ALBERT A. WEBB ASSOCIATES

Technical Memorandum

To: Kenneth Phung, Planning Manager

From: Eliza Laws, Senior Environmental Analyst
Monica Tobias, Assistant Environmental Analyst

Date: October 16, 2018

Re: Air Quality/Greenhouse Gas Analysis for the Phase 2 Perris Valley Storm Drain Channel Trail Project

The following air quality assessment was prepared to evaluate whether the expected criteria air pollutant emissions generated as a result of construction and operation of the proposed Project would cause exceedances of the South Coast Air Quality Management District's (SCAQMD) thresholds for air quality in the Project area. The greenhouse gas (GHG) assessment was prepared to evaluate whether the expected criteria GHG emissions generated as a result of construction and operation of the proposed Project would exceed the SCAQMD draft screening significance thresholds. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000 et seq.). The methodology follows the *CEQA Air Quality Handbook* prepared by the SCAQMD for quantification of emissions and evaluation of potential impacts to air resources. As recommended by SCAQMD staff, the **Cal**ifornia **E**missions **E**stimator **Mod**el version 2016.3.2 (CalEEMod) was used to quantify Project-related emissions.

The City of Perris (City) proposes Phase 2 of the Perris Valley Storm Drain (PVSD) Channel Trail (Project). The Project consists of approximately three miles of multi-use trail parallel to the PVSD Channel extending from Nuevo Road to the South Perris Metrolink Station at Case Road. The Project proposes a 10-foot (ft) wide asphalt bicycle path and a 5-ft wide decomposed granite pedestrian path within a 30-ft wide construction footprint that is currently used by the Riverside County Flood Control and Water Conservation District to access the PVSD for maintenance purposes.

▪ Regional Significance Thresholds

The thresholds contained in the *SCAQMD CEQA Air Quality Handbook*[1] (SCAQMD 1993) are considered regional thresholds and are shown in **Table 1 – SCAQMD CEQA Daily Regional Significance Thresholds**, below. These regional thresholds were developed based on the SCAQMD's treatment of a major stationary source.

[1] South Coast Air Quality Management District, *CEQA Air Quality Handbook*, November 1993. (Available at SCAQMD.)

Table 1 – SCAQMD CEQA Daily Regional Significance Thresholds

Emission Threshold	Units	VOC	NO_X	CO	SO_X	PM-10	PM-2.5
Construction	lbs/day	75	100	550	150	150	55
Operation	lbs/day	55	55	550	150	150	55

Air quality impacts can be described in a short- and long-term perspective. Short-term impacts occur during site grading and Project construction and consist of fugitive dust and other particulate matter, as well as exhaust emissions generated by construction-related vehicles. Long-term air quality impacts occur once the Project is in operation. The Project consists of a multi-use trail for bicycle and pedestrian use, without any long-term sources of emissions. Operational emissions would be from the infrequent visits by vehicles driven by maintenance personnel and are considered negligible; therefore, only short-term impacts were quantified.

The Project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, managing haul road dust by application of water, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent, stabilizing ground cover on finished sites. In addition, projects that disturb 50 or more acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. Based on the size of this Project's disturbance area (approximately 10.83 acres) a Fugitive Dust Control Plan or a Large Operation Notification Form would not be required.

Short-Term Analysis

Short-term emissions from storm drain construction were evaluated using the CalEEMod version 2016.3.2 program. The total construction period estimated for the proposed Project is approximately ten months, beginning no sooner than April 2021. The default parameters within CalEEMod were used and these default values reflect a worst-case scenario, which means that Project emissions are expected to be equal to or less than the estimated emissions. In addition to the default values used, assumptions relevant to model inputs for short-term construction emission estimates used are:

- Construction is anticipated to begin in April 2021 and end in January 2022. The modeled schedule for each activity is shown below:

Construction Activity	Start Date	End Date	Total Working Days
Grading	04/1/2021	01/31/2022	218 days
Paving	04/1/2021	01/31/2022	218 days

- The off-road equipment to be used for each activity is shown below based on input from the City. Each piece of equipment is assumed to operate 8 hours per day:

Activity	Off-Road Equipment	Unit Amount
Grading	Excavators	2
	Graders	1
	Rubber Tired Dozers	1
	Scrapers	2
	Tractor/Loaders/Backhoes	2

Activity	Off-Road Equipment	Unit Amount
Paving	Pavers	2
	Paving Equipment	2
	Rollers	2
	Cement and Mortar Mixers	1

- The CalEEMod default value for daily construction worker trips was used.
- A total of three (3) one-way vendor trips per day were added to the grading activity to account for water truck trips.
- Four (4) one way vendor trips per day were added to the paving activity to account for material delivery/hauling.
- To evaluate Project compliance with SCAQMD Rule 403 for fugitive dust control, the Project utilized the mitigation option of watering the Project site three times daily which achieves a control efficiency of 61 percent for PM-10 and PM-2.5 emissions.

The results of this analysis are summarized below.

Table 2 –Estimated Maximum Daily Construction Emissions

Construction Activity	Peak Daily Emissions (lb/day)					
	VOC	NO_X	CO	SO_2	PM-10	PM-2.5
SCAQMD Daily Construction Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Grading	4.29	46.73	31.67	0.06	4.72	3.20
Paving	1.45	13.71	15.69	0.03	0.92	0.70
Maximum[1]	**5.74**	**60.44**	**47.36**	**0.09**	**5.64**	**3.90**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Note: [1] Maximum emissions are the sum of grading and paving since these activities overlap.

As shown in the table above, the emissions from construction of the Project are below the SCAQMD Daily Construction Thresholds for all criteria pollutants.

▪ Localized Significance Threshold Analysis

Background

As part of the SCAQMD's environmental justice program, attention has been focused on localized effects of air quality. Staff at SCAQMD has developed localized significance threshold (LST) methodology[2] that can be used by public agencies to determine whether or not a project may generate significant adverse localized air quality impacts (both short- and long-term). LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area (SRA). The Project is located within SRA 24.

