentrate and water to evaporate off. Although currently inactive, salt pond habitat is still managed in order to try and achieve specific salinity and hydrologic circulation regimes (H.T. Harvey and Associates, 2010). One salt pond, Pond A18, occurs in the northwest corner of the project area. This pond consists of non-tidal, highly saline open water with areas of mudflats and levees along the edges. Additionally, patches of coyote scrub and bareground/peripheral halophyte zone habitat occurs along much of the northern border of Pond A18.

This human influenced habitat provides habitat for numerous species of marine and semi-marine waterfowl that forage on invertebrates and fish within the salt pond.

Bareground/Peripheral Halophyte Zone

There is approximately 1.1 acres of bareground/peripheral halophyte zone habitat in the project area (Figure 6).

This habitat type is found around the much of the border of Pond A18. This area consists predominantly of bareground and scattered halophytic (saline-tolerant) species such as pickleweed, alkali heath, and saltgrass. The amount of bareground/peripheral halophyte zone habitat fluctuates depending on water levels in Pond A18. Wildlife species observed within the bareground/peripheral halophyte zone include snowy egret, lesser goldfinch (*Spinus psaltia*), great egret, American white pelican (*Pelecanus erythrorhynchos*), song sparrow, mallard, gull (*Larus* spp.), and Brandt's cormorant (*Phalacrocorax penicillatus*).

Open Water

There is approximately 56.7 acres of open water habitat in the project area (Figure 6).

Areas of open water are found scattered throughout the project area and include creeks, irrigation canals, biosolids lagoons, drying beds, and Pond A18. Pond A18 is discussed above and biosolids lagoons and drying beds habitat is discussed below; therefore, acreages of open water found within these habitat types is not included in the estimated acres of open water habitat in the project area.

Many species of waterfowl will use open water habitat including mallard, American coot, Clark's grebe (*Aechmorphorus clarkii*), pied-billed grebe (*Podilymbus podiceps*), and Canada goose.

Riparian Woodland

There is approximately 35.0 acres of riparian woodland habitat in the project area (Figure 6). Portions of the riparian woodland in the project area would be considered jurisdictional wetland by USACE and the SFRWQCB, as well as jurisdictional under Section 1600 of the Fish and Game Code by CDFG. This habitat type is recognized as a sensitive natural community by federal, state, and local agencies (CDFG, 2010).

Riparian woodland occurs in several locations in the project area. The largest extent of riparian woodland occurs adjacent to Coyote Creek on the eastern edge of the project area. A second stretch of riparian woodland occurs along an ephemeral stream in the northeast portion of the bufferlands west of the most southern biosolids lagoons and drying beds. Additionally, one small patch of remnant riparian woodland occurs in the bufferland southwest of the primary operations center of the WPCP. This remnant habitat patch occurs along what historically appears to have been an ephemeral creek channel. The area did not support any water flow during the 2011 field visits.

Dominant species in the overstory of riparian woodland along Coyote Creek and adjacent to the biosolids lagoons and drying beds include willows (predominantly non-native weeping willow [*Salix babylonica*] and red willow [*Salix laevigata*]), Fremont cottonwood (*Populus fremontii*), and box elder (*Acer negundo* var. *californicum*). A few scattered walnut (*Juglans* sp.) and eucalyptus (*Eucalyptus* sp.) were also observed in the overstory of riparian woodland habitat. Common species in the understory of riparian woodland include California blackberry (*Rubus ursinus*), mulefat, coyote brush, western goldentop, and several non-native herbaceous species including bristly oxtongue, bull thistle, perennial pepperweed and poison hemlock (*Conium maculatum*).

Fremont cottonwood was the dominant species observed in the remnant patch of riparian woodland in the bufferland southwest of the WPCP operational area. The understory of this remnant patch consisted primarily of non-native grasses including barley, Italian ryegrass, and ripgut brome.

Because the vegetation is diverse and well developed, riparian communities provide high-value habitat for many wildlife species. The multilayered riparian community provides escape cover, forage, and nesting opportunities for wildlife. Common wildlife species commonly observed in riparian habitats include acorn woodpecker (*Melanerpes formicivorus*), downy woodpecker (*Picoides pubescens*), black phoebe, northern mockingbird (*Turdus migratorius*), red-tailed hawk, great horned owl (*Bubo virginianus*), Cooper's hawk (*Accipiter cooperii*) and American kestrel. Riparian habitat is frequently use by transient animals as wildlife corridors; using vegetation cover as escape habitat and drinking from the associated water.

Coyote Brush Scrub

There is approximately 2.5 acres of coyote brush scrub habitat in the project area (Figure 6).

Coyote brush scrub typically consists of moderate to dense cover of predominantly coyote brush (*Baccharis pilularis*). Small patches of coyote brush scrub are found in the north central edge of the project area along Pond A18.

Wildlife in coyote brush scrub is largely comprised of songbirds (e.g., several species of sparrow, house finch, andgoldfinch), small fossorial mammals (e.g., California ground squirrel and California vole), and their predators (e.g., striped skunk, coyote, and red fox).

Disturbed/Ruderal

There is approximately 273.2 acres of disturbed/ruderal habitat in the project area (Figure 6).

Disturbed/ruderal habitat is typified by a dominance of non-native forbs that thrive in disturbed conditions. Disturbed/ruderal habitat exists in several locations in the project area. The largest areas of ruderal habitat occur between Pond A18 and the WPCP, and west of Coyote Creek, including areas historically used as water treatment ponds. Vegetation in disturbed/ruderal habitat in the project area includes grass species similar to that observed in annual grassland such as ripgut brome, soft brome, wild oats, foxtail barley and Italian ryegrass. Non-native weedy forbs are more dominant in disturbed/ruderal habitat than in annual grassland. Heavy cover of weedy forbs including bristly oxtongue, Italian thistle, milk thistle, bull thistle, black mustard, yellow star thistle (*Centaurea solstitialis*), stinkwort, and prickly lettuce were observed in disturbed/ruderal habitat in the project area.

Wildlife species occurring within disturbed/ruderal habitat are primarily determined by the characteristics of nearby habitat. Species observed within disturbed/ruderal habitat were primarily songbirds, western fence lizard, American crow, and burrowing owl.

Biosolids Lagoons and Drying Beds

Biosolids lagoons and drying beds cover approximately 688.4 acres of land in the project area (Figure 6).

Numerous inactive and active biosolids lagoons and drying beds are found within the project area, specifically northeast of the WPCP. Historic lagoons and drying beds that are no longer actively used support predominantly disturbed/ruderal vegetation, while active lagoons and drying bed support both aquatic and emergent vegetation and disturbed/ruderal plant species along the edges depending on the amount of water contained within each pond and the stage of treatment. Although many of the inactive basins consist of extensive bare ground; pickleweed, alkali heath, five horn bassia and spearscale were also observed scattered in the bottom. Dominant vegetation observed around the edges of the inactive and active treatment ponds includes a variety of non-native weedy species such as black mustard, poison hemlock, milk thistle, perennial pepperweed, prickly lettuce (*Lactuca serriola*), and stinkwort.

Wildlife observed within the water treatment ponds varied largely depending on the frequency of disturbance and stage of treatment experienced by the pond. Frequently disturbed ponds at earlier stages of treatment did not support the number of individual animals and diversity seen in less frequently disturbed, later stage treatment ponds. Species of wildlife observed within the water treatment ponds include mosquito fish, American avocet, black-necked stilt, Baird's sandpiper (*Calidris bairdii*), and several species of waterfowl.

Developed/Landscaped Areas

Approximately 310.0 acres of the project area is developed (Figure 6).

Developed/landscaped areas in the project area include roads, landscaped areas, the wastewater treatment facilities, the active landfill, and paved roads. These portions of the project area represent low-quality habitat value for plant and wildlife species and support a small number of plant and wildlife species. Vegetation in developed/landscaped areas is highly variable, ranging from non-existent in paved areas to maintained lawns and ornamental shade trees. Accordingly, wildlife within this vegetation community is highly variable and was typically observed in developed/landscaped areas that supported some degree of vegetation. Vegetation observed in developed/landscaped areas supporting vegetation includes Bermudagrass, oleander (*Nerium oleander*), eucalyptus trees (*Eucalyptus* sp.), privet (*Ligustrum* sp.) shrubs, Monterey Pine (*Pinus radiata*), and olive (*Olea europaea*) trees.

Portions of this vegetation community support Canada goose, western scrub jay (*Aphelocoma californica*), northern mockingbird (*Mimus polyglottos*), house finch, and California ground squirrel.

Potential Jurisdictional Areas

Wetland, Streams, and Other Waters of the United States/Waters of the State

Waters of the United States is the term used by USACE for areas under federal jurisdiction under CWA Section 404. For the purpose of this analysis, waters of the United States are categorized as either *wetlands* or *other waters of the United States*. Wetlands are defined as

> areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3[b], 40 CFR 230.3).

To be considered under federal jurisdiction, a wetland must support positive indicators for hydrophytic vegetation, hydric soil, and wetland hydrology. Other waters of the United States are seasonal or perennial bodies of water, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high-water mark (OHWM) but lack positive indicators for one or two of the three wetland parameters (33 CFR 328.4).

The current extent of wetlands in the project area reflects the past history of human activities and development in the area. Wetlands in the project area have been filled and diked for agricultural use and development, including development of the WPCP. These activities have resulted in the loss of wetland acreage in the project area. Additionally, these past and current land use activities have resulted in areas of vegetation types that appear to currently be in transition between wetland and upland habitats. This is most notable in the western bufferlands where the boundaries of seasonal wetlands mapped in this area are imprecise and can likely even vary among years.

Habitats observed during the 2011 field surveys within the project area that may meet the regulatory definition and, therefore, be under USACE jurisdiction include seasonal wetlands, freshwater, brackish, salt marsh, salt pannes, salt ponds, open water, biosolids lagoons and drying beds. A formal wetland delineation of the project area, however, has not been conducted. A formal wetland delineation would be necessary to document the full extent of potential USACE jurisdictional wetlands and other waters of the United States in the project area. Activities that involve placement of fill into USACE jurisdictional wetlands and other waters would need to be in compliance with permit requirements of the USACE pursuant to Section 404 of the CWA.

Streams and Riparian Habitats Regulated under California Fish and Game Code

Activities that result in diversion or obstruction of the natural flow of a stream, or substantially change its bed, channel or bank, or utilize any materials (including vegetation) from the streambed require that the project applicant enter into a Streambed Alteration Agreement with CDFG under sections 1600–1603 of the California Fish and Game Code. Any work within channels with a clear bed and banks, such as Coyote Creek and portions of Alviso Slough would likely fall under jurisdiction of the CDFG and would require a Streambed Alteration Agreement.

Other CDFG-Designated Sensitive Habitat Types

As mentioned above, salt marsh occurs in the northern and northwestern portions of the project area. This is considered a sensitive habitat type by the CDFG and is mapped by the CNDDB.

Special-Status Species

Special-status species are defined as:

- Species listed or proposed for listing as threatened or endangered under the ESA (Title 50, CFR, Section 17.12 for listed plants, 50 CFR 17.11 for listed animals, and various notices in the Federal Register [FR] for proposed species).
- Species that are candidates for possible future listing as threatened or endangered under ESA (67 FR 40657, June 13, 2002).

- Species that are federal species of concern.
- Species that are listed or proposed for listing by the State of California as threatened or endangered under CESA (Title 14, California Code of Regulations [CCR], Section 670.5).
- Plants listed as rare under the California Native Plant Protection Act of 1977 (CDFG Code, Section 1900 et seq.).
- Plants considered by the CNPS to be "rare, threatened, or endangered in California and elsewhere (CRPR 1B species)."
- Species that meet the definitions of "rare" or "endangered" under the state CEQA Guidelines, Section 15380.
- Animal species of special concern to CDFG.
- Animals fully protected in California (CDFG Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

Special-Status Fish and Wildlife

Background Research

A search of CNDDB records and literature review identified 42 special-status wildlife species with known occurrences within the USGS 7.5-minute *Milpitas*, *Mountain View*, *Newark*, *Niles*, *La Costa Valley*, *Calaveras Reservoir*, *San José East*, *San José West*, and *Cupertino* quadrangles. A total of 18 USFWS-listed species with the potential to occur in the same quadrangles were identified. Upon further review of the local habitat conditions and specifics of the documented CNDDB occurrence records, 22 of the original 50 special-status wildlife species were determined to have no potential to occur within the project area due to lack of suitable habitat. The 50 special-status wildlife species identified and their potential to occur in the project area are listed in **Table 1**. The 28 special-status species with potential to occur in the project area are discussed in further detail below the table.

Surveys Conducted

Protocol-level surveys for western burrowing owl were conducted on July 1 and 6, and July 11 and 12, 2011, during which data were collected for other observed biological resources. Reconnaissance-level surveys of the project area were conducted on August 16–18, September 22 and October 12 and 14, 2011 for western burrowing owl, other special-status plants and wildlife, wetlands, and sensitive habitats. During surveys only one special status wildlife species, western burrowing owl, was observed in the southwestern portion of the project area.

Federal or State Endangered or Threatened Species

Conservancy fairy shrimp (*Branchinecta conservatio*)—Federally Endangered

Conservancy fairy shrimp is a small invertebrate that inhabits large, deep vernal pools typically within annual grasslands. This species is known from numerous disjunct occurrences in Solano, Merced, Tehama, Ventura, Butte, and Glenn Counties. This species has potential to occur within the seasonal wetlands within the southern portion of the project area. The nearest record of this species is approximately 42 miles away from the project area (CNDDB, 2011).

Vernal pool fairy shrimp (*Branchinecta lynchi*)—Federally Endangered

Vernal pool fairy shrimp is a small invertebrate that inhabits vernal pools formed by hardpan, claypan, and sandstone rock outcrops. This species ranges across California's Central Valley and south into the Coast Ranges in Santa Barbara County, with some isolate populations in Riverside County. This species has potential to occur within the seasonal wetlands within the southern portion of the project area. The nearest record of this species is approximately 20 miles away from the project area (CNDDB, 2011).

Central California coast steelhead (*Oncorhynchus mykiss*)—Federally Threatened

Central California coast steelhead is an anadromous fish that live in the Pacific Ocean, where they feed until sexually mature. This species migrates into freshwater streams and moves upstream until it spawns in cold, clear water and gravel substrate. Central California coastal steelhead ranges along California's coast from the Russian River in Marin County, south to Aptos Creek in Santa Cruz County, and includes all of the greater San Francisco Bay, east to the confluence of the San Joaquin and Sacramento Rivers. This species is known to occur within Coyote Creek, portions of which are within the northern, northeastern, and eastern sections of the project area.

Fall-run Chinook salmon (*Oncorhynchus tshawytscha*)—Federal Candidate and Federal Species of Concern

Chinook salmon is an anadromous fish that lives in the Pacific Ocean, where they feed until sexually mature. This species migrates into freshwater streams and move upstream until they spawn in well-oxygenated, cool (8–12.5°C) rivers. This species occurs in the Sacramento and San Joaquin Rivers and coastal streams. This species is known to use Coyote Creek as a migratory connection to upstream spawning habitat, and therefore, occur within the northern, northeastern, and eastern portions of the project area.

Western pond turtle (*Emys marmorata*)—California Species of Special Concern

Western pond turtle is an olive-drab turtle that inhabits a wide variety of water bodies, including ponds, marshes, rivers, streams, and irrigation canals. This species can tolerate full-strength sea water for a short period of time, but normally is found in freshwater. Western pond turtle females migrate away from their water bodies into surrounding uplands, where they construct underground nests and lay eggs from April to August. This species has potential to occur within Coyote Creek and Artesian Slough, in the northern portion of the project area. The nearest record of this species is approximately 2.8 miles away from the project area (CNDDB, 2011).

Townsend's big-eared bat (*Corynorhinus townsendii*)—California Species of Special Concern

Townsend's big-eared bat roosts in various locations, including caves, tunnels, mines, and dark attics of abandoned buildings. This species is known to occur in coastal regions from Del Norte County to Santa Barbara County. Townsend's big-eared bat has potential to roost in trees within the riparian habitat along Coyote Creek in the northern, northeastern, and eastern portions of the project area. The nearest record of this species is approximately 6.3 miles away from the project area (CNDDB, 2011).

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Invertebrates				
Adela oplerella Opler's longhorn moth	--/--	Marin County and Oakland area on the inner coast ranges south to Santa Clara County. One record from Santa Cruz County	Serpentine substrates that support the host plant, cream cups (*Platystemon californicus*)	None—no suitable habitat, as there are no serpentine soils in the project area.
Branchinecta conservation Conservancy fairy shrimp	E/--	Disjunct occurrences in Solano, Merced, Tehama, Ventura, Butte, and Glenn Counties	Large, deep vernal pools in annual grasslands	Low—marginal habitat in the seasonal wetland habitat in the project area.
Branchinecta lynchi Vernal pool fairy shrimp	T/--	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County	Common in vernal pools; also found in sandstone rock outcrop pools	Low—marginal habitat in the seasonal wetland habitat in the project area.
Euphydryas editha bayensis Bay checkerspot butterfly	T/--	Disjunct occurrences in San Mateo and Santa Clara Counties.	Associated with specific host plants that typically grow on serpentine soils.	None—no suitable habitat, as there are no serpentine soils in the project area.
Lepidurus packardi Vernal pool tadpole shrimp	E/--	Shasta County south to Merced County.	Vernal pools and ephemeral stock ponds.	None—this species is not known to occur within Santa Clara County.
Linderiella occidentalis California linderiella	--/D	Shasta County south to Fresno County, and in the Coast Range from Mendocino County to Ventura County.	Vernal pools and ephemeral stock ponds.	Low—marginal habitat in the seasonal wetland habitat in the project area.
Microcina homi Hom's micro-blind harvestman	--/--	no data	Serpentine rocks	None—no suitable habitat, as there are no native serpentine soils/rocks in the project area.
Tryonia imitator California brackishwater snail (=mimic tryonia)	--/--	Throughout coast from Salmon Creek, Sonoma County south to Tijuana River, San Diego County.	Coastal tidal lagoons, estuaries, and marshes.	Low—suitable habitat in the brackish wetland habitat in the project area.

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Fish				
Acipenser medirostris Green sturgeon	T/SSC	From Mexico to Alaska in marine waters. Bays and estuaries along the west coast of North America, from British Columbia south to San Luis Obispo.	Ocean water, bays, and estuaries while not spawning. Spawn in the mainstem of freshwater rivers with connection to marine habitat and suitable deep pools.	None—no suitable habitat in the study area, as Coyote Creek and Artesian Slough are relatively shallow and lack deep freshwater pools.
Hypomesus transpacificus Delta smelt	T/T	Primarily in the Sacramento–San Joaquin Estuary, but has been found as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay.	Occurs in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand (Moyle 2002).	None – outside of known range and there is no suitable habitat in the study area.
Oncorhynchus mykiss Central California coast steelhead	T/--	Coastal drainages along the central California coast.	Cold, clear water with clean gravel of appropriate size for spawning. Most spawning occurs in headwater streams. Steelhead migrate to the ocean to feed and grow until sexually mature.	High (winter run only) – Steelhead are known to use Coyote Creek as a migratory connection to spawning habitat.
Oncorhynchus mykiss Central Valley steelhead	T/--	Sacramento and San Joaquin River and their tributaries.	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 7.8 to 18°C (Moyle 2002). Habitat types are riffles, runs, and pools.	None – The Central Valley steelhead range does not include the southern San Francisco Bay Area.
Oncorhynchus kisutch Central California coast coho salmon	E (central coast)/--	Pacific Ocean and rivers and creeks from Punta Gorda to the San Lorenzo River.	Occur in coastal streams with water temperatures < 15°C. Need cool, clear water with instream cover. Spawn in tributaries to large rivers or streams directly connected to the ocean (Moyle 2002).	None –coho salmon have been extirpated from tributaries to San Francisco Bay (NMFS 2005).

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Oncorhynchus tshawytscha Central Valley and Sacramento River Chinook salmon	T (spring run)/- E (winter run)/- C, SC (fall)/-	Sacramento and San Joaquin River and their tributaries.	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 8.0 to 12.5°C. Habitat types are riffles, runs, and pools. (Moyle 2002)	None (spring and winter run only) – The Central Valley spring-run and winter-run Chinook salmon range does not include the southern San Francisco Bay Area. High (fall run only) – Fall-run Chinook salmon are known to use Coyote Creek as a migratory connection to spawning habitat. These fall-run fish are thought to be hatchery strays.
Amphibians				
Ambystoma californiense California tiger salamander	T/T	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Sonoma County south to Santa Barbara County	Small ponds, lakes, or vernal pools in grasslands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy.	None - There is currently no potential for California tiger salamander to occur in the project area. While the study area do contain seasonal wetlands, the majority are saline or brackish and the areas surrounding freshwater wetlands lack suitable upland burrows.
Rana boylii Foothill yellow-legged frog	--/SSC	Occurs in the Klamath, Cascade, north Coast, south Coast, Transverse, and Sierra Nevada Ranges up to approximately 6,000 feet	Creeks or rivers in woodland, forest, mixed chaparral, and wet meadow habitats with rock and gravel substrate and low overhanging vegetation along the edge. Usually found near riffles with rocks and sunny banks nearby.	None - There is currently no potential for foothill yellow-legged frog to occur in the project area, as the study area does not contain suitable habitat for this species.
Rana draytonii California red-legged frog	T/SSC	Found along the coast and coastal mountain ranges of California from Mendocino County to San Diego County and in the Sierra Nevada from Butte County to Stanislaus County.	Permanent and semipermanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation; may aestivate in rodent burrows or cracks during dry periods	None - There is currently no potential for California red-legged frog to occur in the project area, as the study area does not contain suitable habitat for this species.

