

Draft Analysis of Impacts to Air Quality
and from Greenhouse Gas Emissions
Valley Ranch Unit 4 Commercial
Development

Williams, California

November 10, 2021

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SECTION 1: INTRODUCTION

Environmental Permitting Specialists (EPS) has been retained by the City of Williams (Colusa County) California to evaluate impacts to air quality and greenhouse gas from a proposed commercial development. This analysis has been prepared in support of an environmental review being conducted by the Planning Department at the City of Williams.

The project, known as, Valley Ranch Unit 4, would be located on an approximately 17.3 acre site located at the Southeast corner of I-5 and E street in the City of Williams. It has been assigned an Assessor's Parcel Numbers 005-270-026 and 005-270-028. The project consists of a general retail store, an automobile specialty store, general offices and a hotel. Figures 1 and 2 illustrate the project location and site map respectively.

The proposed project will be developed over the next ten years with full buildout tentatively expected in 2031. Construction is expected to begin in 2022 with full occupancy sometime in 2031.

The objective of the proposed analysis is to evaluate two categories of impacts associated with the construction and operation (occupancy) phases of this Project:

1. Air Quality Impacts
2. Impacts from GHG Emissions

The overall approach used in this analysis is to quantify the emission rates of regulated air pollutants for the construction and occupancy phases and then compare the emission rates with thresholds of significance established by the Colusa County Air Pollution Control District (CCAPCD). The project is considered to have potentially significant environmental impact if any of the annual emission rates exceed the thresholds of significance established by CCAPCD.

This report is divided into 6 sections. Immediately following this Introduction, the projects metrics are described in Section 2. Next, the methodology for calculating air quality and GHG emissions is discussed in Section 3. The Project impacts are discussed in Section 4. The report concludes with a discussion of the significance of the project's impacts on air quality and GHG (Section 5). References, technical details and calculations are provided in Section 6 and in the Appendix respectively.