[2] South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, Revised July 2008. (Available at http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds, accessed October 2018.)

Short-Term Analysis

According to the LST methodology, only on-site emissions need to be analyzed. Emissions associated with vendor and worker trips are mobile source emissions that occur off site. The emissions analyzed under the LST methodology are NO_2, CO, PM-10, and PM-2.5. SCAQMD has provided LST lookup tables to allow users to readily determine if the daily emissions for proposed construction or operational activities could result in significant localized air quality impacts for projects five acres or smaller. Although the Project disturbs approximately 10.83 acres, the Project is linear and will progress in a linear fashion and disturb a much smaller area per day. The daily disturbance area is approximately 0.02 acres per day (300 feet long by 30 feet wide). While the equipment used for Project construction would result in a daily disturbance area of five acres, consistent with SCAQMD guidance, the one-acre LST lookup tables were utilized to estimate the construction emissions. [3]

The LST thresholds are estimated using the maximum daily disturbed area (in acres) and the distance of the Project to the nearest sensitive receptors (in meters). The closest sensitive receptors are a residential lot and park approximately 38 meters (125 feet) west of the PVSD Channel. Linear regression has been utilized, consistent with SCAQMD LST Methodology, to determine the thresholds at 38 meters since the LST Look-Up Tables only present thresholds for 25, 50, 100, 200, and 500 meters. The results are summarized below.

Table 3 – LST Results for Daily Construction Emissions

Pollutant	Peak Daily Emissions (lb/day)			
	NO_X	CO	PM-10	PM-2.5
LST Threshold for 1-acre at 38 meters[1]	**134**	**750**	**8**	**4**
Grading	46.40	30.88	4.48	3.13
Paving	13.29	14.96	0.69	0.64
Maximum	**59.69**	**45.84**	**5.17**	**3.77**
Exceeds Threshold?	**No**	**No**	**No**	**No**

Note: [1]SCAQMD LST for 38 meter distance predicted using Appendix K LST Methodology (calculations attached herewith).

Emissions from construction of the Project will be below the LST established by SCAQMD for the Project.

Long-Term Analysis

This Project involves the construction of a multi-use trail. The long-term emissions, as discussed previously, are primarily in the form of mobile source emissions, with no stationary sources of emission present. According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site; such as warehouse/transfer facilities. The proposed Project does not include such uses. Therefore, due to the lack of stationary source emissions, no long-term LST analysis is needed.

[3] http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf?sfvrsn=2

▪ Greenhouse Gas Analysis

Greenhouse gases (GHG) are not presented in lbs/day like criteria pollutants; they are typically evaluated on an annual basis using the metric system. Additionally, unlike the criteria pollutants, GHG do not have adopted significance thresholds associated with them at this time. Several agencies, at various levels, have proposed draft GHG significance thresholds for use in CEQA documents. SCAQMD has been working on GHG thresholds for development projects. The most recent draft proposal was in September 2010[4] and included significance thresholds for residential, commercial, and mixed-use projects at 3,500, 1,400, and 3,000 metric tonnes per year of carbon dioxide equivalents ($MTCO_2E$/yr), respectively. Alternatively, a lead agency has the option to use 3,000 $MTCO_2E$/yr as a threshold for all non-industrial projects. Although both options are recommended by SCAQMD, a lead agency is advised to use only one option and to use it consistently. In December 2008, the SCAQMD adopted a threshold of 10,000 $MTCO_2E$/yr for stationary source projects where SCAQMD is the lead agency. The SCAQMD significance thresholds evaluate construction emissions by amortizing them over an expected project life of 30 years.

The CalEEMod output results for construction-related GHG emissions present the GHG emissions estimates for the Project for CO_2, methane (CH_4), nitrous oxide (N_2O), and CO_2E.[5]

Short-Term Analysis

Construction Related Emissions

The CalEEMod model calculates GHG emissions from fuel usage by construction equipment and construction-related activities, like construction worker trips, for the Project. The CalEEMod estimate does not analyze emissions from construction-related electricity or natural gas. Construction-related electricity and natural gas emissions vary based on the amount of electric power used during construction and other unknown factors which make them too speculative to quantify.

Table 4 – Project Construction Equipment GHG Emissions

Year	Metric Tons per year (MT/yr)			
	Total CO_2	Total CH_4	Total N_2O	Total CO_2E
2021	788.61	0.24	0.00	794.61
2022	83.97	0.03	0.00	84.61
Total	872.58	0.27	0.0	879.22
			Amortized	**29.31**

Evaluation of the table above indicates that an estimated 879.22 $MTCO_2E$ will occur from Project construction equipment over the course of the estimated construction period.

The proposed Project does not fit into the categories provided (industrial, commercial, and residential) in either the draft thresholds from CARB and SCAQMD. The Project's GHG emissions do not exceed any of the SCAQMD recommended screening levels. Due to the estimated amount of emissions from Project construction, and negligible operational emissions from infrequent maintenance vehicles, the proposed Project will not generate GHG emissions that exceed the draft screening thresholds.

[4] http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-main-presentation.pdf?sfvrsn=2

[5] CO_2E is the sum of CO_2 emissions estimated plus the sum of CH_4 and N_2O emissions estimated multiplied by their respective global warming potential (GWP).

▪ Conclusion

The conclusion of this analysis indicates that the proposed Project's construction emissions will not exceed criteria pollutant thresholds established by SCAQMD on a regional or localized level. The Project will also not generate GHG emissions that exceed the GHG screening thresholds recommended by SCAQMD. No mitigation is required.

Should you have any questions, please contact me at (951) 686-1070.