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Reptiles				
Emys marmorata Western pond turtle	–/SSC	The western pond turtle is uncommon to common in suitable aquatic habitat throughout California, west of the Sierra-Cascade crest and absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries.	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests. Nests are typically constructed in upland habitat within 0.25 mile of aquatic habitat.	Low - western pond turtle has the potential to occur in Coyote Creek, the Coyote Creek Flood Control Channel, and Artesian Slough and the adjacent uplands within the project area.
Masticophis lateralis euryxanthus Alameda whipsnake	T/T	Restricted to Alameda and Contra Costa Counties; fragmented into 5 disjunct populations throughout its range	Valleys, foothills, and low mountains associated with northern coastal scrub or chaparral habitat; requires rock outcrops for cover and foraging	None - There is currently no potential for Alameda whipsnake to occur in the project area, as the study area does not contain suitable habitat for this species.
Mammals				
Antrozous pallidus Pallid bat	--/SSC	Widespread throughout California	Roosts in fissures in caves, tunnels, mines, hollow trees, and locations with stable temperatures.	None - There is currently no potential for pallid bat to occur in the project area.
Corynorhinus townsendii Townsend’s big-eared bat	--/SSC	Coastal regions from Del Norte County south to Santa Barbara County	Roosts in caves, tunnels, mines, and dark attics of abandoned buildings. Very sensitive to disturbances and may abandon a roost after one onsite visit	Low - There is currently no potential for pallid bat to occur in the riparian habitat along Coyote Creek within the project area.
Dipodomys heermanni berkeleyensis Berkeley kangaroo rat	--/--	Alameda and Contra Costa Counties	Open grassy hilltops & open spaces in chaparral & blue oak/digger pine woodlands. Needs fine, deep well-drained soil for burrowing	None - There is currently no potential for Berkeley kangaroo rat to occur in the project area, as it is not known to occur within Santa Clara County.
Dipodomys venustus venustus Santa Cruz kangaroo rat	--/SSC	Historically from Mount Hamilton, Santa Clara County, to Corralitos, Santa Cruz County. Known to occur near Mount Hermon, Felton, and Bonny Dune in Santa Cruz County.	Chaparral habitat in low foothills of Santa Cruz Moutains, on soils of sand, loam, and sandy loam.	None - There is currently no potential for Santa Cruz kangaroo rat to occur in the project area, as there is no suitable habitat within the study area.

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Lasiurus cinereus Hoary bat	--/--	Widespread throughout California	Roosts in trees, typically within forests.	Low – hoary bat has the potential to roost within trees within the riparian habitat along Coyote Creek in the project area.
Myotis evotis Long-eared myotis	--/--	Occurs throughout California except the southeastern deserts and the Central Valley	Occurs primarily in high elevation coniferous forests, but also found in mixed hardwood/conifer, high desert, and humid coastal conifer habitats	None – There is currently no potential for long-eared myotis to occur in the project area, as the study area does not contain suitable habitat for this species.
Myotis yumanensis Yuma myotis	--/--	Common and widespread throughout most of California except the Colorado and Mojave deserts	Found in a wide variety of habitats from sea level to 11,000 ft., but uncommon above 8,000 ft. Optimal habitat is open forests and woodlands near water bodies	Low – Yuma myotis has the potential to roost within trees within the riparian habitat along Coyote Creek in the project area.
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	--/SSC	West side of Mount Diablo to coast and San Francisco Bay	Present in chaparral habitat and in forest habitats with a moderate understory	None – There is currently no potential for San Francisco dusky-footed woodrat to occur in the project area, as the study area does not contain suitable habitat for this species.
Reithrodontomys raviventris Salt marsh harvest mouse	E/E	The San Francisco Bay Estuary and Suisun Marsh.	Saline to brackish salt marsh habitat.	High – Salt marsh harvest mouse is known to occur in salt marsh and salt panne habitat within the project area.
Sorex vagrans halicoetes Salt-marsh wandering shrew	-/SSC	Southern arm of the San Francisco Bay in San Mateo, Santa Clara, Alameda, and Contra Costa Counties.	Salt marshes from 6 to 9 feet above mean sea level (MSL).	High - There is currently potential for salt marsh wandering shrew to occur in the salt marsh and salt panne habitat within the project area, and this species is known to occur within similar habitat northwest of the study area.

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Vulpes macrotis mutica San Joaquin kit fox	E/T	Principally occurs in the San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties extending from Kern County north to Contra Costa County	Saltbush scrub, grassland, oak, savanna, and freshwater scrub	None – There is no potential for San Joaquin kit fox to occur within the project area, as the study area does not contain suitable habitat for this species.
Birds				
Accipiter cooperii Cooper's hawk	--/--	Throughout California except high altitudes in the Sierra Nevada. Winters in the Central Valley, southeastern desert regions, and plains east of the Cascade Range	Nests in a wide variety of habitat types, from riparian woodlands and digger pine-oak woodlands through mixed conifer forests	Low – Cooper's hawk has the potential to nest in trees within the riparian habitat along Coyote Creek in the project area.
Accipiter striatus Sharp-shinned hawk	--/--	Permanent resident in the Sierra Nevada, Cascade, Klamath, and north Coast Ranges at mid elevations and along the coast in Marin, San Francisco, San Mateo, Santa Cruz, and Monterey Counties. Winters over the rest of the state except at very high elevations	Dense canopy ponderosa pine or mixed-conifer forest and riparian habitats	Low – sharp-shinned hawk has the potential to nest in trees within the riparian habitat along Coyote Creek in the project area.
Agelaius tricolor Tricolored blackbird	--/SSC	Permanent resident in the Central Valley from Butte County to Kern County. Breeds at scattered coastal locations from Marin County south to San Diego County; and at scattered locations in Lake, Sonoma, and Solano Counties. Rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields. Habitat must be large enough to support 50 pairs. Probably requires water at or near the nesting colony	Low – tricolored blackbird has the potential to nest in vegetation associated with wetland habitat along Artesian Slough and the riparian habitat along Coyote Creek in the project area.
Aquila chrysaetos Golden eagle	PR/ FP	Foothills and mountains throughout California. Uncommon non-breeding visitor to lowlands such as the Central Valley	Nest on cliffs and escarpments or in tall trees overlooking open country. Forages in annual grasslands, chaparral, and oak woodlands with plentiful medium and large-sized mammals	High (foraging only) – golden eagle has the potential to forage over various habitat within the project area, and is known to forage over similar surrounding habitat.

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Ardea herodias Great blue heron (rookery)	--/--	Nests in suitable habitat throughout California except at higher elevations in Sierra Nevada and Cascade mountain ranges.	Widely distributed in freshwater and calm-water intertidal habitats.	High - great blue heron has the potential to nest in vegetation adjacent to Artesian Slough and Coyote Creek within the project area.
Athene cunicularia hypugaea Western burrowing owl	--/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows	Present – western burrowing owl was observed within the northwestern portion of the bufferland within the project area.
Brachyrampus marmoratus Marbled murrelet	T/E	Nesting sites from the Oregon border to Eureka and between Santa Cruz and Half Moon Bay; winters in nearshore and offshore waters along the entire California coastline	Mature, coastal coniferous forests for nesting; nearby coastal water for foraging; nests in conifer stands greater than 150 years old and may be found up to 35 miles inland; winters on subtidal and pelagic waters often well offshore	None - there is currently no potential for marbled murrelet to occur in the project area, as the study area does not contain suitable habitat for this species.
Charadrius alexandrines nivosus Western snowy plover	T/SSC	Population defined as those birds that nest adjacent to or near tidal waters, including all nests along the mainland coast, peninsulas, offshore islands, and adjacent bays and estuaries. Twenty breeding sites are known in California from Del Norte to Diego County	Coastal beaches above the normal high tide limit in flat, open areas with sandy or saline substrates; vegetation and driftwood are usually sparse or absent	None - There is currently no potential for western snowy plover to occur in the project area, as the study area contains very small amounts of salt panne habitat and is not large enough to support a nesting colony of this species.
Circus cyaneus Northern harrier	--/SSC	Occurs throughout lowland California. Has been recorded in fall at high elevations	Grasslands, meadows, marshes, and seasonal and agricultural wetlands	Present - northern harrier was observed foraging in the non-native grassland habitat and has the potential to nest in same habitat within the project area.
Elanus leucurus White-tailed kite	--/FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border.	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	Present - white-tailed kite has the potential to forage in the grasslands and nest in trees within the riparian habitat along Coyote Creek within the project area.

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Egretta thula Snowy egret (rookery site)	--/--	Occurs in coastal lowlands and other lowland areas throughout California.	Shores of coastal estuaries, fresh and saline emergent wetlands, ponds, slow-moving rivers, irrigation ditches, and wet fields. Nests in dense marshes or at low heights in trees.	Present – snowy egret was observed foraging in salt pond A18 and has the potential to nest in the adjacent vegetation along Artesian Slough and Coyote Creek within the project area.
Falco mexicanus Prairie falcon	--/--	Permanent resident in the south Coast, Transverse, Peninsular, and northern Cascade Ranges, the southeastern deserts, Inyo-White Mountains, foothills surrounding the Central Valley, and in the Sierra Nevada in Modoc, Lassen, and Plumas Counties. Winters in the Central Valley, along the coast from Santa Barbara County to San Diego County, and in Marin,	Nests on cliffs or escarpments, usually overlooking dry, open terrain or uplands	Low (foraging only) – prairie falcon has the potential to forage within the non-native grassland habitat within the project area.
Falco peregrines anatum American peregrine falcon	--/E, FP	Permanent resident along the north and south Coast Ranges. May summer in the Cascade and Klamath Ranges and through the Sierra Nevada to Madera County. Winters in the Central Valley south through the Transverse and Peninsular Ranges and the plains east of the Cascade Range	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes that support large prey populations	Low (foraging only) – American peregrine falcon has the potential to forage within the non-native grassland and other open habitat within the project area.
Geothlypis trichas sinuosa Saltmarsh common yellowthroat	--/SSC	Found only in the San Francisco Bay Area in Marin, Napa, Sonoma, Solano, San Francisco, San Mateo, Santa Clara, and Alameda Counties	Freshwater marshes in summer and salt or brackish marshes in fall and winter; requires tall grasses, tules, and willow thickets for nesting and cover	Low – saltmarsh common yellowthroat has potential to occur in saltwater and freshwater marshes respectively adjacent to Artesian Slough and Coyote Creek in the project area.

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Laterallus jamaicensis conturniculus California black rail	--/T, FP	Permanent resident in the San Francisco Bay and east-ward through the Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties	Tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations	Low – California black rail has potential to occur in salt marsh habitat adjacent to Artesian Slough and in the northern portions of the project area.
Melospiza melodia pusillula Alameda song sparrow	--/SSC	Found only in marshes along the southern portion of the San Francisco Bay	Brackish marshes associated with pickleweed; may nest in tall vegetation or among the pickleweed	Low – Alameda song sparrow has potential to occur in salt marsh habitat in the northern portions of the project area.
Pelecanus occidentalis californicus California brown pelican	D/E	The Pacific coast from Canada through Mexico.	Coastal areas. Nests on islands. Occasionally along Arizona's lakes and rivers.	Low – California brown pelican has potential to occur in salt ponds and other openwater habitat in the northern portions of the project area.
Riparia riparia Bank swallow	--/T	Occurs along the Sacramento River from Tahama County to Sacramento County, along the Feather and lower American Rivers, in the Owens Valley; and in the plains east of the Cascade Range in Modoc, Lassen, and northern Siskiyou Counties. Small populations near the coast from San Francisco County to Monterey County	Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam	None – there is currently no potential for bank swallow to occur in the project area, as the study area does not contain suitable habitat for this species.
Rallus longirostris obsoletus California clapper rail	E/FP	Found along the Pacific Coast in Monterey and San Luis Obispo Counties.	From tidal mudflats to tidal sloughs	Low – California clapper rail has the potential to forage within brackish, fresh, and salt water marsh habitat in Artesian Slough and Coyote Creek, and nest within the marsh vegetation.

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Sternula antillarum browni California least tern	E/E	Found along the Pacific Coast of California from San Francisco to Baja California	Nest on open beaches kept free of vegetation by natural scouring from tidal action	Low (foraging only) – There is potential for California least tern to forage in the open water, salt pond, and tidal marsh habitat; however, no suitable nesting habitat occurs in the project area.

Notes:

Status explanations:

Federal

E	=	listed as endangered under the ESA
T	=	listed as threatened under the ESA
PT	=	proposed for federal listing as threatened under the ESA
C	=	species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded
D	=	delisted
SC	=	species of concern
–	=	no listing

State

E	=	listed as endangered under CESA
T	=	listed as threatened under CESA
FP	=	fully protected under the California Fish and Game Code
SSC	=	species of special concern in California
D	=	delisted
–	=	no listing

Potential Occurrence in the Study Area

High:	Known occurrences of the species within the study area, or CNDDB, or other documents, records the occurrence of the species within a 5-mile radius of the study area; suitable habitat is present within the study area
Moderate:	CNDDB, or other documents, records the known occurrence of the species within a 5-mile radius of the study area; poor quality suitable habitat is present within the study area
Low:	CNDDB, or other documents, does not record the occurrence of the species within a 5-mile radius of the study area; suitable habitat is present within the study area

Salt marsh harvest mouse (*Reithrodontomys raviventris*)—Federally Endangered, California Endangered

Salt marsh harvest mouse inhabits salt marsh habitat vegetated with pickleweed around the greater San Francisco Bay. This species is known to occur within the Don Edwards Wildlife Refuge immediately west of the project area. Salt marsh harvest mouse has potential to occur within the salt marsh habitat in southwestern and northern portions of the project area. There are records of this species occurring within the northeast portion of the project area, the most recent of which is from an observation made in 1990 (CNDDB, 2011).

Salt marsh wandering shrew (*Sorex vagrans halicoetes*)—California Species of Special Concern

Salt marsh wandering shrew's range covers the San Francisco Bay Estuary and Suisun Marsh. This species is found within salt marsh habitat ranging from saline to brackish water and its daily active periods are largely influenced by tidal action. There are numerous CNDDB records of this species from the salt marsh habitat within the Don Edwards Wildlife Refuge immediately west of the project area. This species has potential to occur within the salt marsh habitat in the southwestern and northern portions of the project area. There are records of this species occurring within the northwest portion of the project area, the most recent of which is from an observation made in 1980 (CNDDB, 2011).

Tricolored blackbird (*Agelaius tricolor*)—California Species of Special Concern

Tricolored blackbird is a permanent resident of the Central Valley but breeds in a couple scattered coastal locations from Marin County to San Diego. This species nests colonially, with minimum size of 50 pairs, in dense marsh vegetation such as cattails (*Typha* spp.) and bulrush (*Scirpus* spp.). Tricolord blackbird has potential to nest within the dense marsh vegetation associated with Artesian Slough, Coyote Creek and other areas that support such vegetation, primarily in the northern and southwestern portions of the project area. The nearest record of this species is approximately 1.6 miles away from the project area (CNDDB, 2011).

Golden eagle (*Aquila chrysaetos*)—California Fully Protected

Golden eagle is a large raptor that forages over a variety of open habitats, such as grasslands, chaparral, and oak woodlands, and nests on cliffs, escarpments, or in tall trees overlooking open areas. Several observations have documented golden eagle foraging over grasslands in the areas surrounding the project area. This species has potential to forage within grasslands and other open habitats primarily within the southern portion of the project area. The nearest record of this species is approximately 3.3 miles away from the project area (CNDDB, 2011); however, this species was recently observed flying immediately over the site in 2011 (Trulio *et al.*, 2012).

Western burrowing owl (*Athene cunicularia hypugaea*)—California Species of Special Concern

Western burrowing owl is a small owl that lives in burrows created by ground squirrels and pocket gophers. This species forages over grassland and open salt marsh vegetation for small mammals, insects, and lizards and is most active at dawn and dusk. This species ranges throughout lowland portions of California, but is absent from the southern coastal areas of the state. Western burrowing owl individuals were observed nesting within the wastewater treatment plan facility in 2011 and within the southwestern portion of the project area during fall field surveys. Dr. Lynne Trulio, PhD. conducted surveys for burrowing owl, during which two active burrows occupied by the species were observed. Dr. Trulio also prepared the Bufferlands Interim Burrowing Owl Management Plan, which includes recommendations to improve habitat quality for burrowing owl in the southern portion of the project area (Appendix D) (Trulio *et al.*, 2012). Figure 7 indicates areas recommended for management actions per Dr. Trulio's Bufferlands Interim Burrowing Owl Management Plan.

Northern harrier (*Circus cyaneus*)—California Species of Special Concern

Northern harrier is a medium sized raptor that forages primarily for small mammals over open habitats, including grassland, salt marsh, and agricultural fields. This species nests on the ground within grassland habitat. The range of northern harrier encompasses all of lowland California, but this species has been observed at high elevations. Numerous northern harrier individuals were observed foraging over the grassland and salt marsh habitats within the southern and southwestern portions of project area.

White-tailed kite (*Elanus leucurus*)—California Fully Protected

White-tailed kite is a small raptor that forages primarily for small mammals over open habitats, including grassland, salt marsh, and agricultural fields. The range of this species includes lowland areas west of the Sierra Nevada from the northern extent of the Sacramento Valley south, including coastal foothills to western San Diego County. This species nests within trees suitable of supporting its nest that offer at least partial shade within the canopy. White-tailed kite individuals were observed foraging over grassland and salt marsh habitats in the southern and southwestern portions of the project area.

American peregrine falcon (*Falco peregrines anatum*)—California Endangered, California Fully Protected

American peregrine falcon is a permanent resident of the north and south Coast Ranges, is expected to summer in the Cascade and Klamath Ranges and Sierra Nevada Range south to Madera County, and winters in the Central Valley south through the Transverse and Peninsular Ranges in southern California, as well as on the plains east of the Cascade Range. This species is known to forage for small birds over the southern Bay Area and has potential to forage in grassland and salt marsh habitats in the southwestern and southern portions of the project area. The nearest record of this species is approximately 3.1 miles away from the project area (CNDDB, 2011).

Salt marsh common yellowthroat (*Geothlypis trichas sinuosa*)—California Species of Special Concern

Salt marsh common yellowthroat is found in Marin, Napa, Sonoma, Solano, San Francisco, San Mateo, Santa Clara, and Alameda counties within freshwater marshes in summer and salt or brackish marshes in fall and winter. This species utilizes areas of tall grasses, tules, and willow thickets for cover and nesting substrate. There are multiple CNDDB records of this species north and west of the project area. Salt marsh common yellowthroat has potential to occur within fresh and saltwater marsh vegetation along Artesian Slough, Coyote Creek, and marshes in the northern and southwestern portions of the project area. The nearest record of this species is approximately 0.5-mile away from the project area (CNDDB, 2011).

California black rail (*Laterallus jamaicensis conturniculus*)—California Threatened, California Fully Protected

California black rail is a permanent resident of the San Francisco Bay and the Sacramento Delta in San Joaquin and Sacramento Counties. This species also occurs within small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties. California black rail inhabits tidal salt marshes densely vegetated with pickleweed, brackish marshes, freshwater marshes at low elevations. This species has potential to occur within marsh habitat Artesian Slough, Coyote Creek, and the salt and freshwater marsh habitats in the northern and southwestern portions of the project area. The nearest record of this species is approximately 6.4 miles away from the project area and is from an observation made in 2004 (CNDDB, 2011).

Alameda song sparrow (*Melospiza melodia pusillula*)—California Species of Special Concern

Alameda song sparrow is found in the brackish marshes vegetated with pickleweed along the southern portion of the San Francisco Bay. This species is known to nest within tall vegetation or in pickleweed within its marsh habitat. There is a CNDDB record of the species from the Don Edwards Wildlife Refuge located immediately west of the project area. This species has potential to occur within the brackish marsh habitat along Artesian Slough, Coyote Creek, and in other locations of similar habitat in the northern and southwestern portions of the project area. The nearest record of this species is approximately 0.16-mile away from the project area (CNDDB, 2011).

California brown pelican (*Pelecanus occidentalis*)—Federally Delisted, California Endangered

California brown pelican ranges along the Pacific Coast from Canada to Mexico. This species forages in coastal areas and occasionally in Arizona's lakes and rivers. California brown pelican is known to nest on islands within its foraging habitat. This species has potential to occur within open water and salt pond habitat, primarily within or adjacent to the northern portions of the project area. The nearest record of this species is approximately 63 miles away from the project area (CNDDB, 2011).

California clapper rail (*Rallus longirostris obsoletus*)—Federally Endangered, California Fully Protected

California clapper rail ranges along the Pacific Coast in Monterey and San Luis Obispo Counties and inhabits tidal mudflats and sloughs. There are numerous CNDDB records of this species north and west of the project area at the confluence of Artesian Slough and Coyote Creek, and Coyote Creek and Alviso Slough. While these records are significantly further downstream, the species could occur further upstream in Artesian Slough, Coyote Creek, and adjacent areas in the northern and western portions of the project area. There are records of this species occurring within the northern portion of the project area, the most recent of which is from an observation made in 1975 (CNDDB, 2011).

California least tern (Sterna antillarum browni)—Federally Endangered, California Endangered, California Fully Protected

California least tern ranges along the beaches along San Francisco Bay and southern California coast from southern San Luis Obispo County, south to San Diego County and nests on sandy, upper ocean beaches, and occasionally mudflats. California least tern forages for small fish in the ocean adjacent to the surf line, in estuaries, or in open ocean. This species could forage in the brackish, fresh, and saltwater marshes, as well as salt pond habitats within the project area. The nearest record of this species is approximately 3.3 miles away from the project area (CNDDB, 2011).