Figure 1-1 Vicinity Map Showing Project Location

Source: City of Williams

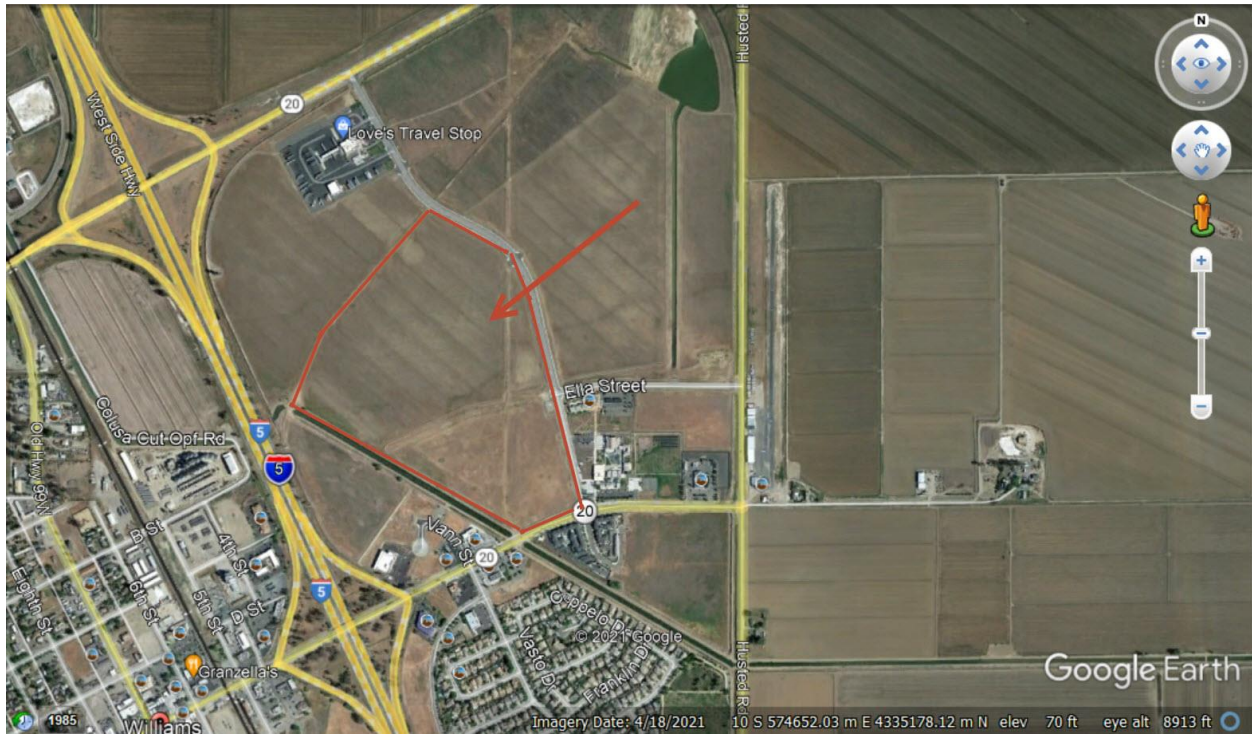
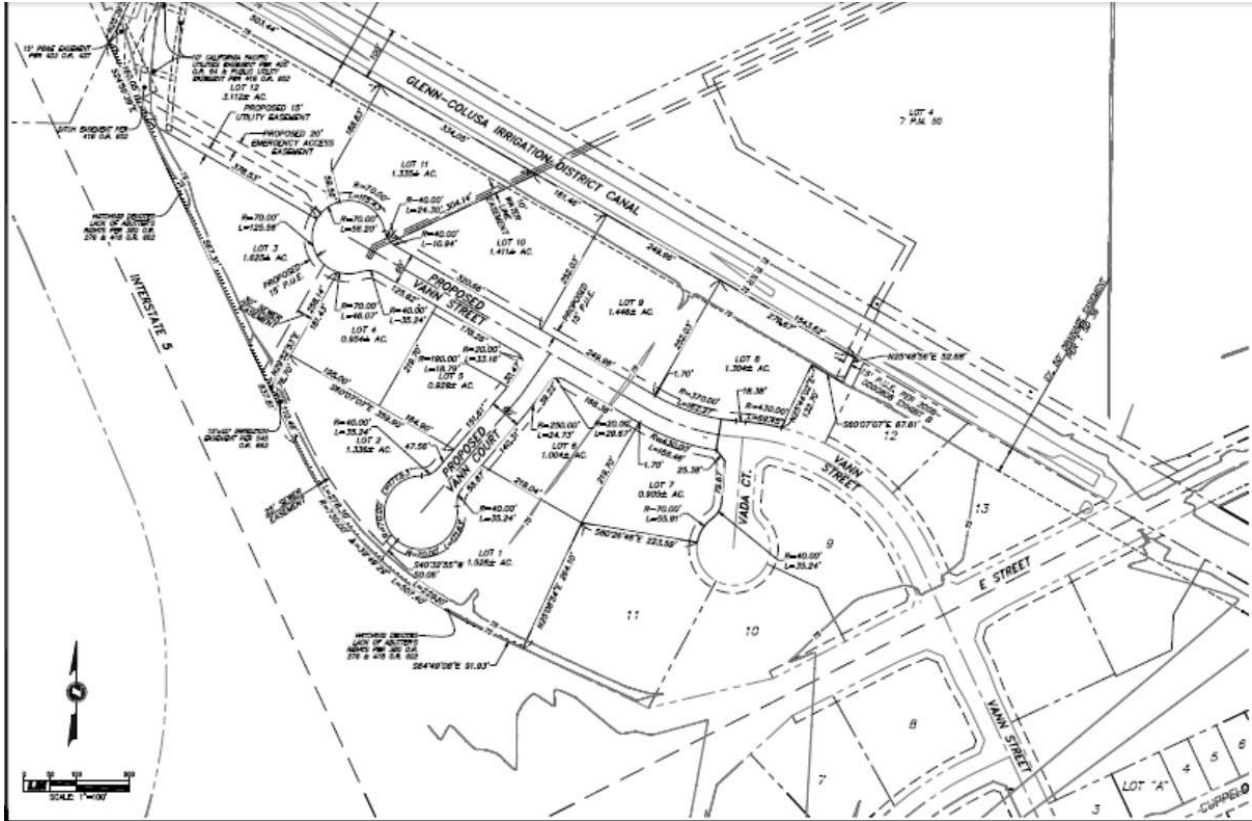


Figure 1-2 Site Map

Source: City of Williams



SECTION 2: PROJECT DETAILS

As noted in the Introduction, the proposed commercial project would consist of retail, hotel, offices and specialty shops. Specific details are as follows:

Table 2-1 Project Metrics	
General Retail Stores	68,570 sq feet
Automobile Specialty Shops	13,272 sq feet
Offices	34,284 sq feet
Hotel	52,904 sq feet
Total	169,030 sq feet

Construction is expected to begin sometime in 2022, however, detailed construction schedule has not been finalized. The final construction and occupancy depend on market conditions and other factors. As a result, it is not possible to define an exact development scenario. EPS collaborated with Colusa County Planning staff and determined that an even growth scenario would be the most appropriate scenario for evaluating impacts.