CALEEMOD OUTPUT FILES

CalEEMod Version: CalEEMod.2016.3.2

Date: 10/12/2018 11:50 AM

Perris Valley Storm Drain Trail Phase 2 - Riverside-South Coast County, Summer

Perris Valley Storm Drain Trail Phase 2

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	3.61	Acre	3.61	157,251.60	0
Other Non-Asphalt Surfaces	7.22	Acre	7.22	314,503.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Per City

Off-road Equipment -

Off-road Equipment - Per City

Trips and VMT - 3 water truck and 4 material delivery truck trips per day

Construction Off-road Equipment Mitigation - water site 3x daily per rule 403

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	218.00
tblConstructionPhase	NumDays	20.00	218.00
tblGrading	AcresOfGrading	545.00	75.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.7454	60.4375	47.3605	0.0914	6.8565	2.6811	9.5376	3.4752	2.4678	5.9430	0.0000	8,860.6517	8,860.6517	2.6852	0.0000	8,927.7825
2022	5.0135	51.0400	45.3338	0.0913	6.8565	2.2206	9.0771	3.4752	2.0441	5.5193	0.0000	8,849.0563	8,849.0563	2.6851	0.0000	8,916.1834
Maximum	**5.7454**	**60.4375**	**47.3605**	**0.0914**	**6.8565**	**2.6811**	**9.5376**	**3.4752**	**2.4678**	**5.9430**	**0.0000**	**8,860.6517**	**8,860.6517**	**2.6852**	**0.0000**	**8,927.7825**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.7454	60.4375	47.3605	0.0914	2.9605	2.6811	5.6416	1.4319	2.4678	3.8997	0.0000	8,860.6517	8,860.6517	2.6852	0.0000	8,927.7825
2022	5.0135	51.0400	45.3338	0.0913	2.9605	2.2206	5.1811	1.4319	2.0441	3.4760	0.0000	8,849.0563	8,849.0563	2.6851	0.0000	8,916.1834
Maximum	**5.7454**	**60.4375**	**47.3605**	**0.0914**	**2.9605**	**2.6811**	**5.6416**	**1.4319**	**2.4678**	**3.8997**	**0.0000**	**8,860.6517**	**8,860.6517**	**2.6852**	**0.0000**	**8,927.7825**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	56.82	0.00	41.86	58.80	0.00	35.65	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	4/1/2021	1/31/2022	5	218	
2	Paving	Paving	4/1/2021	1/31/2022	5	218	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 10.83

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3869	0.0000	6.3869	3.3496	0.0000	3.3496			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**6.3869**	**1.9853**	**8.3723**	**3.3496**	**1.8265**	**5.1761**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.0000e-003	0.2776	0.0495	7.8000e-004	0.0192	5.3000e-004	0.0197	5.5300e-003	5.1000e-004	6.0400e-003		81.9753	81.9753	5.8600e-003		82.1219
Worker	0.0948	0.0540	0.7394	2.1400e-003	0.2236	1.3200e-003	0.2249	0.0593	1.2100e-003	0.0605		212.9502	212.9502	5.0800e-003		213.0771
Total	**0.1018**	**0.3316**	**0.7890**	**2.9200e-003**	**0.2428**	**1.8500e-003**	**0.2446**	**0.0648**	**1.7200e-003**	**0.0665**		**294.9255**	**294.9255**	**0.0109**		**295.1990**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4909	0.0000	2.4909	1.3064	0.0000	1.3064			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**2.4909**	**1.9853**	**4.4763**	**1.3064**	**1.8265**	**3.1329**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.0000e-003	0.2776	0.0495	7.8000e-004	0.0192	5.3000e-004	0.0197	5.5300e-003	5.1000e-004	6.0400e-003		81.9753	81.9753	5.8600e-003		82.1219
Worker	0.0948	0.0540	0.7394	2.1400e-003	0.2236	1.3200e-003	0.2249	0.0593	1.2100e-003	0.0605		212.9502	212.9502	5.0800e-003		213.0771
Total	**0.1018**	**0.3316**	**0.7890**	**2.9200e-003**	**0.2428**	**1.8500e-003**	**0.2446**	**0.0648**	**1.7200e-003**	**0.0665**		**294.9255**	**294.9255**	**0.0109**		**295.1990**

3.2 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3869	0.0000	6.3869	3.3496	0.0000	3.3496			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**6.3869**	**1.6349**	**8.0218**	**3.3496**	**1.5041**	**4.8537**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.5300e-003	0.2619	0.0461	7.7000e-004	0.0192	4.4000e-004	0.0197	5.5300e-003	4.2000e-004	5.9600e-003		81.2776	81.2776	5.5500e-003		81.4164
Worker	0.0887	0.0486	0.6820	2.0600e-003	0.2236	1.2800e-003	0.2248	0.0593	1.1800e-003	0.0605		205.1692	205.1692	4.5600e-003		205.2832
Total	**0.0952**	**0.3105**	**0.7281**	**2.8300e-003**	**0.2428**	**1.7200e-003**	**0.2445**	**0.0648**	**1.6000e-003**	**0.0664**		**286.4468**	**286.4468**	**0.0101**		**286.6996**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4909	0.0000	2.4909	1.3064	0.0000	1.3064			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**2.4909**	**1.6349**	**4.1258**	**1.3064**	**1.5041**	**2.8105**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.5300e-003	0.2619	0.0461	7.7000e-004	0.0192	4.4000e-004	0.0197	5.5300e-003	4.2000e-004	5.9600e-003		81.2776	81.2776	5.5500e-003		81.4164
Worker	0.0887	0.0486	0.6820	2.0600e-003	0.2236	1.2800e-003	0.2248	0.0593	1.1800e-003	0.0605		205.1692	205.1692	4.5600e-003		205.2832
Total	**0.0952**	**0.3105**	**0.7281**	**2.8300e-003**	**0.2428**	**1.7200e-003**	**0.2445**	**0.0648**	**1.6000e-003**	**0.0664**		**286.4468**	**286.4468**	**0.0101**		**286.6996**