Other Special-status Species

Hoary bat (*Lasiurus cinereus*)—Moderate (Western Bat Working Group)

Hoary bat's range covers all of California. This species roosts in trees that are typically within forests or various types. Hoary bat has potential to occur within the riparian habitat along Coyote Creek within the northern, northeastern, and eastern portions of the project area. The nearest record of this species is approximately 4 miles away from the project area (CNDDB, 2011).

Yuma myotis (*Myotis yumanensis*)—Low (Western Bat Working Group)

Yuma myotis is found throughout California, except for the Colorado and Mojave deserts, from sea level to 11,000 feet above MSL. This species inhabits a wide variety of habitats; however, optimal habitat is open forest and woodlands near water bodies. Yuma myotis has potential to occur within the riparian habitat along Coyote Creek in the northern, northeastern, and eastern portions of the project area. The nearest record of this species is approximately 5.9 miles away from the project area (CNDDB, 2011).

Cooper's hawk (*Accipiter cooperii*)—California Watch List, Migratory Bird Treaty Act

Cooper's hawk is found throughout California, except high altitudes in the Sierra Nevada. This species winters in the Central Valley, southeastern desert regions, and plains east of the Cascade Range. Cooper's hawk inhabits a wide variety of habitats from riparian woodlands, foothill pine-oak woodlands, and mixed coniferous forest. This species has potential to occur within riparian habitat along Coyote Creek in the northern, northeastern, and eastern portions of the project area. The nearest record of this species is approximately 7.9 miles away from the project area (CNDDB, 2011).

Sharp-shinned hawk (*Accipiter striatus*)—California Watch List, Migratory Bird Treaty Act

Sharp-shinned hawk is a permanent resident in the Sierra Nevada, Cascade, Klamath, and north Coast Ranges at mid-elevations and along the coast in Marin, San Francisco, San Mateo, Santa Cruz, and Monterey Counties. This species winters over the remainder of the state except at very high elevations. Sharp-shinned hawk is found in dense canopied ponderosa pine or mixed coniferous forest and riparian habitats. This species has potential to occur in the riparian habitat along Coyote Creek northern, northeastern, and eastern portions of the project area. The nearest record of this species is approximately 6.2 miles away from the project area (CNDDB, 2011).

Great blue heron (*Ardea herodias*)—California Department of Forestry Sensitive, Migratory Bird Treaty Act

Great blue heron is found in many freshwater and calm intertidal habitats throughout the state, and nests primarily in or near suitable habitat except high elevations in the Sierra Nevada and Cascade Ranges. This species has been documented in numerous locations in the surrounding South San Francisco Bay. Great blue heron has potential to occur within the wetland habitats in the southwestern and northern portions of the project area. The nearest record of this species is approximately 1.5 miles away from the project area (CNDDB, 2011).

Snowy egret (*Egretta thula*)—Migratory Bird Treaty Act

Snowy egret is found on shores of coastal estuaries, fresh and saline emergent wetlands, ponds, slow rivers, irrigation ditches, and wet fields in coastal lowlands and other lowland areas throughout California. This species nests in dense marsh vegetation or at low heights in trees. Snowy egret was observed on the shore of Pond A18, which is immediately northeast of the project area. This species has potential to occur within various wetland habitats mostly in the northern and western portions of the project area near Artesian Slough, Coyote Creek, and salt marshes and ponds.

Prairie falcon (*Falco mexicanus*)—California Watch List, Migratory Bird Treaty Act

Prairie falcon is a permanent resident of the south Coast Range, Traverse, Peninsular, and northern Cascade Ranges, southeastern deserts, Inyo-White Mountains, foothills surrounding the Central Valley, and the Sierra Nevada in Modoc, Lassen, and Plumas Counties. This species is known to winter in the Central Valley, along the coast from Santa Barbara to San Diego County and in Marin County. Prairie falcon forages in a wide variety of habitats, but nests on cliffs or escarpments that typically overlook uplands or open terrain. This species has potential to forage within the non-native grassland and open habitats, primarily in the southern portion of the project area. The nearest record of this species is approximately 4.3 miles away from the project area (CNDDB, 2011).

Migration Corridors

Coyote Creek and associated riparian habitat provides numerous resources for many wildlife species. Terrestrial and aerial wildlife species frequently use riparian habitat as migratory corridors for cover and abundant food sources provided by diverse and ample vegetation. Additionally, anadromous fish species use streams, rivers, and creeks that run through riparian habitat as migratory connections to upstream spawning habitat and downstream dispersal habitat. Predators are also drawn to riparian habitat for the abundant prey animals it supports. Coyote Creek is one of the few remaining aquatic and riparian connections from the greater San José/Silicon Valley to the southern extent of the San Francisco Bay.

Special-Status Plants

Background Research

A search of CNDDB databases and literature review identified 24 special-status plant species with known occurrences within 10 miles of the project area. Upon further review of the local habitat conditions and specifics of the documented CNDDB occurrence records 12 of the original 24 special-status plant species were deemed to have no potential to occur within the project area due to lack of suitable habitat. The remaining 12 special-status plant species and their potential to occur in the project area are listed in **Table 2** .

Surveys Conducted

Reconnaissance-level surveys of the project area were conducted on August 16–18, September 22 and October 6, 2011. During reconnaissance-level surveys one special status plant species, Congdon's tarplant, was observed in the southwestern portion of the project area (Figure 6). Protocol-level surveys for Congdon's tarplant were conducted on October 7 and 12, 2011.

Federal or State Endangered or Threatened Species

No state listed species have the potential to occur in the project area. Two federally listed plant species, Contra Costa goldfields (*Lasthenia conjugens*) and California seablite (*Suaeda californica*) have the potential to occur in the project area. Neither were observed during field surveys in 2007 (H.T. Harvey and Associates 2007) or 2011.

Contra Costa goldfields (*Lasthenia conjugens*)—Federally Endangered; CRPR List 1B.1

Contra Costa goldfields, an annual herb in the sunflower (*Asteraceae*) family, is found in wet areas in cismontane woodland, valley and foothill grassland, vernal pools, alkaline playas or saline vernal pools and swales, and seasonal wetlands from MSL to 1,545 feet above MSL. This species typically blooms from March to June.

There are four recorded occurrences of Contra Costa goldfields within ten miles of the project area (CNDDB, 2011). Two of these occurrences are historical records and the populations are believed extirpated. The other two records are from near Fremont, approximately 2 miles from the project area. Both of these populations, one last observed in the Don Edwards National Wildlife Refuge in 2003, and one observed near Sky Sailing airport in 2001, are presumed extant (CNDDB, 2011).

Although no suitable cismontane woodland or vernal pool habitat exists within the project area; potentially suitable saline-alkaline seasonal wetlands and grasslands for this species are found in the project area. No individuals of Contra Costa goldfields were observed during field surveys conducted in 2011; however, species specific surveys were not conducted and field surveys took place outside of this species typical bloom period. This species was not observed during special-status plant surveys conducted in 1998 and 2003 by H.T. Harvey and Associates (H.T. Harvey and Associates, 2007).

California seablite (*Suaeda californica*)—Federally Endangered; CRPR 1B.1

California seablite is an evergreen shrub in the goosefoot (*Chenopodiaceae*) family which typically blooms from July to October. This species is found on the margins of coastal and tidal salt marshes from MSL to 50 feet above MSL. There are two recorded occurrences of California seablite within 10 miles of the project area (CNDDB 2011). The closest known occurrence is from near Fremont, approximately 1.4 miles from the project area and the population was last observed in 1986. Although, suitable salt marsh habitat for California seablite exists in the project area, this species is believed to be extirpated from Santa Clara County and the San Francisco Bay; therefore it is highly unlikely that this species would exist in the project area. No individuals of California seablite were observed during field surveys conducted in 2011. This species was not observed during special-status plant surveys conducted in 1998 and 2003 by H.T. Harvey and Associates (H.T. Harvey and Associates, 2007).

California Native Plant Society Species

Alkali milk-vetch (*Astragalus tener* var. *tener*)—CRPR 1B.2

Alkali milk-vetch, an annual herb in the pea (*Fabaceae*) family, typically blooms from March to June. This species is found in alkali playas, in valley and foothill grassland on adobe clay soils, or in vernal pools on alkaline soils from MSL to 200 feet above MSL.

There are five recorded occurrences of alkali milk-vetch listed as occurring within 10 miles of the project area. Four of these five occurrences are believed to be extirpated. The closest known extant population of alkali milk-vetch is located approximately 1.9 miles north of the project area near Fremont. This population was last observed in 2002 and was found in the upper extent of created vernal pool habitat. Although the species is believed to be extirpated from the immediate vicinity of the project area, marginally suitable habitat may occur in alkaline grasslands and alkaline seasonal wetlands existing in the project area. No individuals of alkali milk-vetch were observed during field surveys conducted in 2011; however, species specific surveys were not conducted and field surveys took place outside of this species typical bloom period. This species was not observed during special-status plant surveys conducted in 1998 and 2003 by H.T. Harvey and Associates (H.T. Harvey and Associates, 2007).

Brittlescale (*Atriplex depressa*)—CRPR 1B.2

Brittlescale, an annual herb in the goosefoot family, typically blooms from April to October. This species is found in relatively bare areas on alkaline clay soils in chenopod scrub, playas, valley and foothill grasslands, in meadows and seeps, and vernal pools on alkaline, clay soils from MSL to 1,050 feet above MSL.

There is one recorded occurrence of brittlescale listed as occurring within 10 miles of the project area (CNDDB, 2011). This population occurs in the Warm Springs Seasonal Wetland Unit of Don Edwards National Wildlife Refuge approximately 1.8 miles north of the project area. This population, presumed to be extant, was last observed in 2003 and was found growing in eroded ground near vernal pools in areas with high surface soil salinity. Suitable alkaline grasslands and alkaline seasonal wetlands habitat for brittlescale exists in the project area. No individuals of brittlescale were observed during field surveys conducted in 2011; however, species specific surveys were not conducted.

Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)—CRPR 1B.2

Congdon's tarplant, an annual herb in the sunflower family, typically blooms from June to November. This species is found in alkaline soils in annual grasslands typically on lower slopes, flats, and swales from MSL to 755 feet above MSL. It is also sometimes found on saline soils. This species can also tolerate disturbance and can be found in disked fields.

There are 11 recorded occurrence of Congdon's tarplant within 10 miles of the project area (CNDDB, 2011). Individuals of Congdon's tarplant were observed within the project area during reconnaissance and protocol level surveys conducted between August and October, 2011. Approximately 1,700 individuals of Congdon's tarplant were observed growing in alkaline soils in alkali and annual grassland and seasonal wetland habitat in the southwestern portion of the project area (Figure 6).

Table 2. Special-Status Plant Species with Potential to Occur in the Project Region

Scientific and Common Names	Status Federal/State/CNPS	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Astragalus tener var. tener Alkali milk-vetch	--/--/1B.2	Southern Sacramento Valley, northern San Joaquin Valley, east San Francisco Bay Area	Alkali playas, on adobe clay in valley and foothill grassland, vernal pools on alkaline soils; below 60 meters	Low; only marginally suitable habitat exists in project area a
Atriplex depressa Brittlescale	--/--/1B.2	Western and eastern Central Valley and adjacent foothills on west side of Central Valley	Alkaline clay soils in chenopod scrub, playas, valley and foothill grasslands, meadows and seeps and vernal pools on alkaline, clay soils; below 320 meters	Moderate; suitable habitat is present in the project area. Known occurrence from Don Edwards National Wildlife Refuge
Atriplex joaquiniana San Joaquin spearscale	--/--/1B.2	West edge of Central Valley from Glenn County to Tulare County. Also reported from Monterey and San Luis Obispo Counties	Alkaline soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland; below 835 meters	Moderate; suitable habitat exists in the project area. Known occurrence from Don Edwards National Wildlife Refuge
Atriplex minuscula Lesser saltscale	--/--/1B.1	Sacramento and San Joaquin Valley, Butte County and from Merced County to Kern County. Also recorded from Don Edwards NWR in Alameda County.	Sandy alkaline soils in chenopod scrub, playas, valley and foothill grassland; 15-200 meters	Moderate; suitable habitat is present in the project area. Known occurrence from Don Edwards National Wildlife Refuge
Centromadia parryi ssp. *congdonii* Congdon’s tarplant	--/--/1B.2	East San Francisco Bay Area, Salinas Valley, Los Osos Valley	Alkaline soils in annual grassland, on lower slopes, flats, and swales, sometimes on saline soils; below 230 meters	Present in project area
Chloropyron maritimum ssp. *palustre* *(Cordylanthus maritimus* ssp. *palustris)* Point Reyes bird’s-beak	--/--/1B.2	Coastal northern California, from Humboldt to Santa Clara County	Coastal salt marsh, tidal salt marsh; below 10 meters	Low; suitable habitat is present in the project area; however species is considered extirpated from southern San Francisco Bay Area
Eryngium aristulatum var. *hooveri* Hoover’s button-celery	--/--/1B.1	South San Francisco Bay area, South Coast Ranges in Alameda, San Benito, Santa Clara, and San Luis Obispo Counties	Vernal pools; 3-45 meters	Low; only marginally suitable habitat exists in project area.

Scientific and Common Names	Status Federal/State/CNPS	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Lasthenia conjugens Contra Costa goldfields	E/--/1B.1	Scattered occurrences in Coast Range valleys and southwest edge of Sacramento Valley, Alameda, Contra Costa, Monterey, Marin, Napa, Solano and Sonoma Counties. Presumed extirpated in Mendocino, Santa Barbara and Santa Clara Counties	Wet areas in cismontane woodland, valley and foothill grassland, vernal pools, alkaline playas or saline vernal pools and swales; seasonal wetlands below 470 meters	Low; this species is believed to be extirpated from Santa Clara County; however, alkaline seasonal wetlands similar to habitat where this species currently occurs is present in the project area.
Navarretia prostrata Prostrate vernal pool navarretia	--/--/1B.1	Western San Joaquin Valley, interior South Coast Ranges, central South Coast, Peninsular Ranges: Alameda, Los Angeles, Merced, Monterey, Orange, Riverside, San Diego, and San Luis Obispo Counties.	Vernal pools and mesic areas in coastal scrub and alkali grasslands, seasonal wetlands in alkaline soils; 15-700 meters	Low; only marginally suitable habitat present; presumed extinct in California
Plagiobothrys glaber Hairless popcorn-flower	--/--/1A	Coastal valleys from Marin County to San Benito Counties. Presumed extirpated in Santa Clara County.	Alkaline meadows and seeps, coastal salt marsh and swamps; 15-180 meters	Low; suitable habitat is present in the project area; however, the species is believed to be extirpated in Santa Clara County and the surrounding San Francisco Bay Area
Suaeda californica California seablite	E/--/1B.1	Morro Bay, San Luis Obispo County, and San Francisco and Contra Costa Counties; historically found in the south San Francisco Bay.	Margins of tidal salt marsh; below 15 meters	Low; suitable habitat is present in the project area; however, the species is presumed extirpated in Santa Clara County and the San Francisco Bay.
Trifolium hydrophilum (T. depauperatum var. *hydrophilum)* Saline clover	--/--/1B.2	Sacramento Valley, central western California.	Salt marsh, mesic alkaline areas in Valley and foothill grasslands, vernal pools, marshes and swamps; below 300 meters.	Moderate; suitable habitat is present in the project area; closest known occurrence is from Don Edwards National Wildlife Refuge west of the Warm Springs District.

Scientific and Common Names	Status Federal/State/CNPS	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area

Notes:

Status explanations:
Federal

E	=	listed as endangered under the ESA
T	=	listed as threatened under the ESA
–	=	no listing

State

E	=	listed as endangered under CESA
T	=	listed as threatened under CESA
–	=	no listing

CNPS

1A – presumed extinct in California
1B.1 –rare, threatened or endangered in California and elsewhere; seriously threatened in California
1B.2 – rare, threatened or endangered in California and elsewhere; fairly threatened in California

Potential Occurrence in the Study Area

High:	Known occurrences of the species within the study area, or CNDDB, or other documents, records the occurrence of the species within a 10-mile radius of the study area; suitable habitat is present within the project area
Moderate:	CNDDB, or other documents, records the known occurrence of the species within a 10-mile radius of the study area; suitable habitat is present within the project area
Low:	CNDDB, or other documents, may record the occurrence of the species within a 10-mile radius of the study area; however, only marginal or poor quality suitable habitat is present within the study area, or the species is believed to be extirpated from the vicinity of the project area

Hairless popcorn-flower (*Plagiobothrys glaber*)—CRPR 1A

Hairless popcorn-flower is an annual herb in the borage (*Boraginaceae*) family that typically blooms from March to May. This species is found in alkaline meadows and seeps and in coastal salt marsh and swamps between 45 and 60 feet above MSL.

There are three recorded occurrences of hairless popcorn-flower within 10 miles of the project area (CNDDB, 2011). All three of these records are historical records and these populations are believed to be extirpated. Although suitable alkaline meadow habitat exists, hairless popcorn-flower is believed to be extirpated in Santa Clara County and the surrounding San Francisco Bay Area, therefore, it is highly unlikely that this species would exist in the project area. No individuals of hairless popcorn-flower were observed during field surveys conducted in 2011. This species was not observed during special-status plant surveys conducted in 1998 and 2003 by H.T. Harvey and Associates (H.T. Harvey and Associates, 2007).

Hoover's button celery (*Eryngium aristulatum* var. *hooveri*)—CRPR 1B.1

Hoover's button celery is an annual to perennial herb in the carrot (*Apiaceae*) family that typically blooms in July. This species is generally found in vernal pool habitat from 10 to 150 feet above MSL; however it has also been observed in alkaline depressions, roadside ditches and other wet places near the coast (CNDDB, 2011).

There are four recorded occurrence of Hoover's button celery listed as occurring within 10 miles of the project area (CNDDB, 2011). Three of these occurrences are historic records and the populations are believed to be extirpated. One occurrence of Hoover's button celery, located near Sky Sailing Airport west of Fremont, approximately 2.3 miles north of the project area is presumed extant. This population was last observed in 1996 in a disturbed seasonal wetland growing with flatface downingia (*Downingia pulchella*), woolly marbles (*Psilocarphus brevissimus* var. *brevissimus*), tiny mouse tail (*Myosurus minimus*), common brassbuttons (*Cotula coronopifolia*), and stalked popcornflower (*Plagiobothrys stipitatus* var. *stipitatus*). Marginally suitable alkaline wetland habitat for Hoover's button celery exists in the project area. No individuals of Hoover's button celery were observed during field surveys conducted in 2011; however, species specific surveys were not conducted and field surveys took place outside of this species typical bloom period.

Lesser saltscale (*Atriplex minuscula*)—CRPR 1B.1

Lesser saltscale is an annual herb in the goosefoot family that typically blooms from May to October. This species is found in alkaline soils in chenopod scrub, playas, and valley and foothill grasslands from 50 to 670 feet above MSL.

There is one recorded occurrence of lesser saltcase within 10 miles of the project area (CNDDB, 2011). This population, last observed in 2003, occurs in the Warm Springs Seasonal Wetland Unit of Don Edwards National Wildlife Refuge approximately 1.7 miles north of the project area. Found growing in eroded areas near vernal pools in alkali grassland with common tarweed (*Centromadia pungens*) and bush seepweed (*Suaeda moquini*), this population is presumed to be extant. Individuals in this area were originally identified as brittlescale, but were recently re-identified as lesser saltscale (CNDDB, 2011). Suitable alkaline grassland habitat for brittlescale exists in the project area. No individuals of lesser saltscale were observed during field surveys conducted in 2011; however, species specific surveys were not conducted.

Point Reyes bird's-beak (*Chloropyron maritimum* ssp. *palustre* [*Cordylanthus maritimus* ssp. *palustris*])—CRPR 1B.2

Point Reyes bird's-beak is an hemiparasitic annual herb in the recently moved from the figwort (*Scrophulariacea*) family to the broomrape (*Orobanchaceae*) family. This species typically blooms from April to October and is found in coastal and tidal salt marshes from MSL to 35 feet above MSL in elevation.

There are three recorded occurrence of Point Reyes bird's-beak within 10 miles of the project area (CNDDB, 2011). All three of these records are historical records and these populations are believed to be extirpated. Although suitable salt marsh habitat exists, Point Reyes bird's-beak is believed to be extirpated from Santa Clara County and the southern San Francisco Bay Area; therefore it is highly unlikely that this species would exist in the project area. No individuals of Point Reyes bird's-beak were observed during field surveys conducted in 2011. This species was not observed during special-status plant surveys conducted in 1998 and 2003 by H.T. Harvey and Associates (H.T. Harvey and Associates, 2007).

Prostrate vernal pool navarretia (*Navarretia prostrata*)—CRPR 1B.1

Prostrate vernal pool navarretia is an annual herb in the phlox (*Polemoniaceae*) family that typically blooms from April to July. This species is found in vernal pools and mesic areas in coastal scrub and alkali grasslands in elevations between 50 and 2,300 feet above MSL.

There are two recorded occurrences of prostrate vernal pool navarretia within 10 miles of the project area (CNDDB, 2011). These populations occur in the Pacific Commons Preserve of the Don Edwards National Wildlife Refuge near Fremont approximately 2 miles north of the project area. Observed in seasonal wetlands and created vernal pools, these occurrences were last surveyed for in 2001 and 2003 and are presumed to be extant. Suitable vernal pool habitat does not exist in the project area and only marginally suitable alkaline seasonal wetlands habitat for prostrate vernal pool navarettia exists in the project area. No individuals of prostrate vernal pool navarretia were observed during field surveys conducted in 2011; however, species specific surveys were not conducted and field surveys took place outside of this species typical bloom period.