Using an even growth scenario, impacts from construction of the entire project are assumed to occur over three years and the emissions are distributed over 10 years. To ensure construction related emissions are not underestimated, this analysis reports maximum annual emissions over the 3 year and 10 year construction schedule. Table 2-1 summarizes all the project metrics used to calculate emissions for the period 2022 to 2024.

Phase	Details	Comments
Construction	Start Date	January 1, 2022
	End Date	December 31, 2024
	Lot Area	19 acres
	Construction Related Traffic	Default Values
Operational Per Unit Residence	Start Date	January 1, 2023
	Average Daily Traffic	11,142
	Trip Length	Default Values
	Energy Usage (Electricity)	Use Cal EEMod Recommended Default Values
	Energy Usage (Natural Gas)	
	Water Usage Per Unit	
Solid Waste Per Unit		
<p>Note 1. Based on recommended default value for commercial development Ref: CalEEMod emissions model version 2016.3.2. Available at: http://caleemod.com/</p> <p>Note 2. The trip length is conservatively estimated to equal 5 miles. Actual trip length is expected to be less than half of this value since the town of Williams is only 4.95 square miles. The distances from the center to the outskirts of the town is 0.9 mile.</p>		

SECTION 3: CALCULATION METHODOLOGY

The construction and operation of the proposed housing development would release a variety of air pollutants, including GHG emissions. Project impacts are directly related to short-term and long-term emissions of these pollutants. This section identifies these pollutants and describes how they were be quantified.

3.1 Emissions of Criteria Air Pollutants

Criteria air pollutants refers to those pollutants for which the state and/or the federal government has established ambient (outside) air quality standards. The following criteria air pollutants will be quantified for the current project:

- Oxides of Nitrogen (NO_x)
- Reactive Organic Compounds (ROG)
- Particulate Matter (PM-10)
- Fine Particulate Matter (PM-2.5)
- Carbon Monoxide
- Sulfur Dioxide (SO₂)

The maximum daily emission rates of each of these air pollutants will be quantified using Version 2020.4.0 of This model quantifies direct emissions from construction and operational phases. The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California Air Districts.

3.2 Emissions of GHG

Greenhouse gases refer to a variety of gases such as carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons, and others. The current analysis is limited to emissions of CO₂, N₂O and CH₄ only. The project will not emit hydrofluorocarbons or other known greenhouse gases. GHG emissions will be reported in terms of annual metric tons of carbon dioxide equivalents [MT CO₂ (e)].

As with criteria air pollutants, Version 2020.4.0 of the CalEEMod emissions model will be used to calculate annual GHG emissions in terms of CO₂(e). These emissions would be released during both the construction and operational phases.

3.3 Emissions of Toxic Air Emissions

Toxic air pollutants refer to those air pollutants for which ambient air quality standards have not been established. There would be trace amounts of diesel exhaust particulate matter (DPM) released during the construction phase from various equipment during the site

preparation/grading phases. Since, DPM is regulated as carcinogen, risk from exposure to DPM is evaluated. There are no on-site sources of toxic air contaminants, therefore emissions of TACs during the occupancy phase are considered negligible.

SECTION 4: PROJECT IMPACTS

This section discusses the air quality, GHG and public health impacts associated with the Project. The significance of the impacts is discussed in Section 5.

4.1 Impacts to Air Quality

Impacts to air quality were determined by calculating the maximum annual emission rate of each the criteria air pollutant using the CalEEMod emissions model. The results are summarized in Table 4-1 and 4-2 for the constructional and occupancy phases respectively.

Table 4-1
Summary of Maximum Annual Emissions – Construction Phase
(in tons/year)

	ROG	NOx	CO	S02	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Year	tons/yr									
2022	0.1578	1.3657	1.2847	3.3000e-003	0.2828	0.0562	0.3390	0.1156	0.0525	0.1681
2023	0.0658	0.5304	0.5977	1.8300e-003	0.0796	0.0175	0.0971	0.0217	0.0166	0.0382
2024	3.7462	0.1992	0.3474	6.2000e-004	0.0181	9.7200e-003	0.0278	4.8000e-003	9.1100e-003	0.0139
Maximum	3.7462	1.3657	1.2847	3.3000e-003	0.2828	0.0562	0.3390	0.1156	0.0525	0.1681

Table 4-2
Summary of Maximum Annual Emissions – Operation (Occupancy) Phase
(in tons per year)