3.3 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3143	13.2873	14.9616	0.0235		0.6920	0.6920		0.6378	0.6378		2,257.7272	2,257.7272	0.7191		2,275.7047
Paving	0.0434					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3577**	**13.2873**	**14.9616**	**0.0235**		**0.6920**	**0.6920**		**0.6378**	**0.6378**		**2,257.7272**	**2,257.7272**	**0.7191**		**2,275.7047**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	9.3400e-003	0.3702	0.0660	1.0400e-003	0.0256	7.0000e-004	0.0263	7.3700e-003	6.7000e-004	8.0500e-003		109.3004	109.3004	7.8200e-003		109.4959
Worker	0.0853	0.0486	0.6655	1.9200e-003	0.2012	1.1900e-003	0.2024	0.0534	1.0900e-003	0.0545		191.6552	191.6552	4.5700e-003		191.7694
Total	**0.0947**	**0.4188**	**0.7315**	**2.9600e-003**	**0.2268**	**1.8900e-003**	**0.2287**	**0.0607**	**1.7600e-003**	**0.0625**		**300.9556**	**300.9556**	**0.0124**		**301.2653**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3143	13.2873	14.9616	0.0235		0.6920	0.6920		0.6378	0.6378	0.0000	2,257.7272	2,257.7272	0.7191		2,275.7047
Paving	0.0434					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3577**	**13.2873**	**14.9616**	**0.0235**		**0.6920**	**0.6920**		**0.6378**	**0.6378**	**0.0000**	**2,257.7272**	**2,257.7272**	**0.7191**		**2,275.7047**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	9.3400e-003	0.3702	0.0660	1.0400e-003	0.0256	7.0000e-004	0.0263	7.3700e-003	6.7000e-004	8.0500e-003		109.3004	109.3004	7.8200e-003		109.4959
Worker	0.0853	0.0486	0.6655	1.9200e-003	0.2012	1.1900e-003	0.2024	0.0534	1.0900e-003	0.0545		191.6552	191.6552	4.5700e-003		191.7694
Total	**0.0947**	**0.4188**	**0.7315**	**2.9600e-003**	**0.2268**	**1.8900e-003**	**0.2287**	**0.0607**	**1.7600e-003**	**0.0625**		**300.9556**	**300.9556**	**0.0124**		**301.2653**

3.3 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1616	11.4931	14.8889	0.0235		0.5822	0.5822		0.5368	0.5368		2,258.1766	2,258.1766	0.7193		2,276.1578
Paving	0.0434					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2050**	**11.4931**	**14.8889**	**0.0235**		**0.5822**	**0.5822**		**0.5368**	**0.5368**		**2,258.1766**	**2,258.1766**	**0.7193**		**2,276.1578**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.7100e-003	0.3492	0.0614	1.0300e-003	0.0256	5.9000e-004	0.0262	7.3700e-003	5.7000e-004	7.9400e-003		108.3701	108.3701	7.4100e-003		108.5552
Worker	0.0798	0.0438	0.6138	1.8500e-003	0.2012	1.1500e-003	0.2024	0.0534	1.0600e-003	0.0544		184.6523	184.6523	4.1000e-003		184.7549
Total	**0.0885**	**0.3930**	**0.6753**	**2.8800e-003**	**0.2268**	**1.7400e-003**	**0.2286**	**0.0607**	**1.6300e-003**	**0.0624**		**293.0224**	**293.0224**	**0.0115**		**293.3101**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1616	11.4931	14.8889	0.0235		0.5822	0.5822		0.5368	0.5368	0.0000	2,258.1766	2,258.1766	0.7193		2,276.1578
Paving	0.0434					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2050**	**11.4931**	**14.8889**	**0.0235**		**0.5822**	**0.5822**		**0.5368**	**0.5368**	**0.0000**	**2,258.1766**	**2,258.1766**	**0.7193**		**2,276.1578**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.7100e-003	0.3492	0.0614	1.0300e-003	0.0256	5.9000e-004	0.0262	7.3700e-003	5.7000e-004	7.9400e-003		108.3701	108.3701	7.4100e-003		108.5552
Worker	0.0798	0.0438	0.6138	1.8500e-003	0.2012	1.1500e-003	0.2024	0.0534	1.0600e-003	0.0544		184.6523	184.6523	4.1000e-003		184.7549
Total	**0.0885**	**0.3930**	**0.6753**	**2.8800e-003**	**0.2268**	**1.7400e-003**	**0.2286**	**0.0607**	**1.6300e-003**	**0.0624**		**293.0224**	**293.0224**	**0.0115**		**293.3101**

CalEEMod Version: CalEEMod.2016.3.2

Date: 10/12/2018 11:52 AM

Perris Valley Storm Drain Trail Phase 2 - Riverside-South Coast County, Winter

Perris Valley Storm Drain Trail Phase 2

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	3.61	Acre	3.61	157,251.60	0
Other Non-Asphalt Surfaces	7.22	Acre	7.22	314,503.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Per City

Off-road Equipment -

Off-road Equipment - Per City

Trips and VMT - 3 water truck and 4 material delivery truck trips per day

Construction Off-road Equipment Mitigation - water site 3x daily per rule 403

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	218.00
tblConstructionPhase	NumDays	20.00	218.00
tblGrading	AcresOfGrading	545.00	75.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.7430	60.4355	47.1108	0.0909	6.8565	2.6811	9.5377	3.4752	2.4678	5.9430	0.0000	8,811.8254	8,811.8254	2.6855	0.0000	8,878.9638
2022	5.0118	51.0370	45.1025	0.0908	6.8565	2.2206	9.0771	3.4752	2.0442	5.5193	0.0000	8,801.7899	8,801.7899	2.6855	0.0000	8,868.9263
Maximum	**5.7430**	**60.4355**	**47.1108**	**0.0909**	**6.8565**	**2.6811**	**9.5377**	**3.4752**	**2.4678**	**5.9430**	**0.0000**	**8,811.8254**	**8,811.8254**	**2.6855**	**0.0000**	**8,878.9638**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.7430	60.4355	47.1108	0.0909	2.9605	2.6811	5.6416	1.4319	2.4678	3.8998	0.0000	8,811.8254	8,811.8254	2.6855	0.0000	8,878.9638
2022	5.0118	51.0370	45.1025	0.0908	2.9605	2.2206	5.1811	1.4319	2.0442	3.4761	0.0000	8,801.7899	8,801.7899	2.6855	0.0000	8,868.9263
Maximum	**5.7430**	**60.4355**	**47.1108**	**0.0909**	**2.9605**	**2.6811**	**5.6416**	**1.4319**	**2.4678**	**3.8998**	**0.0000**	**8,811.8254**	**8,811.8254**	**2.6855**	**0.0000**	**8,878.9638**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**56.82**	**0.00**	**41.86**	**58.80**	**0.00**	**35.65**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	4/1/2021	1/31/2022	5	218	
2	Paving	Paving	4/1/2021	1/31/2022	5	218	