Saline clover (*Trifolium hydrophilum*)—CRPR 1B.2

Saline clover is an annual herb in the pea family that typically blooms from April to June. This species is found in salt marshes, swamps, vernal pools and mesic, alkaline areas in grasslands from MSL to 100 feet above MSL.

There are four recorded occurrences of saline clover within 10 miles of the project area (CNDDB, 2011). Two of these records are based on historic observations and the populations are likely extirpated. The other two occurrences were last observed in 2003 and 2004 and are presumed extant. One of these occurrences is recorded from near Newark and the other was observed in Don Edwards National Wildlife Refuge west of the Warm Springs District of Fremont. The population of saline clover observed in Don Edwards National Wildlife Refuge was found growing in vernal pool habitat with Italian ryegrass, woolly marbles, common spikerush (*Eleocharis palustris*), tiny mousetail, alkali heath, Jepson's button celery (*Eryngium aristulatum*), common brassbuttons, and the endangered Contra Costa goldfields. Suitable salt marsh habitat and marginally suitable mesic habitat in alkaline grasslands for saline clover exists in the project area. No individuals of saline clover were observed during field surveys conducted in 2011; however, species specific surveys were not conducted and field surveys took place outside of this species typical bloom period.

San Joaquin spearscale (*Atriplex joaquiniana*)—CRPR 1B.2

San Joaquin spearscale is an annual herb in the goosefoot family, which typically blooms from April to October. This species is found in alkaline soils in chenopod scrub, meadows and seeps, playas, and valley and foothill grassland from MSL to 2,740 feet above MSL.

There are three recorded occurrence of San Joaquin spearscale within 10 miles of the project area (CNDDB, 2011). Two of these records are based on historic observations and the populations are likely extirpated. One occurrence of San Joaquin spearscale has been recorded from the Pacific Commons Preserve. This population, located approximately 2 miles north of the project area was last surveyed for and observed in July 2011. Individuals of San Joaquin spearscale in this area were found growing in alkaline grassland along the upland edge of created vernal pools with non-native forbs such as Italian ryegrass, black mustard and annual yellow sweetclover (*Melilotus indicus*) (CNDDB, 2011). Suitable alkaline grasslands and alkaline seasonal wetlands habitat for San Joaquin spearscale exists in the project area. No individuals of San Joaquin spearscale were observed during field surveys conducted in 2011; however, species specific surveys were not conducted. This species was not observed during special-status plant surveys conducted in 1998 and 2003 by H.T. Harvey and Associates (H.T. Harvey and Associates, 2007).

Chapter 5
References

Bureau of Soils. 1903. Soil Survey of the San José Area, California. Federal Operations. Accessed: September 2, 2011. Available at: http://soils.usda.gov/survey/online_surveys/california/sanjoseCA1903/sanjoseCA1903.pdf

California Department of Fish and Game (CDFG). 2009. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities.* (Revision of 2000 guidelines). Sacramento, CA. 7 pp.

———. 2010. Natural Communities List. Available: http://www.dfg.ca.gov/biogeodata/vegcamp/natural_comm_list.asp. Accessed: September 9, 2011.

California Native Plant Society (CNPS). 2001. *CNPS Botanical Survey Guidelines.* Sacramento, CA. Available:http://www.cnps.org/cnps/rareplants/pdf/cnps_survey_guidelines.pdf

California Natural Diversity Data Base (CNDDB). 2011. *Rarefind 4*. California Department of Fish and Game. Available: http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp

City of San José. 2011a. DRAFT Envision San José 2040 General Plan. Revised 10/17/2011. Available at: http://www.sanjoseca.gov/planning/gp_update/draftplan.asp

———. 2011b. Live Tree Removal Application. Revised 03/15/2011. Available at: http://www.sanjoseca.gov/planning/applications/dev_tr_app.pdf

City of San José. 1994. Riparian Corridor Policy Study. Revised March 1999. Available at: http://www.sanjoseca.gov/planning/pdf/dg_Riparian_Corridor.pdf

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. U.S. Army Engineers Waterways Experiment Station. Vicksburg, MS.

Faanes *et al.* 1992. Birders and U.S. Federal Laws. N. Prairie Wildlife Res. Center Online. Accessed on November 1, 2011. Available at: http://www.npwrc.usgs.gov/resource/birds/birdlaws/index.htm.

H.T. Harvey & Associates. 2007. *San José/Santa Clara Water Pollution Control Plant/Pond A18 Master Planning: Plant Lands Opportuniites and Constraints Assessment.* Prepared for City of San José, San José, CA.

———. 2010. *Envision San José 2040 General Plan Update. Biological Resources Report.* Prepared for David J. Powers and Associates, San José, CA.

National Resource Conservation Service. 2011. *Web Soil Survey*. US Depart. of Agriculture. Accessed on: November 2, 2011. Available at: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Santa Clara Valley Habitat Plan. 2010. Santa Clara Valley Habitat Plan Public Draft. Available online at: http://www.scv-habitatplan.org/www/site/alias__default/341/public_draft_habitat_plan.aspx

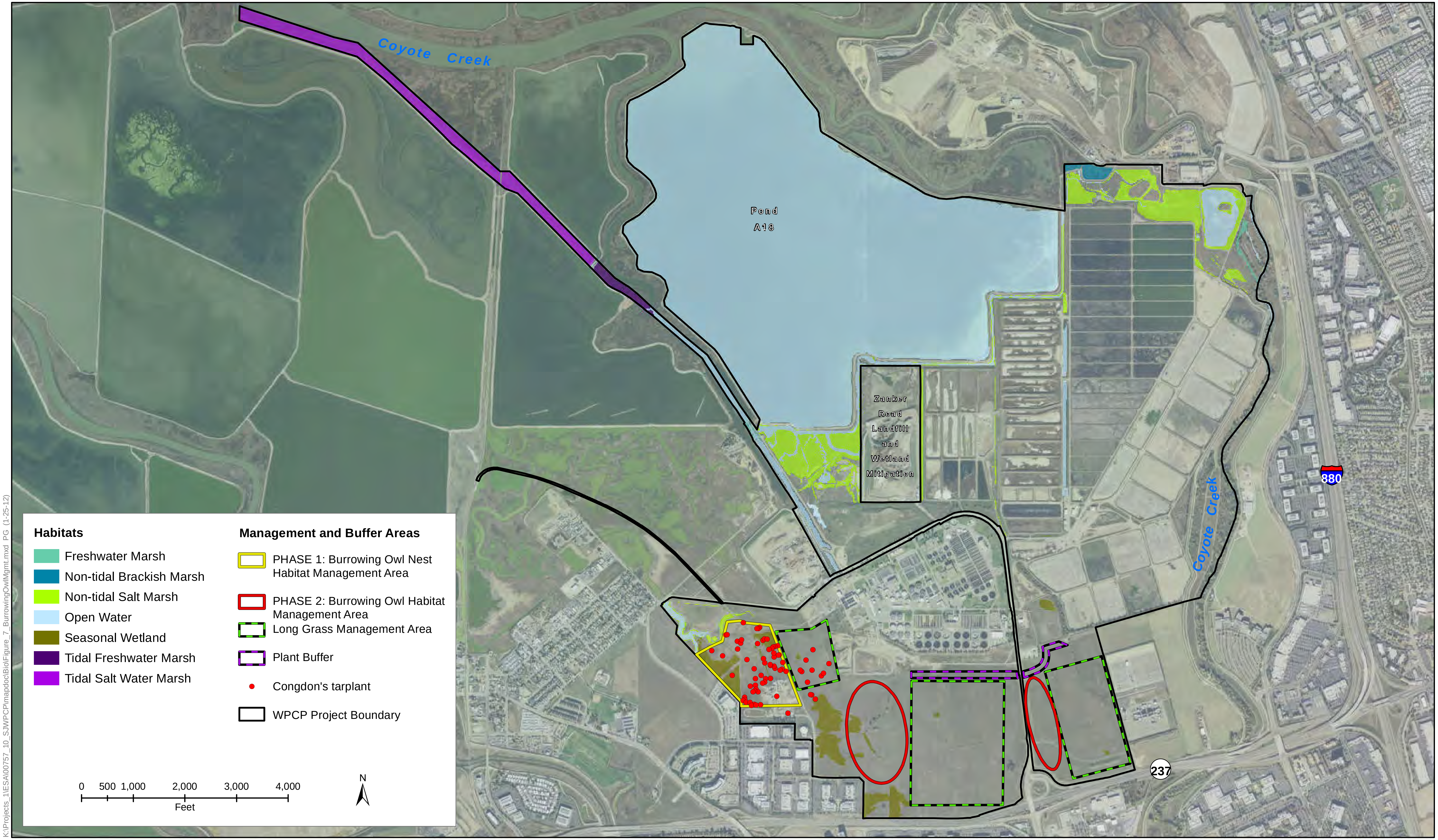
South Bay Salt Pond Restoration. 2010. *South Bay Salt Pond Annual 2010 Report*. Accessed on: October 28, 2011. Available at: http://www.southbayrestoration.org/documents/sbspannualreport2010final.pdf

———. 2011. *Project Description*. Accessed on: October 28, 2011. Available at: http://www.southbayrestoration.org/Project_Description.html

U.S. Army Corps of Engineers (USACE). 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*. September. Edited by J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center. Available: <http://www.usace.army.mil/CECW/Documents/cecwo/reg/trel08-28.pdf>.

U.S. Fish and Wildlife Service (USFWS). 2011. List of Federally Endangered and Threatened Species that Occur in or may be Affected by Projects in Santa Clara County or on the Milpitas U.S.G.S. 7.5-minute quad. Accessed on: October 27, 2011. Available at: http://www.fws.gov/sacramento/y_old_site/es/spp_lists/auto_list_form.cfm

U.S. Geological Survey (USGS). 1961 (Photorevised 1980). Milpitas, California 7.5-minute Topographic Quadrangle. Dept. of the Interior.



ICF INTERNATIONAL

San Jose Water Pollution Control Plant

Figure 7
Burrowing Owl Nesting and Foraging Habitat Management Areas

Appendix A

RAREFIND List

	Scientific Name	Common Name	Element Code	Federal Status	State Status	Global Rank	State Rank	CNPS	CDFG
1	Accipiter cooperii	Cooper's hawk	ABNKC12040			G5	S3		
2	Accipiter striatus	sharp-shinned hawk	ABNKC12020			G5	S3		
3	Adela oplerella	Opler's longhorn moth	IILEE0G040			G2G3	S2S3		
4	Agelaius tricolor	tricolored blackbird	ABPBXB0020			G2G3	S2		SC
5	Ambystoma californiense	California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3		SC
6	Antrozous pallidus	pallid bat	AMACC10010			G5	S3		SC
7	Aquila chrysaetos	golden eagle	ABNKC22010			G5	S3		
8	Arctostaphylos andersonii	Anderson's manzanita	PDERI04030			G2	S2?	1B.2	
9	Ardea herodias	great blue heron	ABNGA04010			G5	S4		
10	Astragalus tener var. tener	alkali milk-vetch	PDFAB0F8R1			G2T2	S2	1B.2	
11	Athene cunicularia	burrowing owl	ABNSB10010			G4	S2		SC
12	Atriplex depressa	brittlescale	PDCHE042L0			G2Q	S2.2	1B.2	
13	Atriplex joaquiniana	San Joaquin spearscale	PDCHE041F3			G2	S2	1B.2	
14	Atriplex minuscula	lesser saltscale	PDCHE042M0			G1	S1.1	1B.1	
15	Balsamorhiza macrolepis var. macrolepis	big-scale balsamroot	PDAST11061			G3G4T2	S2	1B.2	
16	California macrophylla	round-leaved filaree	PDGER01070			G2	S2	1B.1	
17	Campanula exigua	chaparral harebell	PDCAM020A0			G2	S2.2	1B.2	
18	Centromadia parryi ssp. congdonii	Congdon's tarplant	PDAST4R0P1			G4T2	S2	1B.2	
19	Charadrius alexandrinus nivosus	western snowy plover	ABNNB03031	Threatened		G4T3	S2		SC
20	Chloropyron maritimum ssp. palustre	Point Reyes bird's-beak	PDSCR0J0C3			G4?T2	S2.2	1B.2	
21	Chorizanthe robusta var. robusta	robust spineflower	PDPGN040Q2	Endangered		G2T1	S1.1	1B.1	
22	Circus cyaneus	northern harrier	ABNKC11010			G5	S3		SC
23	Cirsium fontinale var. campylon	Mt. Hamilton fountain thistle	PDAST2E163			G2T2	S2	1B.2	
24	Clarkia concinna ssp. automixa	Santa Clara red ribbons	PDONA050A1			G5?T3	S3.3	4.3	
25	Collinsia multicolor	San Francisco collinsia	PDSCR0H0B0			G2	S2.2	1B.2	
26	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010			G4	S2S3		SC
27	Danaus plexippus	monarch butterfly	IILEPP2010			G5	S3		
28	Dipodomys heermanni berkeleyensis	Berkeley kangaroo rat	AMAFD03061			G3G4T1	S1		
29	Dipodomys venustus venustus	Santa Cruz kangaroo rat	AMAFD03042			G4T1	S1		
30	Dirca occidentalis	western leatherwood	PDTHY03010			G2G3	S2S3	1B.2	
31	Dudleya abramsii ssp. setchellii	Santa Clara Valley dudleya	PDCRA040Z0	Endangered		G3T2	S2	1B.1	
32	Egretta thula	snowy egret	ABNGA06030			G5	S4		
33	Elanus leucurus	white-tailed kite	ABNKC06010			G5	S3		

	Scientific Name	Common Name	Element Code	Federal Status	State Status	Global Rank	State Rank	CNPS	CDFG
34	Emys marmorata	western pond turtle	ARAAD02030			G3G4	S3		SC
35	Eriogonum nudum var. decurrens	Ben Lomond buckwheat	PDPGN08492			G5T2	S2.1	1B.1	
36	Eryngium aristulatum var. hooveri	Hoover's button-celery	PDAPI0Z043			G5T2	S2.1	1B.1	
37	Euphydryas editha bayensis	Bay checkerspot butterfly	IILEPK4055	Threatened		G5T1	S1		
38	Falco mexicanus	prairie falcon	ABNKD06090			G5	S3		
39	Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	unknown code...	G4T3	S2		
40	Fritillaria liliacea	fragrant fritillary	PMLIL0V0C0			G2	S2.2	1B.2	
41	Geothlypis trichas sinuosa	saltmarsh common yellowthroat	ABPBX1201A			G5T2	S2		SC
42	Hoita strobilina	Loma Prieta hoita	PDFAB5Z030			G2	S2	1B.1	
43	Lasiurus cinereus	hoary bat	AMACC05030			G5	S4?		
44	Lasthenia conjugens	Contra Costa goldfields	PDAST5L040	Endangered		G1	S1.1	1B.1	
45	Laterallus jamaicensis coturniculus	California black rail	ABNME03041		Threatened	G4T1	S1		
46	Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered		G3	S2S3		
47	Linderiella occidentalis	California linderiella	ICBRA06010			G3	S2S3		
48	Malacothamnus arcuatus	arcuate bush-mallow	PDMAL0Q0E0			G2Q	S2.2	1B.2	
49	Malacothamnus hallii	Hall's bush-mallow	PDMAL0Q0F0			G2Q	S2	1B.2	
50	Masticophis lateralis euryxanthus	Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2		
51	Melospiza melodia pusillula	Alameda song sparrow	ABPBXA301S			G5T2?	S2?		SC
52	Microcina homi	Hom's micro-blind harvestman	ILARA47020			G1	S1		
53	Monardella villosa ssp. globosa	robust monardella	PDLAM180P7			G5T2	S2.2	1B.2	
54	Monolopia gracilens	woodland woollythreads	PDAST6G010			G2G3	S2S3	1B.2	
55	Myotis evotis	long-eared myotis	AMACC01070			G5	S4?		
56	Myotis yumanensis	Yuma myotis	AMACC01020			G5	S4?		
57	Navarretia prostrata	prostrate vernal pool navarretia	PDPLM0C0Q0			G2?	S2.1?	1B.1	
58	Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	AMAFF08082			G5T2T3	S2S3		SC
59	Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	CTT52110CA			G3	S3.2		
60	Oncorhynchus mykiss irideus	steelhead - central California coast DPS	AFCHA0209G	Threatened		G5T2Q	S2		
61	Plagiobothrys glaber	hairless popcorn-flower	PDBOR0V0B0			GH	SH	1A	
62	Rallus longirostris obsoletus	California clapper rail	ABNME05016	Endangered	Endangered	G5T1	S1		
63	Rana boylii	foothill yellow-legged frog	AAABH01050			G3	S2S3		SC
64	Rana draytonii	California red-legged frog	AAABH01022	Threatened		G4T2T3	S2S3		SC
65	Reithrodontomys raviventris	salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2		

	Scientific Name	Common Name	Element Code	Federal Status	State Status	Global Rank	State Rank	CNPS	CDFG
66	Riparia riparia	bank swallow	ABPAU08010		Threatened	G5	S2S3		
67	Sidalcea malachroides	maple-leaved checkerbloom	PDMAL110E0			G3G4	S3S4.2	4.2	
68	Sorex vagrans halicoetes	salt-marsh wandering shrew	AMABA01071			G5T1	S1		SC
69	Sternula antillarum browni	California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2S3		
70	Streptanthus albidus ssp. albidus	Metcalf Canyon jewel-flower	PDBRA2G011	Endangered		G2T1	S1.1	1B.1	
71	Streptanthus albidus ssp. peramoenus	most beautiful jewel-flower	PDBRA2G012			G2T2	S2.2	1B.2	
72	Stuckenia filiformis	slender-leaved pondweed	PMPOT03090			G5	S1S2	2.2	
73	Suaeda californica	California seablite	PDCHE0P020	Endangered		G1	S1.1	1B.1	
74	Sycamore Alluvial Woodland	Sycamore Alluvial Woodland	CTT62100CA			G1	S1.1		
75	Trifolium hydrophilum	saline clover	PDFAB400R5			G2?	S2.2?	1B.2	
76	Tryonia imitator	mimic tryonia (=California brackishwater snail)	IMGASJ7040			G2G3	S2S3		
77	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2T3	S2S3		

Appendix B
USFWS List

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

October 27, 2011

Document Number: 111027065556

Eric Christensen
ICF International
75 E. Santa Clara St., Suite 300
San Jose, CA 95113

Subject: Species List for San Jose/Santa Clara Water Pollution Control Plant - Existing Conditions Report

Dear: Mr. Christensen

We are sending this official species list in response to your October 27, 2011 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be January 25, 2012.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at www.fws.gov/sacramento/es/branches.htm.

Endangered Species Division

TAKE PRIDE IN AMERICA

U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 111027065556

Database Last Updated: September 18, 2011

Quad Lists

Listed Species

Invertebrates

Branchinecta conservatio

Conservancy fairy shrimp (E)

Branchinecta lynchi

vernal pool fairy shrimp (T)

Euphydryas editha bayensis

bay checkerspot butterfly (T)

Critical habitat, bay checkerspot butterfly (X)

Lepidurus packardi

Critical habitat, vernal pool tadpole shrimp (X)

vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris

green sturgeon (T) (NMFS)

Hypomesus transpacificus

delta smelt (T)

Oncorhynchus kisutch

coho salmon - central CA coast (E) (NMFS)

Oncorhynchus mykiss

Central California Coastal steelhead (T) (NMFS)

Central Valley steelhead (T) (NMFS)

Critical habitat, Central California coastal steelhead (X) (NMFS)

Oncorhynchus tshawytscha

Central Valley spring-run chinook salmon (T) (NMFS)

winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense

California tiger salamander, central population (T)

Critical habitat, CA tiger salamander, central population (X)

Rana draytonii

California red-legged frog (T)

Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Birds

Brachyramphus marmoratus
marbled murrelet (T)

Charadrius alexandrinus nivosus
western snowy plover (T)

Pelecanus occidentalis californicus
California brown pelican (E)

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Vulpes macrotis mutica
San Joaquin kit fox (E)

Plants

Dudleya setchellii
Santa Clara Valley dudleya (E)

Lasthenia conjugens
Contra Costa goldfields (E)
Critical habitat, Contra Costa goldfields (X)

Streptanthus albidus ssp. albidus
Metcalf Canyon jewelflower (E)

Suaeda californica
California sea blite (E)

Proposed Species

Amphibians

Rana draytonii
Critical habitat, California red-legged frog (PX)

Quads Containing Listed, Proposed or Candidate Species:

CALAVERAS RESERVOIR (427A)

MILPITAS (427B)

SAN JOSE WEST (427C)

SAN JOSE EAST (427D)

MOUNTAIN VIEW (428A)

CUPERTINO (428D)

NILES (446C)

LA COSTA VALLEY (446D)

NEWARK (447D)

County Lists

No county species lists requested.

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.

  During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern.

However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be January 25, 2012.

Appendix C

Burrowing Owl Protocol Surveys Memo

Memorandum

Date:	September 23, 2011
To:	Matthew Krupp San José/Santa Clara Water Pollution Control Plant
Cc:	Shilpa Trisal ICF International Jill Hamilton ESA Associates
From:	Eric Christensen ICF International
Subject:	**Burrowing Owl Protocol Surveys of the San José/Santa Clara Water Pollution Control Plant**

On June 1 and 6, 2011, ICF International biologists (Troy Rahmig and Eric Christensen), and on July 11 and 12, 2011, an ICF International biologist (Eric Christensen) conducted protocol-level surveys for the presence of western burrowing owl (*Athene cunicularia hypugaea*) at the San José/Santa Clara Water Pollution Control Plant. Western burrowing owl is a California species of special concern, regulated under section 15380 of the California Environmental Quality Act Guidelines; a raptor species, regulated under Section 3503.5 of the California Department of Fish and Game Code; and a migratory bird, regulated under the Migratory Bird Treaty Act of 1918. The following is a description of the survey performed and the associated results.