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	tons/yr									
Area	1.6250	2.0000e-005	2.3400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005
Energy	0.0356	0.3235	0.2717	1.9400e-003		0.0246	0.0246		0.0246	0.0246
Mobile	1.2983	1.7144	10.5849	0.0228	2.6976	0.0185	2.7160	0.7205	0.0173	0.7378
Waste						0.0000	0.0000		0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000
Total	2.9589	2.0379	10.8590	0.0247	2.6976	0.0431	2.7406	0.7205	0.0419	0.7624

4.2 Impacts from GHG Emissions

Annual GHG emissions for the operational phase are summary in Table 4-3. Annual emissions are estimated to equal 2,876.78 metric tons per year. GHG emissions are typically not evaluated for short-term activities, such as construction.

Table 4-3
Summary of Maximum Annual GHG Emissions – Operational Phase
 (in metric tons/year)

	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	MT/yr					
Area	0.0000	4.5800e-003	4.5800e-003	1.0000e-005	0.0000	4.8700e-003
Energy	0.0000	582.9608	582.9608	0.0441	0.0110	587.3358
Mobile	0.0000	2,103.1003	2,103.1003	0.1240	0.1191	2,141.6967
Waste	46.6636	0.0000	46.6636	2.7577	0.0000	115.6070
Water	5.0235	10.4806	15.5040	0.5177	0.0124	32.1371
Total	51.6870	2,696.5463	2,748.2333	3.4435	0.1425	2,876.7814

The City of Williams has not formally established any thresholds of significance for GHG emissions. Instead, the City has relied on thresholds used to identify significant sources of GHG emissions in the State’s Cap and Trade program [Title 17, Section 95812(c)(1)]. This threshold is set at 25,000 metric tons per year.

California Air Resources Board (CARB) acknowledged that the 25,000 MT/year threshold is used for the mandatory reporting for the Cap and Trade program and not established as a CEQA threshold for GHG emissions. However, the California Air Pollution Control Officers Association (CAPCOA) identified 25,000 MT/yr as a threshold in their January 2008 report *“CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Air Quality Act”*

The issue of threshold of significance has also been reviewed by the Environmental Protection Agency (EPA). The EPA analyzed several thresholds for reporting and rejected lower thresholds of 1,000 and 10,000 metric tons/yr finding that these thresholds would greatly increase the number of covered entities without capturing a significant portion of GHG emissions (EPA 2009). The 25,000 MT/yr threshold would capture 94% of GHG emissions from stationary sources in California (CAPCOA 2008, Page 44).

Given the volume of research and resources that have been expended to develop the CARB reporting and the Cap and Trade regulations and the Federal (EPA) GHG reporting rule, the City of Williams has determined that the 25,000 MT/yr threshold is an appropriate threshold of significance to the proposed project.

On this basis, the emissions of greenhouse gases associated with this project are considered insignificant.

4.3 Impacts from Toxic Air Emissions

Toxic air pollutants refer to those air pollutants for which ambient air quality standards have not been established. The proposed housing development is not considered a source of toxic air. There would be trace amounts of diesel exhaust particulate matter released during the construction phase from various equipment during the site preparation/grading phases. The average annual emission rate of diesel particulate matter (represented by exhaust PM-2.5) is estimated to equal 0.02607 tons/year (52.14 lbs/year).

The cancer risk score at homes located to the South along Cuppelo Drive is estimated to equal 4.82 which is considered medium risk. The cancer risk score is a conservative estimate of probable cancer risk from exposure to diesel particulate during the construction phase. A copy of the risk prioritization is provided in Appendix B.

There are no on-site sources of toxic air contaminants, therefore cancer risk is considered negligible during the occupancy phase.

SECTION 5: SIGNIFICANCE OF PROJECT IMPACTS

The results of the current analysis for criteria air pollutants are compared with mass emission thresholds established by CCAPCDD.

The City of Williams has not formally established any thresholds of significance for GHG emissions. Instead, the City has relied on thresholds used to identify significant sources of GHG emissions in the State's Cap and Trade program [Title 17, Section 95812(c)(1)]. This threshold is set at 25,000 metric tons per year.

California Air Resources Board (CARB) acknowledged that the 25,000 MT/year threshold is used for the mandatory reporting for the Cap and Trade program and not established as a CEQA threshold for GHG emissions. However, the California Air Pollution Control Officers Association (CAPCOA) identified 25,000 MT/yr as a threshold in their January 2008 report *"CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Air Quality Act"*

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Given the volume of research and resources that have been expended to develop the CARB reporting and the Cap and Trade regulations and the Federal (EPA) GHG reporting rule, the City of Williams has determined that the 25,000 MT/yr threshold is an appropriate threshold of significance to the proposed project.