Acres of Grading (Site Preparation Phase): 0
Acres of Grading (Grading Phase): 75
Acres of Paving: 10.83

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3869	0.0000	6.3869	3.3496	0.0000	3.3496			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**6.3869**	**1.9853**	**8.3723**	**3.3496**	**1.8265**	**5.1761**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.4400e-003	0.2752	0.0586	7.5000e-004	0.0192	5.4000e-004	0.0198	5.5300e-003	5.2000e-004	6.0500e-003		78.8920	78.8920	6.5300e-003		79.0553
Worker	0.0931	0.0559	0.5969	1.9200e-003	0.2236	1.3200e-003	0.2249	0.0593	1.2100e-003	0.0605		191.0387	191.0387	4.4100e-003		191.1491
Total	**0.1005**	**0.3311**	**0.6555**	**2.6700e-003**	**0.2428**	**1.8600e-003**	**0.2446**	**0.0648**	**1.7300e-003**	**0.0666**		**269.9307**	**269.9307**	**0.0109**		**270.2044**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4909	0.0000	2.4909	1.3064	0.0000	1.3064			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**2.4909**	**1.9853**	**4.4763**	**1.3064**	**1.8265**	**3.1329**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.4400e-003	0.2752	0.0586	7.5000e-004	0.0192	5.4000e-004	0.0198	5.5300e-003	5.2000e-004	6.0500e-003		78.8920	78.8920	6.5300e-003		79.0553
Worker	0.0931	0.0559	0.5969	1.9200e-003	0.2236	1.3200e-003	0.2249	0.0593	1.2100e-003	0.0605		191.0387	191.0387	4.4100e-003		191.1491
Total	**0.1005**	**0.3311**	**0.6555**	**2.6700e-003**	**0.2428**	**1.8600e-003**	**0.2446**	**0.0648**	**1.7300e-003**	**0.0666**		**269.9307**	**269.9307**	**0.0109**		**270.2044**

3.2 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3869	0.0000	6.3869	3.3496	0.0000	3.3496			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**6.3869**	**1.6349**	**8.0218**	**3.3496**	**1.5041**	**4.8537**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.9500e-003	0.2593	0.0547	7.4000e-004	0.0192	4.6000e-004	0.0197	5.5300e-003	4.4000e-004	5.9700e-003		78.2031	78.2031	6.2000e-003		78.3580
Worker	0.0873	0.0503	0.5497	1.8500e-003	0.2236	1.2800e-003	0.2248	0.0593	1.1800e-003	0.0605		184.0678	184.0678	3.9700e-003		184.1670
Total	**0.0942**	**0.3096**	**0.6044**	**2.5900e-003**	**0.2428**	**1.7400e-003**	**0.2445**	**0.0648**	**1.6200e-003**	**0.0664**		**262.2709**	**262.2709**	**0.0102**		**262.5250**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4909	0.0000	2.4909	1.3064	0.0000	1.3064			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**2.4909**	**1.6349**	**4.1258**	**1.3064**	**1.5041**	**2.8105**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.9500e-003	0.2593	0.0547	7.4000e-004	0.0192	4.6000e-004	0.0197	5.5300e-003	4.4000e-004	5.9700e-003		78.2031	78.2031	6.2000e-003		78.3580
Worker	0.0873	0.0503	0.5497	1.8500e-003	0.2236	1.2800e-003	0.2248	0.0593	1.1800e-003	0.0605		184.0678	184.0678	3.9700e-003		184.1670
Total	**0.0942**	**0.3096**	**0.6044**	**2.5900e-003**	**0.2428**	**1.7400e-003**	**0.2445**	**0.0648**	**1.6200e-003**	**0.0664**		**262.2709**	**262.2709**	**0.0102**		**262.5250**

3.3 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3143	13.2873	14.9616	0.0235		0.6920	0.6920		0.6378	0.6378		2,257.7272	2,257.7272	0.7191		2,275.7047
Paving	0.0434					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3577**	**13.2873**	**14.9616**	**0.0235**		**0.6920**	**0.6920**		**0.6378**	**0.6378**		**2,257.7272**	**2,257.7272**	**0.7191**		**2,275.7047**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	9.9200e-003	0.3670	0.0781	1.0000e-003	0.0256	7.3000e-004	0.0263	7.3700e-003	6.9000e-004	8.0700e-003		105.1893	105.1893	8.7100e-003		105.4071
Worker	0.0838	0.0503	0.5372	1.7200e-003	0.2012	1.1900e-003	0.2024	0.0534	1.0900e-003	0.0545		171.9348	171.9348	3.9700e-003		172.0342
Total	**0.0937**	**0.4173**	**0.6153**	**2.7200e-003**	**0.2268**	**1.9200e-003**	**0.2287**	**0.0607**	**1.7800e-003**	**0.0625**		**277.1241**	**277.1241**	**0.0127**		**277.4413**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3143	13.2873	14.9616	0.0235		0.6920	0.6920		0.6378	0.6378	0.0000	2,257.7272	2,257.7272	0.7191		2,275.7047
Paving	0.0434					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3577**	**13.2873**	**14.9616**	**0.0235**		**0.6920**	**0.6920**		**0.6378**	**0.6378**	**0.0000**	**2,257.7272**	**2,257.7272**	**0.7191**		**2,275.7047**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	9.9200e-003	0.3670	0.0781	1.0000e-003	0.0256	7.3000e-004	0.0263	7.3700e-003	6.9000e-004	8.0700e-003		105.1893	105.1893	8.7100e-003		105.4071
Worker	0.0838	0.0503	0.5372	1.7200e-003	0.2012	1.1900e-003	0.2024	0.0534	1.0900e-003	0.0545		171.9348	171.9348	3.9700e-003		172.0342
Total	**0.0937**	**0.4173**	**0.6153**	**2.7200e-003**	**0.2268**	**1.9200e-003**	**0.2287**	**0.0607**	**1.7800e-003**	**0.0625**		**277.1241**	**277.1241**	**0.0127**		**277.4413**