Methods and Area Surveyed

Surveys were conducted on the mornings of July 1, 6, 11, and 12, with the first two lasting from approximately 5:00am to 1:00pm and the last two lasting from approximately 5:30am to 11:00am. Surveys were conducted according to protocol developed by the Burrowing Owl Consortium[1] and endorsed by the California Department of Fish and Game. Surveys were conducted at these times to maximize the potential of observing burrowing owls and minimizing the potential of visual disruption created by heat waves reflecting off of the ground. Weather conditions during the surveys were relatively clear and sunny with partial to no overhead cloud cover. During the first survey all areas within the Plant were surveyed. Areas with unsuitable habitat were recorded and

[1] Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. Available at: http://www.dfg.ca.gov/wildlife/nongame/docs/boconsortium.pdf&sa=U&ei=-Q5xTsD0Mo2isQLGv-j0CQ&ved=0CBIQFjAA&usg=AFQjCNGkU0K3xSMlH1O3wTnUu1uDGG6DIA

were not surveyed during the three subsequent surveys. Unsuitable habitats included paved and landscaped areas within and adjacent to Plant facilities, active and covered stockpiles, sludge and bio-solids basins, water treatment lagoons, aquatic areas, an active landfill, and areas of tall, dense vegetation lacking burrows. Locations with high burrow densities were also noted during the initial survey. Subsequent surveys covered areas of habitat suitable for western burrowing owl, namely the western half of the buffer lands located south of the Plant. Surveys were conducted on-foot to ensure total search area coverage, visually searching the area, with the aid of binoculars, for the presence of burrowing owl individuals. Burrows were inspected to determine occupancy by owlsor evidence of burrowing owl activity (e.g. pellets, white-wash, small mammal bones, and feathers).

Survey Results

One active western burrowing owl burrow was observed in the survey area. Specifically, the active burrow was located within the north slope of a recently constructed basin adjacent to the buffer land that was not functional at the time of the surveys, situated southwest of and immediately adjacent to the Plant facilities. Four individual burrowing owls (likely two adults and two juveniles) were observed near the burrow on the ground, in the burrow, and on the fence surrounding the basin during the surveys. One additional burrowing owl individual was observed perched atop the fence that surrounds the buffer land immediately bordering Disk Drive, though no active burrow was discovered. Several inactive, suitable burrows were observed within the northwest portion of the buffer lands. The central and eastern portions of the buffer land, immediately west of Zanker Rd., support relatively dense, tall vegetation comprised primarily of non-native annual grasses interspersed with herbaceous species. These areas did not support the density of small mammal burrows observed in the northwestern portion of the buffer land, as sporadic burrows were observed. Portions of the far eastern portion of the buffer land east of Zanker Rd. has been disced and did not support small mammal burrows during the survey. The land east of Zanker Rd. was actively grazed by sheep (*Ovis aries*) and goats (*Capra aegagrus hircus*) during each of the surveys as part of the Plant's grazing program to manage vegetation accumulation.

Recommendations

Areas of high quality habitat, namely the northwestern portion of the buffer land, for western burrowing owl should continue to be managed to a short grass condition suitable for burrowing owls. Areas of the buffer lands that will not be developed should be managed to provide more suitable habitat for burrowing owl by mowing the buffer land prior to February 15, so vegetation is short when owls are selecting burrows, and following the growing season (late August), in order to maintain low vegetation height to increase the potential for burrowing owl to locate prey items during the winter months. A vegetation management plan could be developed and implemented that would benefit burrowing owls. These recommendations, in combination with each other, are expected to encourage the natural relocation of the burrowing owls observed within the basin located north of the buffer land and south of the Plant, as well as promote a sustainable population of western burrowing owls on Plant lands. A qualified biologist should verify that the active burrow within the basin is no longer active prior to modification of the basin or construction activities within the basin.

If you have additional questions please contact me at 408-216-2819 or echristensen@icfi.com, Troy Rahmig 408-216-2814 or trahmig@icfi.com, or Shilpa Trisal at 408-216-2812 or strisal@icfi.com.

Appendix D
Bufferlands Interim Burrowing Owl Management Plan

San Jose/Santa Clara Water Pollution Control Plant
Bufferlands Interim Burrowing Owl Management Plan
Lynne Trulio and Phil Higgins

Introduction

This report provides the City of San Jose with recommendations for modifying the current management practices at the bufferlands adjacent to the San Jose/Santa Clara Water Pollution Control Plant (WPCP or the Plant) to improve habitat conditions for burrowing owls (*Athene cunicularia*) in the short term. These actions can be taken on the bufferlands in advance of and during the 2012 owl breeding season. The bufferland area is approximately 492 acres of non-native grasslands and wetlands east and west of Zanker Road and south of the Plant itself, including a former horse farm and a former 50-acre mitigation site (Figure 1-TBA). The City is in the process of developing a WPCP Bufferlands Master Plan, which could result in commercial development on much of the grasslands that make up the bufferlands. At this conceptual stage, the City envisions that the Master Plan will designate approximately 180 acres of habitat for burrowing owls. This report also includes an initial evaluation of which parts of the bufferlands appear to be best suited for protection as owl habitat under the Master Plan.

Increasing the habitat quality for burrowing owls at the bufferlands is expected to increase the number of nesting owls and promote reproductive success, two goals the City of San Jose would like to achieve on the bufferlands. While owls have nested on the bufferlands within the last decade, the numbers have declined. In fact, owl numbers have declined precipitously in northern Santa Clara County in the last 20 years (Trulio and Chromzak, 2007; Barclay, 2010).

To develop recommendations for this report, we reviewed the City of San Jose's information on owl use at the bufferlands and surveyed the site ourselves several times in Fall 2011. The recommendations we provide are designed to improve both foraging and nesting habitat for the owls as well as for California ground squirrels (*Spermophilus beecheyi*), a species the owls depend upon for quality habitat. Key management actions include:

1. Focus on specific Intensive Enhancement Areas for nesting and foraging, especially the former Arzino Ranch/3COM mitigation areas and areas along berms east of Zanker Road. Manage the remainder of the site for owl foraging.
2. Employ specific methods in Intensive enhancement areas" for squirrel nesting.
3. Employ specific methods in Intensive Enhancement Areas for owl nesting.
4. Employ specific methods to enhance habitat for owl (and squirrel) foraging in Intensive Enhancement areas" and the remainder of the site.
5. Reduce predation.

Status of the Western Burrowing Owl

The Western Burrowing Owl (*Athene cunicularia hypugaea*) is a common denizen of short open grasslands west of the Mississippi river, the southern provinces of Canada and northern Mexico (Haug, *et al.,* 1993). This small owl, about 9" tall, is typically migratory throughout much of its range, although many birds are resident year round in California. Burrowing owls are both diurnal and nocturnal with the peak of activity during crepuscular hours (dawn and dusk). They do not hoot as do most other species of owl and, unique among owls, they are the only species of owl worldwide that lives and nests underground. However, owls in our region do not dig normally their own burrows but depend heavily on California ground squirrels (*Spermophilus beecheyi*) to dig the burrows for them. The owls and squirrels do not live in the same burrow but do live in the same colony. Owls will use other "burrows" such as pipes, crevices in rocks or burrows dug by other animals.

Burrowing owls are prey to a wide range of species including hawks and larger owls, snakes, foxes, dogs and feral cats. Burrows provide protection year-round from predators, but owls also seek wide open grasslands with few trees that could act as predator perches. Short grass, 5 inches or less around owl burrows, is critical for owls to have a good view of approaching danger. Birds also use nearby perches to scan for danger.

When it comes to their diet, burrowing owls are both generalists and opportunistic, and will eat what is available on specific. They prey primarily upon large insects such as grasshoppers and beetles and small rodents like mice and gophers throughout their range (Haug, *et al.,* 1993) and in our region (Higgins and Trulio, in prep.). Numerous studies have confirmed the importance of rodents in the burrowing owl diet, especially with regards to reproductive success (York, *et al.*, 2001).

Burrowing owls produce one brood per year. In Santa Clara County, owls usually start to pair up in February and lay their eggs around March/April; chicks begin emerging in late May or early June. Young birds will remain with the adults until the fall, when they will molt and then begin to disperse. Young burrowing owls are reproductive by the following year. On average, burrowing owls live an estimated five years.

The western burrowing owl has experienced significant declines throughout much of its range (Sheffield 1997). In Canada, it is an endangered species and is state-listed as endangered in Minnesota. In the US, the burrowing owl is a national Bird of Conservation Concern (USFWS 2008) because of population declines, and thus receives some protection under the Federal Migratory Bird Treaty Act. In California, the bird is listed as a State Species of Special Concern, because of declining numbers and loss of habitat (CDFG 1995). This status and Department of Fish and Game codes, which safeguard birds of prey such as burrowing owls, provide burrowing owls and their nests legal protection. Major factors in the bird's decline are the significant decline in ground squirrel populations due to pest eradication (Haug, *et al.,* 1993) and direct habitat loss due to development (Trulio and Chromzak 2007). Lack of quality prey is another key factor that is resulting in low owl populations and reproductive success (Wellicome 1994, Haley 2002).

These factors are required to support burrowing owl survival and reproduction:

1. Short grass habitat (less than 5 inches) directly around burrows used by birds for nesting and non-nesting purposes.
2. Longer grass habitat with a structural heterogeneity, such as diverse short vegetation, in large open fields to provide habitat for burrowing owl prey, especially large insects and small rodents.
3. Conditions that support a healthy, large ground squirrel population.
4. Conditions that discourage predators including no trees or other tall perches for large birds of prey, little to no cover near burrows, and no cat colonies.
5. Low levels of human activity near burrows.

Study Area

The San Jose/Santa Clara Water Pollution Control Plant (WPCP) bufferlands are approximately 492 acres of open grasslands and wetlands. The wetlands, located primarily in the northwestern part of the site, are not suitable burrowing owl nesting habitat, but can be used for foraging. The size of the jurisdictional wetland is being determined under the WPCP Master Planning process. The vast majority of the site is open grasslands vegetated with non-native grasses and plants such as thistle (*Carduus spp.*). Such grasslands can be suitable owl nesting and foraging habitat, if managed for the birds.

For many years, the site was farmed, but perhaps 10-15 years ago, the City ended the farming leases; after that, the site was disced for a few years and then mowed to keep vegetation at approximately 12 inches or less (V. Ribbs, pers. comm.). For the past approximately 2 ½ years, the City has contracted with Living Systems Land Management to have the area grazed by sheep and goats. The animals are on site year round, but the number of animals varies from approximately 750-3000 animals; an estimated 1000 animals/100 acres are needed to keep vegetation low (V. Ribbs, pers. comm.). Animals are rotated around the site and typically sheep graze an area first and then goats are brought in to eat what remains. In 2011, much of the site was grazed to a very low level; but there were not enough animals for the entire site, and large areas to the west of Zanker Road grew unchecked, producing dense thistle stands 3-5 feet tall.

The former Arzino horse ranch (50.9 acres; H.T. Harvey, 2007) operated for many years at the west side of the bufferlands (Figure 1), but it was demolished by the City at the end of 2009 and the beginning of 2010, to prepare for land use changes to the bufferlands. Buildings and asphalt were removed, but graveled areas remained and the soil on the site of the ranch was probably compacted by the demolition equipment (V. Ribbs, pers. comm.).

Another important element of the bufferlands is the approximately 49.2-acre site (Figure 1) used as mitigation for development at the 3COM site, approximately 0.9 miles to the south of the site. As part of the mitigation, a number of artificial burrow complexes were installed and five pairs of owls were actively relocated from the 3COM property. The mitigation area was established in 1997 and was monitored for three years. It overlaps the Arzino Ranch site and extends northwest to the border of the bufferlands where it meets Zanker Road.

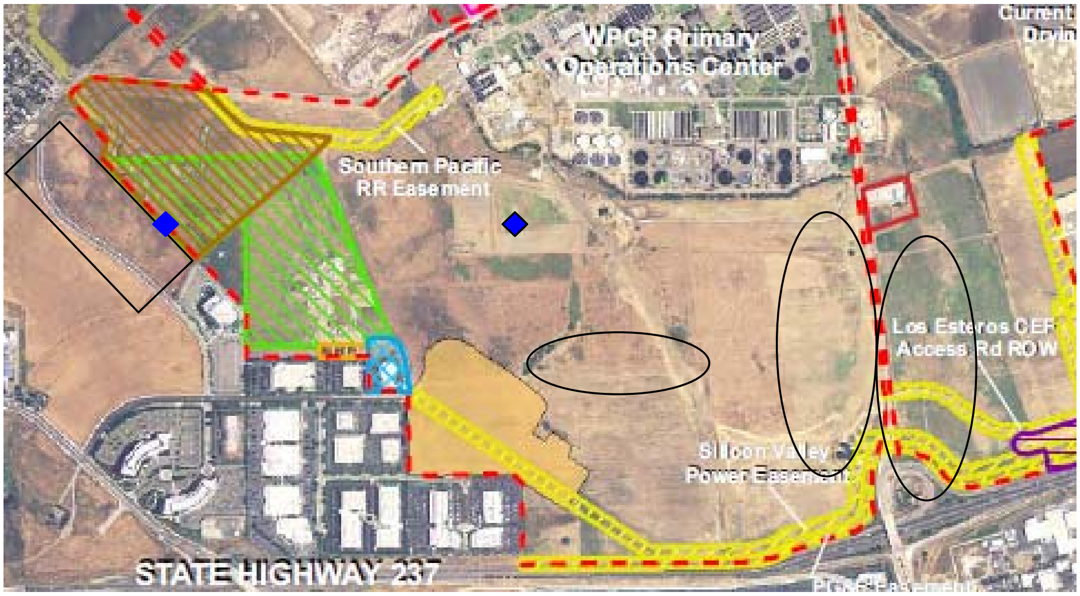


Figure 1. Study Site Features (WPCP=outlined with broken red line; 3COM Mitigation=brown hatched area; Arzino Horse Ranch=green hatched area; Cisco Mitigation=inside black box; Typical Owl Nesting Locations 2003-2007=black ovals; Active Owl Burrow Locations 2011=blue diamonds)

Another burrowing owl mitigation site, this one for a Cisco development, is just outside City property; it abuts the bufferlands on the south west edge (Figure 1). The Cisco mitigation site was established in 2000, with the creation of 0.77 acres of jurisdictional wetlands, specifically for Congdon's Tarplant (*Centromadia parryi spp. Congdonii*) and 21.4 acres of breeding burrowing owl habitat for at least one pair of burrowing owls. Twelve artificial burrows were installed and the site was monitored for five years with an annual report produced to evaluate the success of the site from 2000 - 2005. Burrowing owls were observed nesting at the site in 2003 and 2004 (one pair in total) and were observed foraging within and adjacent to the site over the entire five-year monitoring period. Although active monitoring is not conducted at the site for burrowing owls at present, the site is still managed for burrowing owls with mowing and more recently with cattle grazing. During years of sufficient rainfall the wetlands and the Congdon's Tarplant appears to do well at this site. However, during the rainy years that favor the Tarplant, burrowing owls do not use the site much due to ponding and soil saturation that reduces the suitability of the site for burrowing mammals and burrowing owls. During dry years the site is more suitable to burrowing owl use providing the vegetation is kept short (Zander Associates, 2006).

<u>Review Methods</u>

To determine past and current conditions and land management at the bufferlands, we reviewed documents provided by the City, talked to Ryan Mayfield (City Biologist at WPCP), Matt Krupp (City Planner), and Victoria Ribbs (Land Manager at WPCP). We conducted 4 field visits on August 25, September 8, September 10, and November 4. On September 10, we conducted a transect survey with 9 people, 6 of whom were volunteers from the Santa Clara Valley Audubon Society. This group surveyed the former Arzino horse ranch and 3COM mitigation areas for the presence of owls and active owl burrows; the group also counted squirrels, squirrel burrows, and artificial burrows.

<u>Findings</u>

Recent owl nesting. Records of owls using the bufferlands go back several decades. In their extensive Santa Clara County survey of locations occupied by burrowing owls in the 1980s, H.T. Harvey noted that adult owls were seen at N. First Street/Nortech Drive and at the Alviso Education Center in 1983 and 1986, respectively (H.T. Harvey, 1993). While they did not report any sightings from the bufferlands, given the presence of owls on adjacent lands, breeding birds were most likely present.

In 1996, there were two pairs of owls on the area that became the 3COM mitigation site and "two additional pairs on the SJSCWPCP lands north of Los Esteros Road" (H.T. Harvey, 1997); this may not have been a complete survey of the entire bufferlands. In 1997, five pairs of owls were relocated from the 3COM site to the 49.4-acre mitigation area at the WPCP. H.T. Harvey report that in late 2003 there were 15 active burrowing owl burrows on the mitigation site (H.T. Harvey, 2007). However, surveys conducted in May, September and October 2003 by the City of San Jose, found four active burrows along Zanker Road, and none in the 50-acre mitigation area.

Surveys by the City of San Jose each year, continued to show burrowing owl use of the bufferlands. In 2004, surveys showed four active owl burrows on the east and west sides of Zanker Road, and no owls in the northwest corner (Figure 1). Two to three locations were reported in 2005-2007, but no active burrows were found in 2009 and 2010. In 2011, three owls were observed in the summer using a burrow in an overflow basin (R. Mayfield, pers. comm.) and during our survey on September 10, we found two owls using a burrow at the 50-acre site(Figure 1; Appendix 1).

Current Habitat Conditions. Our observations of the bufferlands during September to November 2011, found the majority of bufferlands to be grazed to very low levels. Thousands of sheep and several hundred goats were on the site and in areas where they congregated, the area was denuded of vegetation and highly compacted. The droppings from the grazing animals were dense in these areas and along travel routes such as berms. In September 2011, an area of many acres west of Zanker Road was dominated by thistles approximately five feet tall; however, by early November, most of these thistles had been reduced significantly in height. Overall, these vegetation and soil conditions are not conducive to supporting ground squirrels and burrowing owls. While some areas of very short vegetation near burrows are essential, the lack of cover over much of the site means that there is very little in the way of owl prey or forage for ground squirrels. We saw only one jack rabbit on our surveys, also pointing to the lack of cover vegetation, which is required for this common grassland animal.

We found very few ground squirrels in our survey of the Arzino Ranch/3COM site. Nearly all squirrel burrows were on berms in the field and were located on the half of the site closest to the Jubilee/Cisco fence. Berms are composed of relatively soft soil and are elevated above possible flooding, features that make them very attractive to ground squirrels.

On our September 10 survey, we located eight artificial burrows complexes, most likely installed in 1996-1997, and found a number of the burrows were in a state of disrepair. Also, some of the artificial burrows are located within the seasonal wetland and most likely flood during the rainy season making them less likely to be used by burrowing owls at the start of the breeding season. Ideally, these artificially burrows should have been placed in berms to prevent water logging during years of high precipitation and to avoid the seasonal wetlands.

Throughout the bufferlands, soils were well compacted and not attractive to burrowing animals. We also found almost no pocket gopher activity, except in the field on the east size of Zanker adjacent to the berm near the fence along the road. Gophers are an important prey item for burrowing owls and their absence indicates poor foraging for the birds. Gophers prefer friable soils where they can burrow extensively. Lack of vegetative structure and hard soils will limit their distribution (Jones and Baxter 2004).

Recommendations for Interim Management

Based on our observations of the site, we recommend the City undertake the following list of action items to improve owl nesting and foraging habitat for the 2012 nesting season:

1. *Intensive Enhancement Areas for Nesting/Foraging* (Areas A, B, and C in Figure 2)
    a. The former Arzino Ranch and 3COM mitigation areas should be the first Intensive Enhancement Area. Focus on area nearest Cisco mitigation where burrowing owls and their burrows were found this year, and move out into the bufferlands (Area A in Figure 2). This area has a relatively good population of squirrels, and has no overhead lines or power towers to attract aerial predators.
    b. Do not conduct enhancement activities in jurisdictional wetlands, unless the City has conferred with the Army Corps of Engineers (blue areas in Figure 2).
    c. Enhance areas where owls were found within the last 10 years along existing berms (Areas B and C in Figure 2).
    d. Manage areas outside the Intensive Enhancement Areas (blocks in Figure 2) for owl and squirrel foraging. See Recommendation 4, below.

2. *Methods for Enhancing Nesting Habitat for Squirrels in Intensive Enhancement Areas*. Throughout most of the site, the number of squirrels is very low and needs to be increased. There are, however, a few areas of high squirrel density, typically found on berms. Enhance habitat for squirrel nesting, especially in areas A, B and C (Figure 2), by expanding out from dense squirrel areas. Enhance by:
    a. Bringing in soil and building dirt mounds and berms for squirrels and gophers to colonize. Conduct work only between September and February, unless supervised by an owl biologist.

b. Capturing ground squirrels from other areas (such as inside the WPCP plant, where they are abundant) and bringing them to the bufferlands to supplement the squirrel population. Conduct only between October and March.

c. Installing artifical burrows identical to those used by burrowing owls to speed up the recolonization of ground squirrels to new areas. These artificial burrows will benefit both the ground squirrels and burrowing owls. Conduct work any time of the year, but especially before February 1, preceding the nesting season.