The significance of project impacts for the construction and operational phases is summarized in Table 5-1.

Table 5-1 Summary of Project Level Air Quality and GHG Impacts (tons/year)					
Pollutant	Construction Phase	Operational Phase (2031)		Significance Threshold	Significant?
NOx	1.36	2.04		25	No
VOC	3.74	2.96		25	No
PM-10	0.34	2.74		25	No
PM-2.5	0.17	0.76		25	No
GHG (Mt/yr)	302.95	2,876.7		25,000	No

Use of an even growth development assumption project impacts would be less than significant for criteria and GHG emissions. If the final buildout is delayed beyond 2031, the impacts would be lower than the estimates presented in Table 5-1. This is because emissions from vehicles and construction equipment typically decline in future years in response to more stringent standards for construction equipment and automobiles. Typically, emissions decline 2% to 5% annually.

SECTION 6: REFERENCES

CAPCOA (2008): CEQA and Climate Change. California Air Pollution Control Officers Association, January 2008. Available at: <http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf>

CalEEMod (2020): California Emissions Estimator Model. Information available at: <http://www.caleemod.com/>

CCAPCD (2021): Colusa County Air Pollution Control District Rules and Regulations. Available at: <https://www.countyofcolusa.org/836/Rules-and-Regulations>

W-Trans (2021) Transportation Impact Study for the Valley Ranch 4 Commercial Development, November 8, 2021.

APPENDIX A

Calculation of Emissions from Construction and Operational Phases

APPENDIX B

Calculation of Risk Prioritization Construction Phase

APPENDIX A

Calculation of Emissions from Construction and Operational Phases

Unit 4 Commercial Development - Colusa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**Unit 4 Commercial Development
Colusa County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	143.00	Room	4.77	207,636.00	0
General Office Building	34.30	1000sqft	0.79	34,300.00	0
Automobile Care Center	13.30	1000sqft	0.31	13,300.00	0
Regional Shopping Center	65.60	1000sqft	1.51	65,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	56
Climate Zone	3			Operational Year	2031
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - Per project specs
- Construction Phase - Per
- Vehicle Trips - Per traffic study
- Off-road Equipment - Per project specs
- Off-road Equipment - Per project specs
- Off-road Equipment - Per project specs
- Off-road Equipment - Per project specs

Unit 4 Commercial Development - Colusa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-road Equipment - Per project specs

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	105.00
tblConstructionPhase	NumDays	230.00	273.00
tblConstructionPhase	NumDays	20.00	93.00
tblConstructionPhase	NumDays	20.00	128.00
tblConstructionPhase	NumDays	10.00	93.00
tblConstructionPhase	PhaseEndDate	2/24/2023	6/23/2024
tblConstructionPhase	PhaseEndDate	12/30/2022	6/18/2023
tblConstructionPhase	PhaseEndDate	2/11/2022	5/11/2022
tblConstructionPhase	PhaseEndDate	1/27/2023	6/26/2024
tblConstructionPhase	PhaseEndDate	1/14/2022	5/11/2022
tblConstructionPhase	PhaseStartDate	1/28/2023	1/28/2024
tblConstructionPhase	PhaseStartDate	2/12/2022	6/1/2022
tblConstructionPhase	PhaseStartDate	1/15/2022	1/1/2022
tblConstructionPhase	PhaseStartDate	12/31/2022	1/1/2024
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00

2.0 Emissions Summary

Unit 4 Commercial Development - Colusa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1578	1.3657	1.2847	3.3000e-003	0.2828	0.0562	0.3390	0.1156	0.0525	0.1681	0.0000	297.6320	297.6320	0.0415	0.0144	302.9500
2023	0.0658	0.5304	0.5977	1.8300e-003	0.0796	0.0175	0.0971	0.0217	0.0166	0.0382	0.0000	166.6254	166.6254	0.0139	0.0106	170.1205
2024	3.7462	0.1992	0.3474	6.2000e-004	0.0181	9.7200e-003	0.0278	4.8000e-003	9.1100e-003	0.0139	0.0000	54.8035	54.8035	0.0113	3.9000e-004	55.2008
Maximum	3.7462	1.3657	1.2847	3.3000e-003	0.2828	0.0562	0.3390	0.1156	0.0525	0.1681	0.0000	297.6320	297.6320	0.0415	0.0144	302.9500