3.3 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1616	11.4931	14.8889	0.0235		0.5822	0.5822		0.5368	0.5368		2,258.1766	2,258.1766	0.7193		2,276.1578
Paving	0.0434					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2050**	**11.4931**	**14.8889**	**0.0235**		**0.5822**	**0.5822**		**0.5368**	**0.5368**		**2,258.1766**	**2,258.1766**	**0.7193**		**2,276.1578**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	9.2600e-003	0.3457	0.0729	9.9000e-004	0.0256	6.1000e-004	0.0262	7.3700e-003	5.8000e-004	7.9600e-003		104.2709	104.2709	8.2600e-003		104.4774
Worker	0.0786	0.0452	0.4947	1.6600e-003	0.2012	1.1500e-003	0.2024	0.0534	1.0600e-003	0.0544		165.6610	165.6610	3.5700e-003		165.7503
Total	**0.0878**	**0.3910**	**0.5677**	**2.6500e-003**	**0.2268**	**1.7600e-003**	**0.2286**	**0.0607**	**1.6400e-003**	**0.0624**		**269.9319**	**269.9319**	**0.0118**		**270.2277**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1616	11.4931	14.8889	0.0235		0.5822	0.5822		0.5368	0.5368	0.0000	2,258.1766	2,258.1766	0.7193		2,276.1578
Paving	0.0434					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2050**	**11.4931**	**14.8889**	**0.0235**		**0.5822**	**0.5822**		**0.5368**	**0.5368**	**0.0000**	**2,258.1766**	**2,258.1766**	**0.7193**		**2,276.1578**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	9.2600e-003	0.3457	0.0729	9.9000e-004	0.0256	6.1000e-004	0.0262	7.3700e-003	5.8000e-004	7.9600e-003		104.2709	104.2709	8.2600e-003		104.4774
Worker	0.0786	0.0452	0.4947	1.6600e-003	0.2012	1.1500e-003	0.2024	0.0534	1.0600e-003	0.0544		165.6610	165.6610	3.5700e-003		165.7503
Total	**0.0878**	**0.3910**	**0.5677**	**2.6500e-003**	**0.2268**	**1.7600e-003**	**0.2286**	**0.0607**	**1.6400e-003**	**0.0624**		**269.9319**	**269.9319**	**0.0118**		**270.2277**

CalEEMod Version: CalEEMod.2016.3.2

Date: 10/12/2018 11:49 AM

Perris Valley Storm Drain Trail Phase 2 - Riverside-South Coast County, Annual

Perris Valley Storm Drain Trail Phase 2

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	3.61	Acre	3.61	157,251.60	0
Other Non-Asphalt Surfaces	7.22	Acre	7.22	314,503.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Per City

Off-road Equipment -

Off-road Equipment - Per City

Trips and VMT - 3 water truck and 4 material delivery truck trips per day

Construction Off-road Equipment Mitigation - water site 3x daily per rule 403

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	218.00
tblConstructionPhase	NumDays	20.00	218.00
tblGrading	AcresOfGrading	545.00	75.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.5643	5.9543	4.6454	8.9700e-003	0.6784	0.2641	0.9425	0.3425	0.2431	0.5856	0.0000	788.6123	788.6123	0.2399	0.0000	794.6103
2022	0.0525	0.5360	0.4741	9.6000e-004	0.1079	0.0233	0.1312	0.0404	0.0215	0.0618	0.0000	83.9663	83.9663	0.0256	0.0000	84.6057
Maximum	**0.5643**	**5.9543**	**4.6454**	**8.9700e-003**	**0.6784**	**0.2641**	**0.9425**	**0.3425**	**0.2431**	**0.5856**	**0.0000**	**788.6123**	**788.6123**	**0.2399**	**0.0000**	**794.6103**

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					
2021	0.5643	5.9543	4.6454	8.9700e-003	0.2923	0.2641	0.5564	0.1410	0.2431	0.3841	0.0000	788.6115	788.6115	0.2399	0.0000	794.6094
2022	0.0525	0.5360	0.4741	9.6000e-004	0.0450	0.0233	0.0683	0.0165	0.0215	0.0380	0.0000	83.9662	83.9662	0.0256	0.0000	84.6056
Maximum	**0.5643**	**5.9543**	**4.6454**	**8.9700e-003**	**0.2923**	**0.2641**	**0.5564**	**0.1410**	**0.2431**	**0.3841**	**0.0000**	**788.6115**	**788.6115**	**0.2399**	**0.0000**	**794.6094**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**57.09**	**0.00**	**41.81**	**58.85**	**0.00**	**34.80**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-1-2021	6-30-2021	2.1509	2.1509
2	7-1-2021	9-30-2021	2.1746	2.1746
3	10-1-2021	12-31-2021	2.1744	2.1744
4	1-1-2022	3-31-2022	0.6205	0.6205
		Highest	2.1746	2.1746

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	4/1/2021	1/31/2022	5	218	
2	Paving	Paving	4/1/2021	1/31/2022	5	218	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 10.83