3. *Methods for Enhancing Owl Nesting Habitat* (Areas A, B, and C in Figure 2). Much of the site is inhospitable to nesting owls. In the Intensive Enhancement Areas, attract nesting owls using these methods:

   a. Keep vegetation to 5 inches or less while avoiding soil and burrow impacts. Managing vegetation to attract and keep owls is one of the most important and challenging aspects of maintaining owl habitat. Vegetation near burrows must be keep to 5 inches or less, especially during the breeding season. Mowing or moderate grazing by animals are preferred methods to keep vegetation low. But, the timing and intensity of vegetation cutting is crucial to the success of this management method. Methods for vegetation control must not result in denuding vegetation, damage to owl burrows or severe soil compaction. Currently, the intensity of sheep in the Arzino Ranch and 3COM area, as well as throughout the site, is causing all three of these problems.

   Timing. There are three time periods when short vegetation is important in burrowing owl nesting areas:

   1. Late January to early February when burrowing owls are choosing natal burrows for the breeding season,
   2. Mid-May when chicks are first emerging from the nests, and
   3. Mid-June to early July when chicks are dispersing and possibly choosing burrows of their own if they remain in the same area.

   Vegetation near burrows must be kept to 5 inches or less at this time of year otherwise owls may abandon burrows or birds may fall prey to predators. The best timing for reducing vegetation height will depend on weather conditions which vary yearly; thus flexibility will be required with this schedule.

Mowing. Mowing is a very common and popular method to reduce vegetation height. Vegetation around nests must be low for a distance of at least 25 feet around nesting burrows to provide an unobstructed view for the birds. If mowing occurs at the three times of the year listed above, it can be very effective. However, weather or the mower's other contracts often result in missing this schedule, which can result in few to no nesting owls. The City must be willing to work with a mowing company to ensure that the mowing occurs in a timely manner.

Animals. Animals, especially sheep and goats, have become increasingly popular as a way to keep vegetation low. Indeed, sheep and goats are currently used at the bufferlands. However, if grazing is too intense, areas can be denuded and soils compacted—both of which can cause the loss of owls.

Grazing intensity and dietary preferences of herbivores profoundly impact burrowing owls by trampling burrows and reducing the availability of prey species. Grazing intensity results from three main factors: the stocking rate (head of livestock/acre), how long the livestock is confined to a particular area, and how frequent the livestock are permitted to graze in a particular area. The intensity of grazing and dietary preferences of herbivores must be carefully matched to site conditions to avoid impacting burrowing owls and/or their prey species. For example, cattle eat predominantly grasses. They are less tolerant of secondary plant compounds compared to goats and sheep and they graze more uniformly than sheep and goats. Sheep prefer forbs over grasses, are tolerant of secondary plant compounds, and do not graze uniformly. Goats prefer woody plants to forbs and are the most tolerant of secondary compounds compared to sheep and cattle; they do not graze uniformly. Which of these species is used will depend on the management goals, the vegetation present, and the height of the vegetation.

At present goats and sheep are used at the site and the grazing intensity in nesting areas and over most of the site is too great to support burrowing owls. Grazing pressure can be managed to benefit both Intensive Enhancement Areas where vegetation should be short and the rest of the site where vegetation should be longer to provide food for ground squirrels and owls. If sheep and goats are used to keep vegetation low in the Intensive Enhancement Areas, the number of animals and timing must be reduced from current levels to reduce soil compaction and stop the striping of all vegetation. City staff will need to work with owl experts and the livestock owners to determine the optimum stocking levels and times.

b. Repair artificial burrows and install new ones to attract owls. For new artificial burrows, it is recommended to use a Carson 12IN irrigation box with lid for the nesting chamber and an eight foot length of six inch diameter flex-drain solid pipe that has had a three inch section removed from the entire length of the eight foot length so owls will walk on solid ground and not pipe as they enter and exit the artificial burrow (Figure 3-TBA). Conduct between September and February 1, outside the breeding season.

c. Place fences around artificial burrow and squirrel complexes to determine if this measure promotes owl nesting. Conduct any time of the year.

d. Place small wooden perches, under four foot tall, close to owl burrows to provide a view of predators and prey. Install any time of the year.

e. Have volunteers maintain owl habitat within fences and monitor for owl use. Monitoring between February and September is most important.

4. *Methods for Enhancing Habitat for Foraging Owls (and Squirrels)*. Burrowing owl prey and ground squirrels forage on green vegetation and seeds and need long vegetation, diverse plants and refugia. To meet these needs:

   a. Plant low growing native species near squirrel berms/mounds, especially in the Intensive Enhancement Areas, to provide additional forage and cover. Planting should occur at the beginning of the rainy season, for best survival results. Some recommended plants include:

Artemisia californica
Atriplex lentiformis ssp. Breweri
Baccharis pilularis 'Pigeon Point'
Berberis aquifolium 'Compacta'
Ceanothus 'Yankee Point'
Eriogonum cinereum
Eriogonum fasiculatum
Eriogonum giganteum
Mimulus aurantiacus
Rhamnus californica
Salvia leucophylla
Salvia mellifera 'Tera Seca'
Rosa californica

b. Irrigate some areas in the Intensive Enhancement Areas to provide habitat and forage for owl prey, especially for gophers. There are existing spray heads/water sources that can be used for this purpose. Irrigation would be needed only after rains end and only about once per week.

c. Outside the Intensive Enhancement Areas (Long Grass Management blocks in Figure 2), leave acres longer grass to support a range of owl prey species and provide food for ground squirrels. In these areas mow or graze only lightly, if at all. Although short vegetation is essential in prime burrowing owl nesting areas, habitat heterogeneity is essential in areas outside of burrowing owl nesting areas to support prey species. Burrowing owl reproductive success is improved if the birds have abundant rodents in their diets (Wellicome 1994, York, Rosenberg and Sturm 2001, Haley 2002) and unmowed habitats support a higher density of small mammals (Adams 1984, Jones, et al. 2003). This point is discussed more fully in 3a, above.

d. Rip soil and enhance compacted areas with soil or other appropriate amendment to make soil easier for ground squirrels and gophers to colonize, and to allow a diversity of native and beneficial plants for squirrels and owl prey. Biosolids from the WPCP may be an appropriate amendment.

e. Create refugia for burrowing owl prey (insects and small rodents), throughout the bufferlands, of piled up wood, pipes, and/or rocks and mulched areas as follows:

- *Rock Piles* – Place large rocks at the base of the pile and place smaller rocks on top to form a pile 4-5 feet tall. Ensure openings and hollows are created in between rocks that will benefit rodents, reptiles and amphibians
- *Brush Piles* – Use large tree limbs or small tree trunks at the base of the brush pile and place smaller branches on top to form a pile 4-5 feet tall. Pipes of various diameters and lengths can be placed under the brush pile to provide additional refugia for prey species. Brush piles are especially attractive to small birds, rodents and amphibians.
- *Mulch* – place small piles of organic mulch up to 6 inches deep scattered around the area, this will provide an ideal microhabitat for numerous invertebrates such as earwigs, beetles, spiders and pillbugs. Conduct this work at any time of the year.

f. Monitor prey before and after measures are implemented. This method will allow managers to understand the effect their actions are having on creating a strong prey base for the owls.

5. *Reduce Predation*.
   a. Install anti-perching devises on lights to prevent perching by predators.
   b. Monitor owl nests with cameras to assess predator impacts or other problems and also monitor reproductive success.

Tiering of Action Items

Table 1, below, summarizes these recommended activities. This table organizes these items into tiers based on which should be done first, second and third during the coming year. Table 2 shows a 2012 timeline of when to implement the recommended actions.

Tier 1 items should be implemented in Area A as soon as possible, ideally before birds begin to lay eggs in March. Implement vegetation management in Areas B and C also, but undertake other actions as resources permit, throughout the year. Tier 1 actions include placing mounds of dirt for squirrels to dig into, installing artificial burrows for squirrels and owls, installing short perches near artificial and natural burrows for owls to use a perches, installing prey refugia, and ensuring vegetation in Areas A, B, and C is under 5 inches while leaving longer vegetation throughout the site (large blocks in Figure 2). These last two actions, dealing with vegetation heights, must be achieved without other impacts such as denuding vegetation, soil compaction, or significant burrow destruction. Ensuring vegetation is the proper height, both in the Intensive Enhancement Areas and in the long grass areas, will require the City to either rework its current contract with the livestock managers or develop a new one with a mower. Either way, a qualified owl biologist should be present to assist with the contract details. Installing fencing around burrowing owl nesting burrows to protect birds from prey or vegetation management impacts should be conducted only under the direction of the qualified owl biologist. Another key action is installing prey refugia in long grass and nesting areas. Prey refugia structures are easily installed using discarded wood, rocks, and pipes from the City corporation yard or from other sources in the City. A qualified owl biologist will assist with the placement of these structures and volunteers can easily be involved in this task.

Tier 2 items should be implemented according to the timing given. It is important that ripping soil and amending it occurs before ground squirrels are imported to ensure that squirrels are not harmed by the land disturbances. Also, areas to be ripped must be surveyed first by a qualified owl biologist to ensure burrowing owls are not present in the area to be disturbed.

Some Tier 3 actions should occur in the later part of the year, especially planting low-growing native plants in Intensive Enhancement Areas and the longer grass areas. Monitoring, which should occur as indicated in Table 1, can be undertaken with volunteers, under the direction of a qualified burrowing owl biologist.

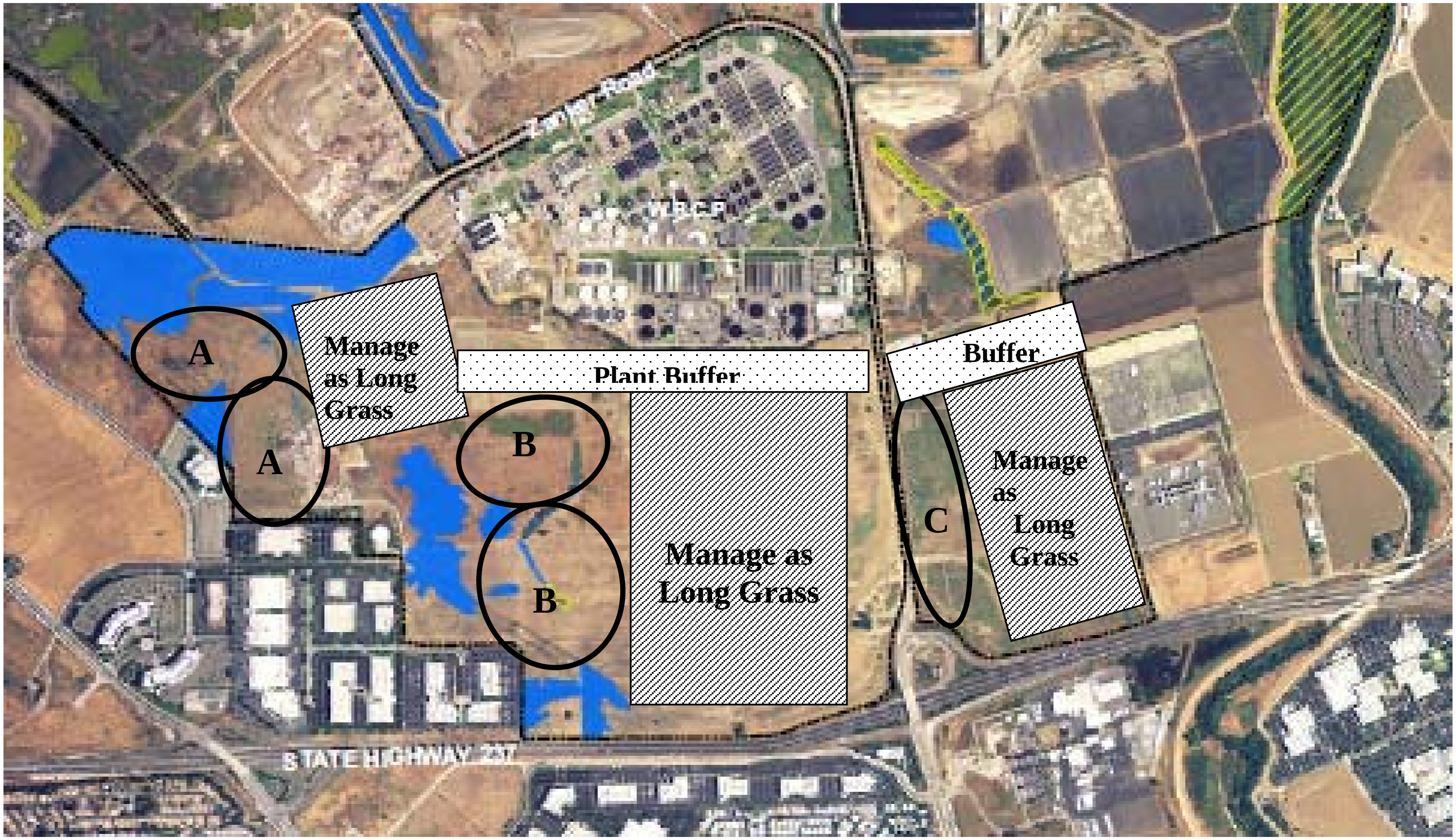


Figure 2. **Burrowing Owl Nesting and Foraging Habitat Management Areas. Plant Buffer Areas (dotted zones) are not managed for owls. Blue areas are jurisdictional wetlands.** [Map from H.T. Harvey (2007) Figure 9 showing Wetland Delineation]

Table 1. Summary of Interim Management Recommendation Actions by Timing Tier

Tier 1 Actions

Action	Description	When	Who
2a. Build Mounds and Berms	Bring in soil and build dirt mounds and berms for squirrels and gophers to colonize	September to February	City and qualified biologist
2c and 3b. Build Artificial Burrows	Build artificial burrows attractive to squirrels and owls	September to February	City, Qualified biologist, and volunteers
3a. Keep Vegetation to 5 inches or less	Using mowing or animals reduce vegetation height in Intensive Enhancement Areas, especially around owl nests and artificial burrows	1. Late January to early February 2. Mid-May 3. Mid-June to early July	City, contract mower or livestock manager and qualified biologist
3c. Install Fences to Protect Nests	Install fences around key nest sites to block terrestrial predators	Mostly February to September	City and Qualified Biologist
3d. Install Short Perches	Place perches 4 feet tall or less near active burrows.	Any time of year	Qualified biologist
4c. Leave Acres of Longer Vegetation	Outside the Intensive Enhancement Areas, leave vegetation long to provide good quality habitat for owl prey.	Spring, Summer and Fall	City, contract mower or livestock manager and qualified biologist
4e. Create Prey Refugia	Throughout the bufferlands, create prey habitat using piled up wood, pipes, and/or rocks	Any time of year	City, qualified biologist, volunteers

Tier 2 Actions

Action	Description	When	Who
2b. Import Ground Squirrels	Capture ground squirrels in high population areas and release them in Intensive Enhancement Areas (IEAs)	October to March	City and qualified biologist; work with CDFG
3e and 5a. Install Anti-predator Devices	Install anti-predator perching devises on light posts and other tall perches near nesting habitat	Any time of year	Qualified biologist
4b. Irrigate Patches	Irrigate areas in the Intensive Enhancement Areas to support owl prey, especially gophers	Summer and Fall, once per week	City
4d. Rip and enhance compacted soil	In compacted areas, such as in the former Arzino Ranch area and agriculture, rip the soil with a discer and add soil or other material	Any time of year, but dry season is best	City

Tier 3 Actions

Action	Description	When	Who
4a. Plant Native Species	Plant low growing native species in Intensive Enhancement Areas to provide food for ground squirrels and owl prey	November or so, at the beginning of the rainy season	Qualified biologist and volunteers
4f. Monitor Prey	Monitor prey to assess effectiveness of management	Depends on species	Qualified biologist, volunteers
5b. Monitor Owls	Monitor owls to determine if predators are affecting nests and collect data on chicks	March to August	Qualified biologist

Table 2. 2012 Timeline for Implementing Recommended Actions

Location	*Action*	*Jan*	*Feb*	*Mar*	*April*	*May*	*June*	*July*	*Aug*	*Sept*	*Oct*	*Nov*	*Dec*
Tier 1													
Area A	2a: Mounds & Berms	C	C	C	C	C	C	C					
	2c & 3b: Burrows	C, B, V	C, B, V	B, V	B, V	B, V	B, V	B, V					
	3a: Vegetation at 5" or less	C	C	C, B, V	C, B, V	C, B, V	C, B, V	C					
	3d: Perches		V	V	V	V	V						
	4d: Prey refugia			C, B, V	C, B, V	C, B, V	C, B, V	B, V	B, V	V	V	V	V
Areas B & C	2a: Mounds & Berms				C	C	C	C	C	C	C	C	C
	3a: Vegetation at 5" or less	C	C	C	C	C	C	C					
Longer Grass Areas	4c: Vegetation kept longer than 5"	C	C	C	C	C	C	C					
	4d: Prey refugia			C, B, V	C, B, V	C, B, V	C, B, V	B, V	B, V	V	V	V	V
Tier 2													
All Areas	2b. Ground Squirrels								C, B	C, B	C, B	C, B	C, B
	3e and 5a. Anti-predator Devices				C	C	B	B	B	B	B		
	4b. Irrigate Patches					C	C	C	C	C	C		
	4d. Rip and enhance compacted soil					C	C	C	C	C	C	C	C
Tier 3													
All Areas	4a. Plant Native Species								C, B	C, B	B, V	B, V	B, V
	4f. Monitor Prey						B, V	B, V	B, V	B, V	B, V	B, V	B, V
	5b. Monitor Owls			B, V	B, V	B, V	B, V	B, V	B, V	B, V	B, V	B, V	B, V

C = City involvement; B = Burrowing Owl Biologist involvement; V = Volunteer involvement

Citations

Adams, Lowell W. 1984. Small Mammal Use of an Interstate Highway Median Strip. *Journal of Applied Ecology* 21:175-178.

Bolger, Douglas T., Allison C. Alberts, Raymond M. Sauvajot, Paula Potenza, Catherine McCalvin, Dung Tran, Sabrina Mazzoni, and Michael E. Soule. 1997. Response of Rodents to Habitat Fragmentation in Coastal Southern California. *Ecological Applications* 7:552-563.

College Development. EIR Supplement, Mercado Santa Clara and Mission College Office Development, Appendix B: Technical Reports. For Mindigo & Associates. San Jose, California.

H.T. Harvey. 1993. Environmental Impact Report on the Burrowing Owl, Interland-Mission

H.T. Harvey. 1997. 3COM North Burrowing Owl Active Relocation and Mitigation Plan.

H.T. Harvey. 2007. San Jose/Santa Clara Water Pollution Control Plant /Pond A18 Master Planning, Plant Lands Opportunities and Constraints Document. Prepared for the City of San Jose, Department of Environmental Services. San Jose, CA.

Haley, Katherin L. 2002. The Role of Food Limitation and Predation on Reproductive Success of Burrowing Owls in Southern California. Master's Thesis. Oregon State University.

Haug, E.A., B. A. Millsap, and M. S. Martell. 1993. *Burrowing Owl (Speotyto cunicularia).* The Birds of North America, No. 61 The American Ornithologists' Union Washington, D.C., USA, and the Academy of Natural Sciences, Philadelphia, Pennsylvania, USA.

Higgins, Philip G. and Lynne A. Trulio. The Diet of Western Burrowing Owls in an Urban Landscape. In Preparation.

Jones, Cheri A. and Colleen N. Baxter. 2004. *Thomomys bottae.* Mammalian Species. *The American Society of Mammalogists* 742:1-14.

Jones, Zach F., Carl E. Bock and Jane H. Bock. 2003. Rodent Communities in a Grazed and Ungrazed Arizona Grassland, and a Model of Habitat Relationships Among Rodents in Southwestern Grass/Shrublands. *American Midland Naturalist* 149:384-394. Prepared for the California Department of Fish and Game. Yountville, CA.

Sheffield, Steven R. 1997. *Current Status, Distribution, and Conservation of the Burrowing Owl (Speotyto cunicularia) in Midwestern and Western North America. Biology and conservation of owls of the northern hemisphere:2nd international symposium*; 1997

February 5-9; Winnipeg, Manitoba. Gen. Tech. Rep. NC-190. St. Paul, MN: U.S. Department of Agriculture.

Trulio, L.A. and D.A. Chromczak. 2007. Burrowing owl nesting success at urban and parkland sites in northern California. Bird Populations Monographs 1:115-122.

U.S. Fish & Wildlife Service. Managing Invasive Plants: Concepts, Principles and Practices. Staff Training Module. Taken from the World Wide Web 11/5/2011. http://www.fws.gov/invasives/staffTraining Module/methods/grazing/practice.html

Wellicome, T.I. 1994. Is Reproduction in Burrowing Owls limited by food supply? *Picoides* 7: 9-10.

York, Melissa M., Daniel K. Rosenberg, and Ken K. Sturm. 2001. Diet and Food-Niche Breadth of Burrowing Owls (Athene cunicularia) in the Imperial Valley, California. *Western North American Naturalist* 62: 280-287.

Zander Associates. 2006. 2005 Mitigation Monitoring Report. Cisco Site 6, Alviso, California.

Appendix 1. City of San Jose Bufferlands Survey Report

City of San Jose Bufferlands Survey Report: Arzino Horse Ranch/3COM Areas
Sept 10, 2011—8:30-11:30am

Participants: Clysta Seney, Ada Marquez, Linda Ruthruff, Kitty Trejo, Eric Rosenberg, David Cook, Annette Herz, Phil Higgins, Lynne Trulio

Events:
8:30-9:30 – Safety talk from Matt Krupp at main building; drive to end of Nortech
9:30-11:30 – Survey approximately 56 acres, starting by going northwest along the Jubilee/Cisco fence-line, then coming back along the railroad track edge.