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					
2022	0.1578	1.3657	1.2847	3.3000e-003	0.2828	0.0562	0.3390	0.1156	0.0525	0.1681	0.0000	297.6319	297.6319	0.0415	0.0144	302.9498
2023	0.0658	0.5304	0.5977	1.8300e-003	0.0796	0.0175	0.0971	0.0217	0.0166	0.0382	0.0000	166.6253	166.6253	0.0139	0.0106	170.1204
2024	3.7462	0.1992	0.3474	6.2000e-004	0.0181	9.7200e-003	0.0278	4.8000e-003	9.1100e-003	0.0139	0.0000	54.8034	54.8034	0.0113	3.9000e-004	55.2008
Maximum	3.7462	1.3657	1.2847	3.3000e-003	0.2828	0.0562	0.3390	0.1156	0.0525	0.1681	0.0000	297.6319	297.6319	0.0415	0.0144	302.9498

Unit 4 Commercial Development - Colusa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2022	3-31-2022	0.4660	0.4660
2	4-1-2022	6-30-2022	0.3301	0.3301
3	7-1-2022	9-30-2022	0.3611	0.3611
4	10-1-2022	12-31-2022	0.3689	0.3689
5	1-1-2023	3-31-2023	0.3229	0.3229
6	4-1-2023	6-30-2023	0.2776	0.2776
9	1-1-2024	3-31-2024	1.7305	1.7305
10	4-1-2024	6-30-2024	2.2402	2.2402
		Highest	2.2402	2.2402

Unit 4 Commercial Development - Colusa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.6250	2.0000e-005	2.3400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.5800e-003	4.5800e-003	1.0000e-005	0.0000	4.8700e-003
Energy	0.0356	0.3235	0.2717	1.9400e-003		0.0246	0.0246		0.0246	0.0246	0.0000	582.9608	582.9608	0.0441	0.0110	587.3358
Mobile	1.2983	1.7144	10.5849	0.0228	2.6976	0.0185	2.7160	0.7205	0.0173	0.7378	0.0000	2,103.1003	2,103.1003	0.1240	0.1191	2,141.6967
Waste						0.0000	0.0000		0.0000	0.0000	46.6636	0.0000	46.6636	2.7577	0.0000	115.6070
Water						0.0000	0.0000		0.0000	0.0000	5.0235	10.4806	15.5040	0.5177	0.0124	32.1371
Total	2.9589	2.0379	10.8590	0.0247	2.6976	0.0431	2.7406	0.7205	0.0419	0.7624	51.6870	2,696.5463	2,748.2333	3.4435	0.1425	2,876.7814

Unit 4 Commercial Development - Colusa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.6250	2.0000e-005	2.3400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.5800e-003	4.5800e-003	1.0000e-005	0.0000	4.8700e-003
Energy	0.0356	0.3235	0.2717	1.9400e-003		0.0246	0.0246		0.0246	0.0246	0.0000	582.9608	582.9608	0.0441	0.0110	587.3358
Mobile	1.2983	1.7144	10.5849	0.0228	2.6976	0.0185	2.7160	0.7205	0.0173	0.7378	0.0000	2,103.1003	2,103.1003	0.1240	0.1191	2,141.6967
Waste						0.0000	0.0000		0.0000	0.0000	46.6636	0.0000	46.6636	2.7577	0.0000	115.6070
Water						0.0000	0.0000		0.0000	0.0000	5.0235	10.4806	15.5040	0.5177	0.0124	32.1371
Total	2.9589	2.0379	10.8590	0.0247	2.6976	0.0431	2.7406	0.7205	0.0419	0.7624	51.6870	2,696.5463	2,748.2333	3.4435	0.1425	2,876.7814

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2022	5/11/2022	5	93	
2	Grading	Grading	1/1/2022	5/11/2022	5	93	
3	Building Construction	Building Construction	6/1/2022	6/18/2023	5	273	

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4	Paving	Paving	1/1/2024	6/26/2024	5	128
5	Architectural Coating	Architectural Coating	1/28/2024	6/23/2024	5	105

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 481,254; Non-Residential Outdoor: 160,418; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	4.00	78	0.48
Building Construction	Cranes	1	4.00	231	0.29
Grading	Excavators	1	4.00	158	0.38
Building Construction	Forklifts	1	4.00	89	0.20
Building Construction	Generator Sets	1	4.00	84	0.74
Grading	Graders	0	8.00	187	0.41
Paving	Pavers	1	4.00	130	0.42
Paving	Paving Equipment	1	4.00	132	0.36
Paving	Rollers	1	4.00	80	0.38
Grading	Rubber Tired Dozers	1	4.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	4.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	4.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Building Construction	Welders	1	4.00	46	0.45