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6329	0.0000	0.6329	0.3304	0.0000	0.3304	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4128	4.5704	3.0415	6.1100e-003		0.1956	0.1956		0.1799	0.1799	0.0000	536.7756	536.7756	0.1736	0.0000	541.1157
Total	**0.4128**	**4.5704**	**3.0415**	**6.1100e-003**	**0.6329**	**0.1956**	**0.8285**	**0.3304**	**0.1799**	**0.5103**	**0.0000**	**536.7756**	**536.7756**	**0.1736**	**0.0000**	**541.1157**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.1000e-004	0.0276	5.3000e-003	8.0000e-005	1.8700e-003	5.0000e-005	1.9200e-003	5.4000e-004	5.0000e-005	5.9000e-004	0.0000	7.2094	7.2094	5.5000e-004	0.0000	7.2232
Worker	8.4500e-003	5.6900e-003	0.0620	1.9000e-004	0.0217	1.3000e-004	0.0218	5.7500e-003	1.2000e-004	5.8700e-003	0.0000	17.5103	17.5103	4.1000e-004	0.0000	17.5205
Total	**9.1600e-003**	**0.0332**	**0.0673**	**2.7000e-004**	**0.0235**	**1.8000e-004**	**0.0237**	**6.2900e-003**	**1.7000e-004**	**6.4600e-003**	**0.0000**	**24.7197**	**24.7197**	**9.6000e-004**	**0.0000**	**24.7436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					0.2469	0.0000	0.2469	0.1288	0.0000	0.1288	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4128	4.5704	3.0415	6.1100e-003		0.1956	0.1956		0.1799	0.1799	0.0000	536.7749	536.7749	0.1736	0.0000	541.1150
Total	**0.4128**	**4.5704**	**3.0415**	**6.1100e-003**	**0.2469**	**0.1956**	**0.4424**	**0.1288**	**0.1799**	**0.3088**	**0.0000**	**536.7749**	**536.7749**	**0.1736**	**0.0000**	**541.1150**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.1000e-004	0.0276	5.3000e-003	8.0000e-005	1.8700e-003	5.0000e-005	1.9200e-003	5.4000e-004	5.0000e-005	5.9000e-004	0.0000	7.2094	7.2094	5.5000e-004	0.0000	7.2232
Worker	8.4500e-003	5.6900e-003	0.0620	1.9000e-004	0.0217	1.3000e-004	0.0218	5.7500e-003	1.2000e-004	5.8700e-003	0.0000	17.5103	17.5103	4.1000e-004	0.0000	17.5205
Total	**9.1600e-003**	**0.0332**	**0.0673**	**2.7000e-004**	**0.0235**	**1.8000e-004**	**0.0237**	**6.2900e-003**	**1.7000e-004**	**6.4600e-003**	**0.0000**	**24.7197**	**24.7197**	**9.6000e-004**	**0.0000**	**24.7436**

3.2 Grading - 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					
Fugitive Dust					0.1030	0.0000	0.1030	0.0391	0.0000	0.0391	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0381	0.4079	0.3049	6.5000e-004		0.0172	0.0172		0.0158	0.0158	0.0000	57.2613	57.2613	0.0185	0.0000	57.7243
Total	**0.0381**	**0.4079**	**0.3049**	**6.5000e-004**	**0.1030**	**0.0172**	**0.1202**	**0.0391**	**0.0158**	**0.0548**	**0.0000**	**57.2613**	**57.2613**	**0.0185**	**0.0000**	**57.7243**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	2.7700e-003	5.3000e-004	1.0000e-005	2.0000e-004	0.0000	2.0000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.7619	0.7619	6.0000e-005	0.0000	0.7633
Worker	8.4000e-004	5.5000e-004	6.0900e-003	2.0000e-005	2.3100e-003	1.0000e-005	2.3200e-003	6.1000e-004	1.0000e-005	6.3000e-004	0.0000	1.7985	1.7985	4.0000e-005	0.0000	1.7994
Total	**9.1000e-004**	**3.3200e-003**	**6.6200e-003**	**3.0000e-005**	**2.5100e-003**	**1.0000e-005**	**2.5200e-003**	**6.7000e-004**	**1.0000e-005**	**6.9000e-004**	**0.0000**	**2.5604**	**2.5604**	**1.0000e-004**	**0.0000**	**2.5627**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0402	0.0000	0.0402	0.0152	0.0000	0.0152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0381	0.4079	0.3049	6.5000e-004		0.0172	0.0172		0.0158	0.0158	0.0000	57.2613	57.2613	0.0185	0.0000	57.7243
Total	**0.0381**	**0.4079**	**0.3049**	**6.5000e-004**	**0.0402**	**0.0172**	**0.0573**	**0.0152**	**0.0158**	**0.0310**	**0.0000**	**57.2613**	**57.2613**	**0.0185**	**0.0000**	**57.7243**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	2.7700e-003	5.3000e-004	1.0000e-005	2.0000e-004	0.0000	2.0000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.7619	0.7619	6.0000e-005	0.0000	0.7633
Worker	8.4000e-004	5.5000e-004	6.0900e-003	2.0000e-005	2.3100e-003	1.0000e-005	2.3200e-003	6.1000e-004	1.0000e-005	6.3000e-004	0.0000	1.7985	1.7985	4.0000e-005	0.0000	1.7994
Total	**9.1000e-004**	**3.3200e-003**	**6.6200e-003**	**3.0000e-005**	**2.5100e-003**	**1.0000e-005**	**2.5200e-003**	**6.7000e-004**	**1.0000e-005**	**6.9000e-004**	**0.0000**	**2.5604**	**2.5604**	**1.0000e-004**	**0.0000**	**2.5627**