Counts:
Total Squirrel Burrows: 222
Artificial Burrow Complexes: 8
Squirrels Seen: 25

Observations:

- This morning, Eric saw two burrowing owls where road to Alviso Ed Center separates from Zanker.
- Yesterday, Kitty and others saw a burrowing owl on the fence between the horse ranch area and Cisco.
- We found fresh owl sign at two artificial burrow complexes near the Cisco fence (including 5 pellets at one complex and a single pellet at another complex); we saw two birds on the other side of the fence from this complex during our survey. One owl eventually flew to a berm within the bufferlands site.
- Several of the artificial burrows were in a state of disrepair, with the covers from the nest chambers removed and broken. Some of the artificial burrows are located within the seasonal wetland area and more then likely are flooded during the rainy season and thus are less likely to be used by burrowing owls at the start of the breeding season.
- Found a dying sheep in the grassland.
- The vast majority of squirrel burrows were on berms in the field and were on the half of the site closest to the Jubilee/Cisco fence. There were almost no berms or squirrel burrows on the other half of the site.
- The vegetation in the northern portion of the site is typical salt marsh species (pickle weed, alkaline heath and salt grass) indicating that this area is possibly flooded seasonally, and thus is not prime habitat for ground squirrels or burrowing owls during years of heavy rains.
- No pocket gopher mounds observed within the bufferlands site, possibly because the ground is very compacted and not conducive for gopher activity.
- One jack rabbit observed in an area of dense non-native vegetation, indicating that the lack of cover is not suitable for some species possibly because of over-grazing. Rodents, a high nutritional food source of burrowing owls also require areas of vegetation cover for refugia and a source of food.

APPENDIX K

Secondary Effects of Growth

Summary of Secondary Effects of Growth

Table K-1 summarizes the secondary effects of growth in the San Jose/Santa Clara Water Pollution Control Plant service area. The information presented in Table K-1 is derived from the following environmental documents:

City of Campbell, *Environmental Impact Report, Campbell Draft General Plan* (July 26, 2011) and *Responses to Comments Addendum: Final Environmental Impact Report, Campbell Draft General Plan*, SCH#2001042063, September 2001.

City of Cupertino, *Draft Environmental Impact Report of the Task Force General Plan of the City of Cupertino*, SCH # 2002122061, January 2005; *Supplemental Environmental Analysis for the Final Environmental Impact Report of the General Plan*, November 15, 2005, and General Plan 2005 Mitigation Monitoring and Reporting Program, November 15, 2005.

City of Milpitas, *Draft Environmental Impact Report* (October 2001) and *Final Environmental Impact Report for the Midtown Milpitas Specific Plan*, State Clearinghouse #2000092027, January 2002a, and Resolution No. 7150: A Resolution of the City Council of the City of Milpitas Certifying an Environmental Impact Report for the Milpitas Midtown General Plan Amendment and Specific Plan Project and Adopting Related Mitigation Findings, Findings Regarding Alternatives, A Statement of Overriding Considerations and a Mitigation Monitoring and Reporting Plan Pursuant to the California Environmental Quality Act, March 19, 2002b.

City of San José, *Envision San José 2040 General Plan Program Environmental Impact Report*, June 2011.

City of Santa Clara, *City of Santa Clara 2010-2035 General Plan Environmental Impact Report*, November 16, 2010.

Town of Los Gatos, *Town of Los Gatos 2020 General Plan Final Environmental Impact Report*, June 16, 2010, and *Town of Los Gatos 2020 General Plan Environmental Impact Report: Draft*, March 10, 2010.

County of Santa Clara, *Santa Clara County General Plan Draft Environmental Report* (September1994); *Final Environmental Impact Report Addendum*, State Clearinghouse #94023004, November 1994a; and Resolution of the Board of Supervisors of the County of Santa Clara Recommending Certification of Final Impact Report, Adopting Related Overriding Considerations and Monitoring Program, and Adoption of the County General Plan, December 20, 1994b.

The Cities of Monte Sereno and Saratoga prepared negative declarations for their most recent general plans or general plan element updates and therefore are not represented in Table L-1.

TABLE K-1
POTENTIALLY SIGNIFICANT (PS), SIGNIFICANT MITIGABLE (S), AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED IN GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

	City of Campbell[a]	City of Cupertino[b]	Town of Los Gatos[c]	City of Milpitas[d]	City of San Jose[e]	City of Santa Clara[f]	Santa Clara County[g]
2010 Census Population	39,349	58,302	29,413	66,790	945,942	116,468	89,960[i]
AESTHETICS							
Impacts							
• Alteration of visual setting or degradation of existing views		PS					
• Impacts on scenic resources, including resources within a scenic highway corridor		PS					
• Impact on scenic vistas due to conversion of rural land to urban uses		PS			U		
Mitigation Measures							
• Develop, strengthen, and/or implement design and landscaping standards and conduct project-specific design review.		X					
• Implement general plan programs and policies that address visual quality in the planning area. (Such policies and measures may include site planning/design procedures and standards, architectural review, and standards pertaining to landscaping and natural areas.)		X			X		
• Concentrate urban building in certain planning areas.		X					
AGRICULTURAL RESOURCES							
Impacts							
• Conversion of agricultural land to nonagricultural uses			U				S
• Cumulative loss of agricultural land							U
• Conflicts between agricultural uses and adjacent land uses							S
• Impacts of continued grazing and farming on soil or other environmental resources							S
Mitigation Measures							
• Prepare a cumulative impact analysis of projected losses due to the permanent conversion of south county agricultural lands.							X
• Evaluate and adopt mechanisms (e.g., impact fees, conservation easements, and purchase of development rights) to offset impacts on prime agricultural lands.							X

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TABLE K-1 (Continued)
POTENTIALLY SIGNIFICANT (PS), SIGNIFICANT MITIGABLE (S), AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED IN GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

	City of Campbell[a]	City of Cupertino[b]	Town of Los Gatos[c]	City of Milpitas[d]	City of San Jose[e]	City of Santa Clara[f]	Santa Clara County[g]
AGRICULTURAL RESOURCES (cont.)							
Mitigation Measures (cont.)							
• Implement recommendations of a study on the development of golf courses in areas zoned for agriculture to reduce impacts.							X
• Implement general plan programs and policies, and measures identified in the general plan EIR, to protect agricultural and prevent its conversion to non-agricultural uses.							X
AIR QUALITY							
Impacts							
• Conflicts with, or obstruction of, the implementation of an applicable air quality attainment plan or congestion management plan					U		
• Violation of a stationary source air quality standard or contribution to an existing or projected air quality violation			U				
• Increases in air emissions and/or ozone precursors		PS		U	U		
• Exposure of new sensitive land uses to toxic air contaminant						S	
• Exposure of new sensitive land uses to local odor emission sources						S	
• Periodic construction-related air quality impacts		PS					
• Cumulative impacts on regional air quality in the Bay Area				U			
Mitigation Measures							
• Provide site features and implement measures to encourage use of alternative modes of travel (to single-passenger vehicles) and reduce vehicle trips. (Such measures include implementing improvements to bicycle and pedestrian circulation systems and working with local and regional planning and transportation agencies to improve public transit services.)		X		X	X		
• Implement general plan measures that reduce dependence on automobile use and improve the efficiency of the existing transportation system.					X		

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TABLE K-1 (Continued)
POTENTIALLY SIGNIFICANT (PS), SIGNIFICANT MITIGABLE (S), AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED IN GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

	City of Campbell[a]	City of Cupertino[b]	Town of Los Gatos[c]	City of Milpitas[d]	City of San Jose[e]	City of Santa Clara[f]	Santa Clara County[g]
AIR QUALITY (cont.)							
Mitigation Measures (cont.)							
• Require adequate buffers, ventilation systems, and other measures to reduce impacts of odors or toxic emissions.		X				X	
• Implement general plan natural resource chapter policies regarding air quality impacts.					X		
• Facilitate mixed-use development and maintain jobs/housing balance.					X		
• Implement general plan transportation control measures to reduce vehicle miles traveled and associated air pollutant emissions.			X		X		
• Implement a Community Risk Reduction Plan to address Toxic Air Contaminants consistent with the BAAQMD.						X	
• Minimize the air quality impacts of new and existing development.		X					
• Screen development to ensure sensitive uses are not located near sources of air pollution.		X					
BIOLOGICAL RESOURCES							
Impacts							
• Impact(s) on/loss of special-status animal or plant species				S		S	
• Impacts on biological resources due to individual or cumulative impacts on wetlands, riparian habitat, or other sensitive habitat							U
• Disruption of wildlife migration or travel corridors		PS					
• Emission of nitrogen compounds that could affect the species composition and viability of serpentine grasslands, as a consequence of development under the general plan and cumulative development					U		
• Impacts on wildlife and vegetation due to development of hillside areas		PS					
Mitigation Measures							
• Plant native species for revegetation and landscaping purposes.		X					
• Implement general plan policies and programs to protect biological resources.					X		

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TABLE K-1 (Continued)
POTENTIALLY SIGNIFICANT (PS), SIGNIFICANT MITIGABLE (S), AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED IN GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

	City of Campbell[a]	City of Cupertino[b]	Town of Los Gatos[c]	City of Milpitas[d]	City of San Jose[e]	City of Santa Clara[f]	Santa Clara County[g]
BIOLOGICAL RESOURCES (cont.)							
Mitigation Measures (cont.)							
• Conduct project-specific environmental review and implement mitigation.						X	
• Require project-specific surveys conducted by qualified professionals according to established protocols to determine on-site resources and appropriate site-specific mitigation measures.				X		X	
• Provide open space linkages within and between properties.		X					
• Develop a program to educate the public and landowners about sensitive biotic resources in the area and best management practices for preserving those resources.							X
• Implement general plan transportation control measures to reduce vehicle miles traveled and associated nitrous oxide emissions.					X		
• Participate in the Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan.					X		
• Develop and implement a program for the preservation of serpentine grasslands, as City resources allow.					X		
• Encourage clustering of new development away from sensitive areas and preservation of natural vegetation and landscape features.		X					
CULTURAL RESOURCES							
Impacts							
• Disturbance of historical resource(s)		PS		S			
• Disturbance of archaeological resource(s)		PS					
• Disturbance of paleontological resource(s)		PS					
• Cumulative impacts on historical resources							U
Mitigation Measures							
• Conduct project-specific review and implement identified mitigation consistent with general plan cultural resource policies.				X			

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TABLE K-1 (Continued)
POTENTIALLY SIGNIFICANT (PS), SIGNIFICANT MITIGABLE (S), AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED IN GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

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CULTURAL RESOURCES (cont.)							
Mitigation Measures (cont.)							
• Conduct the proposed work consistent with the state and federal standards for historic resources.				X			
• Implement CEQA Guidelines Section 15064.5 provisions for the accidentally discovery of historic or archeological resources.				X			
• Support the preservation of historic buildings and structures.		X		X			
• Implement measures to protect historic, archaeological, and paleontological resources.		X					
GEOLOGY AND SOILS							
Impacts							
• Exposure to hazards from strong seismic ground shaking	U	PS					U
• Exposure of the public to hazards associated with unreinforced masonry structures	S						
Mitigation Measures							
• Implement general plan policies and programs to mitigate potential geologic and seismic hazards.	X	X					
• Adopt and enforce the most recent state seismic requirements and applicable standards for structural design of new development and redevelopment (e.g., the Uniform Building Code and California Building Code).	X						
• Continue programs to educate residents about seismic hazards.		X					
• Implement County plans and policies to reduce impacts; however substantial property damage and loss of life could occur in a major earthquake.							X
GREENHOUSE GAS EMISSIONS & CLIMATE CHANGE							
Impacts							
• Projected 2035 GHG emissions will exceed the average carbon-efficiency standard necessary to maintain a trajectory to meet statewide 2050 goals as established by Executive Order S-3-05.					U	U	

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POTENTIALLY SIGNIFICANT (PS), SIGNIFICANT MITIGABLE (S), AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED IN GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

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GREENHOUSE GAS EMISSIONS & CLIMATE CHANGE (cont.)							
Impacts (cont.)							
• Projected 2020 GHG emissions would constitute a cumulatively considerable contribution to global climate change by exceeding the average carbon-efficiency standard necessary to meet statewide 2020 goals established by AB 32			U			S	
• Exposure to significant adverse physical impacts from the effects of global climate change hazards.			U				
Mitigation Measures							
• Implement the Greenhouse Gas Reduction Strategy included in the general plan					X		
• Participate in the development of a Sustainable Community Strategy in compliance with SB 375 – Redesigning Communities to Reduce Greenhouse Gases					X		
• Prepare and implement a comprehensive Climate Action Plan to achieve a fair share of statewide GHG emission reductions consistent with AB 32			X			X	
• Prepare and implement a climate change preparedness analysis to address adaptation to climate change			X				
• Implement general plan policies to reduce GHG emissions						X	
HAZARDS AND HAZARDOUS MATERIALS							
Impacts							
• Release of or exposure to hazardous materials		PS					
• Exposure to soil and/or groundwater contamination	S			S			
• Increased exposure to fire hazard in urban and rural areas		PS					
Mitigation Measures							
• Implement general plan programs and policies that address public safety hazards in the planning area.		X					
• Conduct project-specific environmental review and implement identified measures to mitigate identified potential hazards.	X	X		X			

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TABLE K-1 (Continued)
POTENTIALLY SIGNIFICANT (PS), SIGNIFICANT MITIGABLE (S), AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED IN GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

	City of Campbell[a]	City of Cupertino[b]	Town of Los Gatos[c]	City of Milpitas[d]	City of San Jose[e]	City of Santa Clara[f]	Santa Clara County[g]
HAZARDS AND HAZARDOUS MATERIALS (cont.)							
Mitigation Measures (cont.)							
• Prior to development of or in proximity to a reported hazardous material site, implement specified measures, including appropriate site assessment, remediation, and follow-up investigation.	X			X			
• Implement fuel management to reduce fire hazards		X					
• Coordinate with the fire department to develop fire protection guidelines for new development and implement project review for fire safety compliance.		X					
• Require proper storage and disposal of hazardous materials, including implementation of a Household Hazardous Waste Program.		X					
HYDROLOGY AND WATER QUALITY							
Impacts							
• Degradation of surface water quality from construction activities and/or post-construction uses		PS					
• Exposure of people and property to flooding		PS					
Mitigation Measures							
• Implement general plan policies that control erosion and sedimentation		X					
• Require new development projects and substantial redevelopment projects to incorporate as applicable best management practices of the National Pollutant Discharge Elimination System permit and requirements of other applicable plans to control runoff pollutants and sedimentation.		X					
• Restrict the extent and timing of hillside grading from April to October.		X					
• Adopt stringent land use, zoning and building code regulations limiting new construction in the urbanized flood hazard areas recognized by the Federal Flood Insurance Administration.		X					
LAND USE & PLANNING							
Impacts							
• Land use incompatibilities							S

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TABLE K-1 (Continued)
POTENTIALLY SIGNIFICANT (PS), SIGNIFICANT MITIGABLE (S), AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED IN GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

	City of Campbell[a]	City of Cupertino[b]	Town of Los Gatos[c]	City of Milpitas[d]	City of San Jose[e]	City of Santa Clara[f]	Santa Clara County[g]
• Intensification of land uses or substantial changes in land use density, scale, and/or character		PS	SU				S
• Loss of open space or agricultural lands or the premature urbanization of rural areas					U		S
• Cumulative impacts on agricultural resources					U		
• Inefficient land use patterns							S
Mitigation Measures							
• Implement applicable general plan land use programs and policies that address the clustering of development, resource protection, zoning code modification(s), potential impacts of intensified land uses, conflicts between incompatible land uses, impacts on open space, and/or golf course development.		X					X
• Conduct project-specific environmental review, including design and architectural review as applicable, and implement identified mitigation consistent with general plan land use policies.							X
• Preserve, protect, and enhance the character of residential, retail, and commercial districts and ensure compatibility between the residential, retail, commercial, and industrial districts.		X					
• Establish 20-year growth limits as recommended in the plan's urban growth boundary policy.							X
• Deny expansion of commercial development into viable agricultural land and emphasize in-fill to meet these needs (to be implemented by the LAFCO).							X
• Implement the appropriate recommendations of the agricultural preserve study							X
• Conduct studies and implement recommendations on recreational vehicle park needs and golf course development.							X
• Implement general plan policies that encourage protection of agricultural lands through Willamson Act contracts, agricultural conservation easements and transfers of development rights.					X		
LAND USE & PLANNING (cont.)							
Mitigation Measures (cont.)							
• Develop pedestrian friendly street environment in each neighborhood to improve neighborhood identity, safety and connection to public services.		X					

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TABLE K-1 (Continued)
POTENTIALLY SIGNIFICANT (PS), SIGNIFICANT MITIGABLE (S), AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED IN GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

	City of Campbell[a]	City of Cupertino[b]	Town of Los Gatos[c]	City of Milpitas[d]	City of San Jose[e]	City of Santa Clara[f]	Santa Clara County[g]
• Establish building and development standards for hillside areas to ensure hillside protection		X					
• Require dedication of public parkland in areas where significant new housing units are identified.		X					
MINERAL RESOURCES							
Impacts							
• Impacts on air quality, noise and traffic from mineral extraction operations		PS					
Mitigation Measures							
• Work with the County of Santa Clara to ensure that mining operations outside City limits are consistent with General Plan policies.		X					
NOISE							
Impacts							
• Exposure to or generation of excessive noise levels or ground borne vibration						S	
• Short-term noise impacts during construction		PS				S	
• Increased noise levels particularly from vehicular traffic and/or cumulative noise impacts from increased traffic	S	PS			U	U	
Mitigation Measures							
• Implement general plan programs and policies that reduce noise impacts.	X	X			X		
• Implement/require measures to reduce construction noise (e.g., requiring limits on construction hours, use of hospital-grade mufflers on equipment, use of sound barriers or baffles, and/or limits on the number of active building permits issued).						X	
NOISE (cont.)							
Mitigation Measures (cont.)							
• Conduct project-level environmental review and implement identified mitigation.	X						
• Enforce applicable noise insulation standards of the state building code (Title 24) and adopt and enforce local noise ordinances.	X	X					

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TABLE K-1 (Continued)
POTENTIALLY SIGNIFICANT (PS), SIGNIFICANT MITIGABLE (S), AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED IN GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

	City of Campbell[a]	City of Cupertino[b]	Town of Los Gatos[c]	City of Milpitas[d]	City of San Jose[e]	City of Santa Clara[f]	Santa Clara County[g]
• Include appropriate/feasible noise attenuation techniques in the design new streets and/or implement improvements to reduce noise impacts from existing streets.		X			X	X	
• Evaluate proposed new developments near railroad rights of way for potential vibration impacts and require developers to incorporate measures to minimize vibration impacts to the maximum feasible extent.						X	
POPULATION AND HOUSING							
Impacts							
• Increased demand for housing and related impacts on housing affordability		PS					
• Jobs/housing imbalances, oversupply of jobs		PS			U	U	
Mitigation Measures							
• Implement general plan programs and policies that address impacts related to population growth and housing demand.		X					
• Implement general plan land use programs and policies that address jobs/housing imbalances.		X		X			
• Implement general plan air quality policies and programs to reduce vehicle miles traveled and associated air pollutant emissions					X	X	
PUBLIC SERVICES							
Impacts							
• Increased demand for police protection services		PS					
• Increased demand for schools, including cumulative demand		PS					S, U
PUBLIC SERVICES (cont.)							
Mitigation Measures							
• Implement specified general plan programs and policies and mitigation identified in the general plan EIR that address funding for and the provision and maintenance of community services and/or facilities.							X
• Impose development impact fees to cover the costs of needed infrastructure.		X					

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TABLE K-1 (Continued)
POTENTIALLY SIGNIFICANT (PS), SIGNIFICANT MITIGABLE (S), AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED IN GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

	City of Campbell[a]	City of Cupertino[b]	Town of Los Gatos[c]	City of Milpitas[d]	City of San Jose[e]	City of Santa Clara[f]	Santa Clara County[g]
• Conduct project-specific review to assess required levels of public services and implement identified mitigation		X					
• Cooperate with school districts regarding enrollment projections, the collection of school impact fees, and/or implement other specified measures to provide for and maintain adequate educational services.		X					X
• Implement a Neighborhood Watch Program		X					
RECREATION							
Impacts							
• Increased demand for new or expanded parks and/or recreational facilities		PS					
• Cumulative impacts on overused park facilities							U
Mitigation Measures							
• Implement general plan policies and programs to improve, expand, acquire, and/or develop park and recreational facilities		X					
• Encourage the use of less-utilized parks in the County.							X
• Provide parkland equal to a minimum of three acres for each 1,000 residents and ensure that each household is within a half-mile walk of a park.		X					
• Require dedication of public parkland in areas where significant new housing units are identified.		X					
TRAFFIC AND TRANSPORTATION							
Impacts							
• Increased traffic relative to existing traffic and the capacity of the street system					U		
• Degradation of levels of service on area roads or highways	U	PS	U	U		U	
• Increased vehicle delays at area intersections	U	PS		U			
• Cumulative traffic impacts on roadway segments and/or intersections				U	U	U	U
• Increase in traffic and congestion on roadway segments in other jurisdictions						U	

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TABLE K-1 (Continued)
POTENTIALLY SIGNIFICANT (PS), SIGNIFICANT MITIGABLE (S), AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED IN GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