Trips and VMT

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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
Architectural Coating	1	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	123.00	53.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0233	0.2434	0.1353	2.7000e-004		0.0118	0.0118		0.0109	0.0109	0.0000	23.7976	23.7976	7.7000e-003	0.0000	23.9900
Total	0.0233	0.2434	0.1353	2.7000e-004	0.0983	0.0118	0.1101	0.0505	0.0109	0.0614	0.0000	23.7976	23.7976	7.7000e-003	0.0000	23.9900

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3.2 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7400e-003	1.9500e-003	0.0217	6.0000e-005	6.6500e-003	4.0000e-005	6.6800e-003	1.7700e-003	3.0000e-005	1.8000e-003	0.0000	5.4422	5.4422	1.8000e-004	1.7000e-004	5.4969
Total	2.7400e-003	1.9500e-003	0.0217	6.0000e-005	6.6500e-003	4.0000e-005	6.6800e-003	1.7700e-003	3.0000e-005	1.8000e-003	0.0000	5.4422	5.4422	1.8000e-004	1.7000e-004	5.4969

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0233	0.2434	0.1353	2.7000e-004		0.0118	0.0118		0.0109	0.0109	0.0000	23.7976	23.7976	7.7000e-003	0.0000	23.9900
Total	0.0233	0.2434	0.1353	2.7000e-004	0.0983	0.0118	0.1101	0.0505	0.0109	0.0614	0.0000	23.7976	23.7976	7.7000e-003	0.0000	23.9900

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3.2 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7400e-003	1.9500e-003	0.0217	6.0000e-005	6.6500e-003	4.0000e-005	6.6800e-003	1.7700e-003	3.0000e-005	1.8000e-003	0.0000	5.4422	5.4422	1.8000e-004	1.7000e-004	5.4969
Total	2.7400e-003	1.9500e-003	0.0217	6.0000e-005	6.6500e-003	4.0000e-005	6.6800e-003	1.7700e-003	3.0000e-005	1.8000e-003	0.0000	5.4422	5.4422	1.8000e-004	1.7000e-004	5.4969

3.3 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					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0357	0.3626	0.3151	5.4000e-004		0.0180	0.0180		0.0166	0.0166	0.0000	47.0515	47.0515	0.0152	0.0000	47.4319
Total	0.0357	0.3626	0.3151	5.4000e-004	0.0708	0.0180	0.0888	0.0343	0.0166	0.0508	0.0000	47.0515	47.0515	0.0152	0.0000	47.4319

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3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2800e-003	1.6300e-003	0.0181	5.0000e-005	5.5400e-003	3.0000e-005	5.5700e-003	1.4700e-003	3.0000e-005	1.5000e-003	0.0000	4.5352	4.5352	1.5000e-004	1.4000e-004	4.5807
Total	2.2800e-003	1.6300e-003	0.0181	5.0000e-005	5.5400e-003	3.0000e-005	5.5700e-003	1.4700e-003	3.0000e-005	1.5000e-003	0.0000	4.5352	4.5352	1.5000e-004	1.4000e-004	4.5807

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0357	0.3626	0.3151	5.4000e-004		0.0180	0.0180		0.0166	0.0166	0.0000	47.0514	47.0514	0.0152	0.0000	47.4318
Total	0.0357	0.3626	0.3151	5.4000e-004	0.0708	0.0180	0.0888	0.0343	0.0166	0.0508	0.0000	47.0514	47.0514	0.0152	0.0000	47.4318

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3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2800e-003	1.6300e-003	0.0181	5.0000e-005	5.5400e-003	3.0000e-005	5.5700e-003	1.4700e-003	3.0000e-005	1.5000e-003	0.0000	4.5352	4.5352	1.5000e-004	1.4000e-004	4.5807
Total	2.2800e-003	1.6300e-003	0.0181	5.0000e-005	5.5400e-003	3.0000e-005	5.5700e-003	1.4700e-003	3.0000e-005	1.5000e-003	0.0000	4.5352	4.5352	1.5000e-004	1.4000e-004	4.5807

3.4 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	0.0528	0.4805	0.4718	8.4000e-004		0.0234	0.0234		0.0222	0.0222	0.0000	71.6392	71.6392	0.0157	0.0000	72.0327
Total	0.0528	0.4805	0.4718	8.4000e-004		0.0234	0.0234		0.0222	0.0222	0.0000	71.6392	71.6392	0.0157	0.0000	72.0327