3.3 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1295	1.3088	1.4737	2.3200e-003		0.0682	0.0682		0.0628	0.0628	0.0000	201.7453	201.7453	0.0643	0.0000	203.3517
Paving	4.2700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1337**	**1.3088**	**1.4737**	**2.3200e-003**		**0.0682**	**0.0682**		**0.0628**	**0.0628**	**0.0000**	**201.7453**	**201.7453**	**0.0643**	**0.0000**	**203.3517**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.4000e-004	0.0367	7.0700e-003	1.0000e-004	2.4900e-003	7.0000e-005	2.5600e-003	7.2000e-004	7.0000e-005	7.9000e-004	0.0000	9.6125	9.6125	7.3000e-004	0.0000	9.6309
Worker	7.6000e-003	5.1200e-003	0.0558	1.7000e-004	0.0195	1.2000e-004	0.0196	5.1700e-003	1.1000e-004	5.2800e-003	0.0000	15.7593	15.7593	3.7000e-004	0.0000	15.7684
Total	**8.5400e-003**	**0.0419**	**0.0629**	**2.7000e-004**	**0.0220**	**1.9000e-004**	**0.0222**	**5.8900e-003**	**1.8000e-004**	**6.0700e-003**	**0.0000**	**25.3718**	**25.3718**	**1.1000e-003**	**0.0000**	**25.3993**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1295	1.3088	1.4737	2.3200e-003		0.0682	0.0682		0.0628	0.0628	0.0000	201.7451	201.7451	0.0643	0.0000	203.3515
Paving	4.2700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1337**	**1.3088**	**1.4737**	**2.3200e-003**		**0.0682**	**0.0682**		**0.0628**	**0.0628**	**0.0000**	**201.7451**	**201.7451**	**0.0643**	**0.0000**	**203.3515**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.4000e-004	0.0367	7.0700e-003	1.0000e-004	2.4900e-003	7.0000e-005	2.5600e-003	7.2000e-004	7.0000e-005	7.9000e-004	0.0000	9.6125	9.6125	7.3000e-004	0.0000	9.6309
Worker	7.6000e-003	5.1200e-003	0.0558	1.7000e-004	0.0195	1.2000e-004	0.0196	5.1700e-003	1.1000e-004	5.2800e-003	0.0000	15.7593	15.7593	3.7000e-004	0.0000	15.7684
Total	**8.5400e-003**	**0.0419**	**0.0629**	**2.7000e-004**	**0.0220**	**1.9000e-004**	**0.0222**	**5.8900e-003**	**1.8000e-004**	**6.0700e-003**	**0.0000**	**25.3718**	**25.3718**	**1.1000e-003**	**0.0000**	**25.3993**

3.3 Paving - 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	0.0122	0.1207	0.1563	2.5000e-004		6.1100e-003	6.1100e-003		5.6400e-003	5.6400e-003	0.0000	21.5101	21.5101	6.8500e-003	0.0000	21.6814
Paving	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0127**	**0.1207**	**0.1563**	**2.5000e-004**		**6.1100e-003**	**6.1100e-003**		**5.6400e-003**	**5.6400e-003**	**0.0000**	**21.5101**	**21.5101**	**6.8500e-003**	**0.0000**	**21.6814**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.0000e-005	3.6900e-003	7.0000e-004	1.0000e-005	2.7000e-004	1.0000e-005	2.7000e-004	8.0000e-005	1.0000e-005	8.0000e-005	0.0000	1.0159	1.0159	7.0000e-005	0.0000	1.0177
Worker	7.6000e-004	4.9000e-004	5.4800e-003	2.0000e-005	2.0800e-003	1.0000e-005	2.0900e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.6186	1.6186	4.0000e-005	0.0000	1.6195
Total	**8.5000e-004**	**4.1800e-003**	**6.1800e-003**	**3.0000e-005**	**2.3500e-003**	**2.0000e-005**	**2.3600e-003**	**6.3000e-004**	**2.0000e-005**	**6.4000e-004**	**0.0000**	**2.6345**	**2.6345**	**1.1000e-004**	**0.0000**	**2.6372**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0122	0.1207	0.1563	2.5000e-004		6.1100e-003	6.1100e-003		5.6400e-003	5.6400e-003	0.0000	21.5101	21.5101	6.8500e-003	0.0000	21.6814
Paving	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0127**	**0.1207**	**0.1563**	**2.5000e-004**		**6.1100e-003**	**6.1100e-003**		**5.6400e-003**	**5.6400e-003**	**0.0000**	**21.5101**	**21.5101**	**6.8500e-003**	**0.0000**	**21.6814**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.0000e-005	3.6900e-003	7.0000e-004	1.0000e-005	2.7000e-004	1.0000e-005	2.7000e-004	8.0000e-005	1.0000e-005	8.0000e-005	0.0000	1.0159	1.0159	7.0000e-005	0.0000	1.0177
Worker	7.6000e-004	4.9000e-004	5.4800e-003	2.0000e-005	2.0800e-003	1.0000e-005	2.0900e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.6186	1.6186	4.0000e-005	0.0000	1.6195
Total	**8.5000e-004**	**4.1800e-003**	**6.1800e-003**	**3.0000e-005**	**2.3500e-003**	**2.0000e-005**	**2.3600e-003**	**6.3000e-004**	**2.0000e-005**	**6.4000e-004**	**0.0000**	**2.6345**	**2.6345**	**1.1000e-004**	**0.0000**	**2.6372**

Localized Significance Thresholds Calculations

SCAQMD LINEAR REGRESSION METHOD*
SRA 24 - 1 Acre Site

CO

X-value Distance (meters)	y-value LST (mass/day)
25	602
50	887
38	***750***

NO_X

X-value Distance (meters)	y-value LST (mass/day)
25	118
50	148
38	***134***

PM-10 LST

X-value Distance (meters)	y-value LST (mass/day)
25	4
50	12
38	***8***

PM-2.5

X-value Distance (meters)	y-value LST (mass/day)
25	3
50	4
38	***4***

* Excel formula obtained from Appendix K of LST Methodology.
Distances and corresponding LST values obtained from Appendix C of LST methodology
Value calculated shown in bold