	City of Campbell[a]	City of Cupertino[b]	Town of Los Gatos[c]	City of Milpitas[d]	City of San Jose[e]	City of Santa Clara[f]	Santa Clara County[g]
• Increased emergency response times due to increased motor vehicle traffic and congestion						S	
Mitigation Measures							
• Implement general plan and/or local transportation plan programs and policies and measures identified in the general plan to mitigate traffic and circulation impacts.		X			X	X	
• Work with transit agencies to improve local transit service, develop new transportation facilities, and encourage public transit ridership.						X	
• Implement measures to encourage the use of alternative modes of travel and reduce vehicle trips.		X			X	X	X
• Coordinate traffic signals, improve intersection capacity, and implement other operational measures to maximize the efficiency of the circulation system.				X			
• Support and participate in regional transportation planning.		X					
• Add various combinations of turn lanes, through lanes, off- and on-ramps, and/or widen lanes at intersections where unacceptable levels of service occur.				X			
• Implement measures to reduce traffic impacts on local streets.		X					
• Expand highway capacity to relieve some bottlenecks.							X
• Implement parking provisions described in the general plan					X		
• Redistribute emergency service station boundaries and implement traffic signal pre-emption for emergency vehicles						X	
TRAFFIC AND TRANSPORTATION (cont.)							
Mitigation Measures (cont.)							
• Create a dedicated funding source for implementation of General Plan roadway and intersection improvements			X				
• Implement capacity improvements at intersections to meet intersection LOS policy standards		X					
UTILITIES							
Impacts							
• Need for new or expanded stormwater drainage facilities		PS					

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TABLE K-1 (Continued)
POTENTIALLY SIGNIFICANT (PS), SIGNIFICANT MITIGABLE (S), AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED IN GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

	City of Campbell[a]	City of Cupertino[b]	Town of Los Gatos[c]	City of Milpitas[d]	City of San Jose[e]	City of Santa Clara[f]	Santa Clara County[g]
• Increased water demand		PS					
• Increased demand for wastewater treatment capacity		PS		S			
• Impacts on landfill capacity						U	
• Increased demand for solid waste services		PS					
• Potential for future cumulative groundwater basin demand to exceed the aquifer's safe yield						PS	
• Potential for flooding to be caused by 40-year storms.		PS					
Mitigation Measures							
• Encourage the implementation of water conservation measures.		X		X			
• Implement general plan policies to find an alternative disposal site to meet the city's future disposal needs.						X	
• Implement specified general plan policies and programs that address the adequacy of and improvements to the existing utility infrastructure and the potential for using recycled water.				X			
• Upgrade key parts of the storm drainage system.		X					
• Work with sanitary districts to ensure adequate capacity for future land uses.		X					
• Implement general plan policies to encourage water conservation and reduce demand from current and future development						X	
UTILITIES (cont.)							
Mitigation Measures (cont.)							
• Implement general plan policies to increase use of recycled water		X				X	
• Implement general plan policies to reduce the amount of waste disposed of in landfills and to increase reuse, recycling and composting		X					
• Groundwater pumping supply quantities will be updated in the Urban Water Management Plan every five years to align water availability with demand.						X	
• Develop groundwater recharge sites		X					

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• Encourage watershed based planning, locate development away from sensitive resources and encourage compact development		X					
• Require future high discharge users to pay for wastewater tributary lines		X					
• Require site design preserve natural topography and limit disturbance to natural water bodies and natural drainage systems.		X					
ENERGY							
Impacts							
• Increased demand for energy, including electricity and natural gas		PS					
• Increased demand for automobile fuel		PS					
Mitigation Measures							
• Require compliance with California Administrative Code Title 24 (Building Code) energy conservation standards.					X	X	
• Implement transportation measures to improve roadway system efficiency and provide for alternative means of transportation.					X		
• Implement specified general plan policies and programs concerning energy conservation in new and existing housing.					X		
ENERGY (cont.)							
Mitigation Measures (cont.)							
• Implement general plan policies that promote energy conservation, use of renewable energy and sustainable site design.		X				X	

[a] City of Campbell, *Campbell Draft General Plan Final Environmental Impact Report*, SCH #2001042063, September 2001.
[b] City of Cupertino, *Supplemental Environmental Analysis for the Final Environmental Impact Report of the General Plan*, November 15, 2005; City of Cupertino, General Plan 2005 Mitigation Monitoring and Reporting Program, November 15, 2005; City of Cupertino, *Draft Environmental Impact Report: City of Cupertino Task Force General Plan*, SCH #2002122061, January 2005.
[c] Town of Los Gatos, *Town of Los Gatos 2020 General Plan Final Environmental Impact Report*, June 16, 2010.
[d] City of Milpitas, *Environmental Impact Report for the Midtown Milpitas Specific Plan*, State Clearinghouse #2000092027, January 2002a; City of Milpitas, Resolution No. 7150 of the City Council of the City of Milpitas Certifying an Environmental Impact Report for the Milpitas Midtown General Plan Amendment and Specific Plan Project and Adopting Related Mitigation Findings, Findings Regarding Alternatives, A Statement of Overriding Considerations and a Mitigation Monitoring and Reporting Plan Pursuant to the California Environmental Quality Act, March 19, 2002b.
[e] City of San José, *Envision San José 2040 General Plan Program Environmental Impact Report*, June 2011.

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POTENTIALLY SIGNIFICANT (PS), SIGNIFICANT MITIGABLE (S), AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED IN GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

[f] City of Santa Clara *2010-2035 General Plan Environmental Impact Report*, November 16, 2010.
[g] County of Santa Clara, *General Plan Environmental Report*, State Clearinghouse #94023004, November 1994a; Resolution of the Board of Supervisors of the County of Santa Clara Recommending Certification of Final Impact Report, Adopting Related Overriding Considerations and Monitoring Program, and Adoption of the County General Plan, December 20, 1994b.
[i] Population shown is for unincorporated county only.

PS= Potentially significant impact S = Significant mitigable impact U = Significant and unavoidable impact X = Mitigation measure identified in Environmental Impact Report

References – Appendix K

City of Campbell, *Environmental Impact Report, Campbell Draft General Plan*, SCH#2001042063 (July 26, 2001) and *Responses to Comments Addendum: Final Environmental Impact Report, Campbell Draft General Plan*, SCH#2001042063, September 2001.

City of Cupertino, *Draft Environmental Impact Report of the Task Force General Plan of the City of Cupertino*, SCH # 2002122061 (January 2005) and *Supplemental Environmental Analysis for the Final Environmental Impact Report of the General Plan*, November 15, 2005a.

City of Cupertino, General Plan 2005 Mitigation Monitoring and Reporting Program, November 15, 2005b.

City of Milpitas, *Draft Environmental Impact Report* (October 2001) and *Final Environmental Impact Report for the Midtown Milpitas Specific Plan*, State Clearinghouse #2000092027, January 2002a.

City of Milpitas, Resolution No. 7150: A Resolution of the City Council of the City of Milpitas Certifying an Environmental Impact Report for the Milpitas Midtown General Plan Amendment and Specific Plan Project and Adopting Related Mitigation Findings, Findings Regarding Alternatives, A Statement of Overriding Considerations and a Mitigation Monitoring and Reporting Plan Pursuant to the California Environmental Quality Act, March 19, 2002b.

City of Monte Sereno, Initial Study for the Comprehensive Update of the Monte Sereno General Plan including Housing Element (n.d., Negative Declaration for the Housing Element adopted June 2010).

City of Monte Sereno, Monte Sereno City Council Minutes, Item 10, adoption of Negative Declaration of Environmental Impact For the Proposed Housing Element Revision to the General Plan, June 1, 2010.

City of San Jose, *Envision San Jose 2040 General Plan Program Environmental Impact Report*, June 2011.

City of Santa Clara, *City of Santa Clara 2010-2035 General Plan Environmental Impact Report*, November 16, 2010.

City of Saratoga, *2007-2014 Housing Element Initial Study and Negative Declaration*, January 2010.

City of Saratoga, *2007 Land Use/Open Space Element Update Initial Study and Negative Declaration*, certified June 2007.

County of Santa Clara, *Santa Clara County General Plan Draft Environmental Report* (September 1994) and *Final Environmental Impact Report Addendum*, State Clearinghouse #94023004, November 1994a.

County of Santa Clara, Resolution of the Board of Supervisors of the County of Santa Clara Recommending Certification of Final Impact Report, Adopting Related Overriding Considerations and Monitoring Program, and Adoption of the County General Plan, December 20, 1994b.

Town of Los Gatos, *Town of Los Gatos 2020 General Plan Environmental Impact Report (Draft)*, March 10, 2010.

APPENDIX L

South Bay Salt Pond Restoration Project EIS/R Summary Impact Table

Table L-1, below, lists impacts identified in the *South Bay Salt Ponds Restoration Project Final Environmental Impact Statement/Report*[1] for the Program level alternative that was selected for implementation by project sponsors (Alternative C - Tidal Emphasis, 90:10 tidal habitat : managed ponds by area), as well as Phase 1 project level impacts at the Eden Landing, Alviso and Ravenswood pond complexes

TABLE L-1
SOUTH BAY SALT POND RESTORATION PROJECT EIS/R SUMMARY IMPACT TABLE

South Bay Salt Pond Restoration Project EIS/R Impact	Selected Program Alternative (Alternative C)	Phase 1 Actions		
		Eden Landing	**Alviso**	**Ravenswood**
Hydrology, Flood Management and Infrastructure				
SBSP Impact 3.3-1: Potential for increased coastal flood risk landward of the SBSP Restoration Project Area.	LTS, B	LTS	LTS	LTS
SBSP Impact 3.3-2: Increased coastal flood risk due to regional changes in Bay bathymetry and hydrodynamics.	PS	LTS	LTS	LTS
SBSP Impact 3.3-3: Increased fluvial flood risk.	LTS, B	LTS	LTS	LTS
SBSP Impact 3.3-4: Increased levee erosion along channel banks downstream of tidal breaches.	LTS	LTS	LTS	LTS
SBSP Impact 3.3-5: Potential interference with navigation.	LTS, B	LTS, B	LTS, B	LTS, B
Surface Water, Sediment, Groundwater Quality				
SBSP Impact 3.4-1: Changes in algal abundance and composition, which could in turn degrade water quality by lowering DO and/or promoting the growth of nuisance species.	LTS	LTS	LTS	LTS
SBSP Impact 3.4-2: Potential to cause localized, seasonally low DO levels as a result of algal blooms, increased microbial activity, or increased residence time of water.	LTS	LTS	LTS	LTS
SBSP Impact 3.4-3: Potential to mobilize, transport, and deposit mercury-contaminated sediments, leading to exceedance of numeric water quality objectives, TMDL allocations, and sediment quality guidelines for total mercury.	LTS	LTS	LTS	LTS
SBSP Impact 3.4-4: Potential increase in net methyl mercury production and bioaccumulation in the food web.	LTS	LTS	LTS	LTS
SBSP Impact 3.4-5: Potential impacts to water quality from other contaminants.	LTSM	LTSM	LTSM	LTSM
SBSP Impact 3.4-6: Potential to cause seawater intrusion of regional groundwater sources.	LTSM	LTSM	LTSM	LTSM
Geology, Soils, and Seismicity				
SBSP Impact 3.5-1: Potential effects from settlement and subsidence due to consolidation of Bay mud.	LTS, B	LTS	LTS	LTS
SBSP Impact 3.5-2: Potential effects from liquefaction of	LTS, B	LTS	LTS	LTS

[1] U.S. Fish and Wildlife Service and California Department of Fish and Game, South Bay Salt Pond Restoration Project Final Environmental Impact Statement/Report, December 2007.

PS = Potentially Significant; LTS = Less than Significant; LTSM = Less than Significant with Mitigation; B = Beneficial

TABLE L-1
SOUTH BAY SALT POND RESTORATION PROJECT EIS/R SUMMARY IMPACT TABLE (Continued)

South Bay Salt Pond Restoration Project EIS/R Impact	Selected Program Alternative (Alternative C)	Phase 1 Actions		
		Eden Landing	Alviso	Ravenswood
soils and lateral spreading.				
SBSP Impact 3.5-3: Potential effects from tsunami and/or seiche.	LTS, B	LTS	LTS	LTS
SBSP Impact 3.5-4: Potential for ground and levee failure from fault rupture.	LTS	No Impact	LTS	LTS
SBSP Impact 3.5-5: Potential effects from consolidation of Bay mud on existing subsurface utility crossings and surface rail crossings.	LTS	LTS	LTS	No Impact
Biological Resources				
SBSP Impact 3.6-1: Potential reduction in number of small shorebirds using San Francisco Bay, resulting in substantial declines in flyway level populations.	LTS	LTS, B	LTS, B	LTS, B
SBSP Impact 3.6-2: Loss of intertidal mudflats and reduction of habitat for mudflat-associated wildlife species.	LTS	LTS	LTS	LTS
SBSP Impact 3.6-3: Potential habitat conversion impacts to western snowy plovers.	LTS	LTS	LTS	LTS
SBSP Impact 3.6-4: Potential reduction in the numbers of breeding, pond-associated waterbirds (avocets, stilts, and terns) using the South Bay due to reduction in habitat, concentration effects, displacement by nesting California gulls, and other Project-related effects.	LTS	LTS. B	LTS. B	LTS. B
SBSP Impact 3.6-5: Potential reduction in the numbers of non-breeding, salt-pond-associated birds (e.g., phalaropes, eared grebes, and Bonaparte's gulls) as a result of habitat loss.	LTS	LTS	LTS	LTS
SBSP Impact 3.6-6: Potential reduction in foraging habitat for diving ducks, resulting in declines in flyway-level populations.	LTS	LTS, B	LTS, B	LTS, B
SBSP Impact 3.6-7: Reduction in foraging habitat for ruddy ducks, resulting in declines in flyway-level populations.	PS	LTS, B	LTS, B	LTS, B
SBSP Impact 3.6-8: Potential habitat conversion impacts on California least terns.	LTS	LTS, B	LTS, B	LTS, B
SBSP Impact 3.6-9: Potential loss of pickleweed-dominated tidal salt marsh habitat for the salt marsh harvest mouse and salt marsh wandering shrew, and further isolation of these species' populations, due to breaching activities and scour.	LTS, B	LTS, B	LTS, B	LTS, B
Biological Resources (cont.)				
SBSP Impact 3.6-10: Potential construction related loss of or disturbance to special-status, marsh-associated wildlife.	LTS	LTS, B	LTS, B	LTS, B
SBSP Impact 3.6-11: Potential construction related loss of, or disturbance to, nesting pond associated birds.	LTS	LTS	LTS	LTS
SBSP Impact 3.6-12: Potential disturbance to or loss of	LTS, B	LTS, B	LTS, B	LTS, B

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TABLE L-1
SOUTH BAY SALT POND RESTORATION PROJECT EIS/R SUMMARY IMPACT TABLE (Continued)

South Bay Salt Pond Restoration Project EIS/R Impact	Selected Program Alternative (Alternative C)	Phase 1 Actions		
		Eden Landing	Alviso	Ravenswood
sensitive wildlife species due to ongoing monitoring, maintenance, and management activities.				
SBSP Impact 3.6-13: Potential effects of habitat conversion and pond management on steelhead.	LTS, B	LTS	LTS	LTS
SBSP Impact 3.6-14: Potential impacts to estuarine fish.	LTS, B	LTS, B	LTS, B	LTS, B
SBSP Impact 3.6-15: Potential impacts to piscivorous birds.	LTS	LTS, B	LTS, B	LTS, B
SBSP Impact 3.6-16: Potential impacts to dabbling ducks.	LTS, B	LTS, B	LTS, B	LTS, B
SBSP Impact 3.6-17: Potential impacts to harbor seals.	LTS, B	LTS, B	LTS, B	LTS, B
SBSP Impact 3.6-18: Potential recreation oriented impacts to sensitive species and their habitats.	LTS	LTS	LTS	LTS
SBSP Impact 3.6-19: Potential impacts to special-status plants.	LTS, B	LTS	LTS	LTS
SBSP Impact 3.6-20: Colonization of mudflats and marshplain by non-native Spartina and its hybrids.	LTS	LTS	LTS	No Impact
SBSP Impact 3.6-21: Colonization by non-native Lepidium.	LTS	LTS	LTS	LTS
SBSP Impact 3.6-22: Potential increase in exposure of wildlife to avian botulism and other diseases.	LTS	LTS	LTS	LTS
SBSP Impact 3.6-23: Potential impacts to bay shrimp populations.	LTS, B	LTS, B	LTS, B	LTS, B
Recreation and Public Access				
SBSP Impact 3.7-1: Provision of new public access and recreation facilities, including the opening of new areas for recreational purposes and completion of the Bay Trail spine.	LTS, B	LTS, B	LTS, B	LTS, B
SBSP Impact 3.7-2: Permanent removal of existing recreational features (trails) in locations that visitors have been accustomed to using and that would not be replaced in the general vicinity of the removed feature.	PS	No Impact	No Impact	No Impact
Cultural Resources				
SBSP Impact 3.8-1: Potential disturbance of known and/or unknown cultural resources.	LTSM	LTSM	LTSM	LTSM
SBSP Impact 3.8-2: Disturbance of the historic salt ponds and associated structures which may be considered a significant cultural landscape.	LTSM	LTSM	LTSM	LTSM
Land Use				
SBSP Impact 3.9-1: Land use compatibility impacts.	LTS, B	LTS, B	LTS, B	LTS, B
Public Health and Vector Management				
SBSP Impact 3.10-1: Potential increase in mosquito populations.	LTS	LTS	LTS	LTS

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TABLE L-1
SOUTH BAY SALT POND RESTORATION PROJECT EIS/R SUMMARY IMPACT TABLE (Continued)

South Bay Salt Pond Restoration Project EIS/R Impact	Selected Program Alternative (Alternative C)	Phase 1 Actions		
		Eden Landing	Alviso	Ravenswood
Traffic				
SBSP Impact 3.12-1: Potential short-term degradation of traffic levels on a roadway or at an intersection due to construction.	LTSM	LTS	LTS	LTS
SBSP Impact 3.12-2: Potential long-term degradation of traffic levels on a roadway or an intersection.	LTS	LTS	LTS	LTS
SBSP Impact 3.12-3: Potential increase in parking demand.	LTSM	LTS	LTS	LTS
SBSP Impact 3.12-4: Potential increase in wear and tear on the designated haul routes during construction.	LTSM	LTS	LTS	LTS
Noise				
SBSP Impact 3.13-1: Short-term construction noise effects.	LTSM	LTSM	LTSM	LTSM
SBSP Impact 3.13-2: Traffic-related noise impacts during construction.	LTSM	LTSM	LTSM	LTSM
SBSP Impact 3.13-3: Traffic-related noise effects during operation.	LTS	LTS	LTS	LTS
SBSP Impact 3.13-4: Potential operational noise effects from pump operation and other O&M activities.	LTSM	LTSM	LTSM	LTSM
SBSP Impact 3.13-5: Potential vibration effects during construction and/or operation.	LTS	LTS	LTS	LTS
Air Quality				
SBSP Impact 3.14-1: Short-term construction generated air pollutant emissions.	LTSM	LTSM	LTSM	LTSM
SBSP Impact 3.14-2: Potential long-term operational air pollutant emissions.	LTS	LTS	LTS	LTS
SBSP Impact 3.14-3: Potential exposure of sensitive receptors to toxic air contaminant emissions.	LTSM	LTSM	LTSM	LTSM
SBSP Impact 3.14-4: Potential odor emissions.	LTS	LTS	LTS	LTS
Public Services				
SBSP Impact 3.15-1: Increased demand for fire and police protection services.	LTS	LTS	LTS	LTS
Utilities				
SBSP Impact 3.16-1: Reduced ability to access PG&E towers, stations or electrical transmission lines.	LTS	No Impact	LTS	LTS
Utilities (cont.)				
SBSP Impact 3.16-2: Reduced clearance between waterways and PG&E electrical transmission lines.	LTS	No Impact	No Impact	No Impact
SBSP Impact 3.16-3: Reduced structural integrity of PG&E towers.	LTS	No Impact	LTS	LTS
SBSP Impact 3.16-4: Changes in water level, tidal flow	LTS	LTS	LTS	No Impact

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TABLE L-1
SOUTH BAY SALT POND RESTORATION PROJECT EIS/R SUMMARY IMPACT TABLE (Continued)

South Bay Salt Pond Restoration Project EIS/R Impact	Selected Program Alternative (Alternative C)	Phase 1 Actions		
		Eden Landing	Alviso	Ravenswood
and sedimentation near storm drain systems.				
SBSP Impact 3.16-5: Changes in water level, tidal flow and sedimentation near pumping facilities.	LTS	LTS	LTS	LTS
SBSP Impact 3.16-6: Changes in water level, tidal flow and sedimentation near sewer force mains and outfalls.	LTS	No Impact	LTS	No Impact
SBSP Impact 3.16-7: Disrupt Hetch Hetchy Aqueduct service so as to create a public health hazard or extended service disruption.	LTS	LTS	LTS	LTS
SBSP Impact 3.16-8: Disruption of rail service due to construction of coastal flood levees and tidal habitat restoration.	LTSM	No Impact	No Impact	No Impact
SBSP Impact 3.16-9: Reduced access to sewer force mains due to levee construction.	LTS	No Impact	No Impact	No Impact
Aesthetics				
SBSP Impact 3.17-1: Alter views of the SBSP Restoration Project Area.	LTS, B	LTS, B	LTS, B	LTS, B
SBSP Impact 3.17-2: Alter the existing visual character of the Project Area and its surroundings.	LTS, B	LTS, B	LTS, B	LTS, B

SOURCE: U.S. Fish and Wildlife Service and California Department of Fish and Game, South Bay Salt Pond Restoration Project Final Environmental Impact Statement/Report, December 2007.

PS = Potentially Significant; LTS = Less than Significant; LTSM = Less than Significant with Mitigation; B = Beneficial