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3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0103	0.2536	0.0784	8.8000e-004	0.0268	2.5500e-003	0.0293	7.7300e-003	2.4400e-003	0.0102	0.0000	83.9852	83.9852	4.9000e-004	0.0122	87.6226
Worker	0.0308	0.0220	0.2443	6.7000e-004	0.0747	4.1000e-004	0.0751	0.0199	3.7000e-004	0.0202	0.0000	61.1811	61.1811	2.0500e-003	1.8900e-003	61.7953
Total	0.0410	0.2756	0.3227	1.5500e-003	0.1015	2.9600e-003	0.1044	0.0276	2.8100e-003	0.0304	0.0000	145.1664	145.1664	2.5400e-003	0.0141	149.4178

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0528	0.4805	0.4718	8.4000e-004		0.0234	0.0234		0.0222	0.0222	0.0000	71.6391	71.6391	0.0157	0.0000	72.0326
Total	0.0528	0.4805	0.4718	8.4000e-004		0.0234	0.0234		0.0222	0.0222	0.0000	71.6391	71.6391	0.0157	0.0000	72.0326

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3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0103	0.2536	0.0784	8.8000e-004	0.0268	2.5500e-003	0.0293	7.7300e-003	2.4400e-003	0.0102	0.0000	83.9852	83.9852	4.9000e-004	0.0122	87.6226
Worker	0.0308	0.0220	0.2443	6.7000e-004	0.0747	4.1000e-004	0.0751	0.0199	3.7000e-004	0.0202	0.0000	61.1811	61.1811	2.0500e-003	1.8900e-003	61.7953
Total	0.0410	0.2756	0.3227	1.5500e-003	0.1015	2.9600e-003	0.1044	0.0276	2.8100e-003	0.0304	0.0000	145.1664	145.1664	2.5400e-003	0.0141	149.4178

3.4 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	0.0384	0.3480	0.3669	6.6000e-004		0.0160	0.0160		0.0152	0.0152	0.0000	56.2034	56.2034	0.0122	0.0000	56.5091
Total	0.0384	0.3480	0.3669	6.6000e-004		0.0160	0.0160		0.0152	0.0152	0.0000	56.2034	56.2034	0.0122	0.0000	56.5091

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3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1000e-003	0.1673	0.0547	6.7000e-004	0.0210	1.1200e-003	0.0221	6.0700e-003	1.0700e-003	7.1400e-003	0.0000	63.9869	63.9869	2.6000e-004	9.2000e-003	66.7340
Worker	0.0223	0.0151	0.1760	5.1000e-004	0.0586	3.0000e-004	0.0589	0.0156	2.8000e-004	0.0159	0.0000	46.4351	46.4351	1.4500e-003	1.3600e-003	46.8774
Total	0.0274	0.1825	0.2308	1.1800e-003	0.0796	1.4200e-003	0.0810	0.0217	1.3500e-003	0.0230	0.0000	110.4220	110.4220	1.7100e-003	0.0106	113.6114

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0384	0.3480	0.3669	6.6000e-004		0.0160	0.0160		0.0152	0.0152	0.0000	56.2033	56.2033	0.0122	0.0000	56.5091
Total	0.0384	0.3480	0.3669	6.6000e-004		0.0160	0.0160		0.0152	0.0152	0.0000	56.2033	56.2033	0.0122	0.0000	56.5091

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3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1000e-003	0.1673	0.0547	6.7000e-004	0.0210	1.1200e-003	0.0221	6.0700e-003	1.0700e-003	7.1400e-003	0.0000	63.9869	63.9869	2.6000e-004	9.2000e-003	66.7340
Worker	0.0223	0.0151	0.1760	5.1000e-004	0.0586	3.0000e-004	0.0589	0.0156	2.8000e-004	0.0159	0.0000	46.4351	46.4351	1.4500e-003	1.3600e-003	46.8774
Total	0.0274	0.1825	0.2308	1.1800e-003	0.0796	1.4200e-003	0.0810	0.0217	1.3500e-003	0.0230	0.0000	110.4220	110.4220	1.7100e-003	0.0106	113.6114

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0158	0.1524	0.2340	3.6000e-004		7.5000e-003	7.5000e-003		6.9000e-003	6.9000e-003	0.0000	32.0425	32.0425	0.0104	0.0000	32.3015
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0158	0.1524	0.2340	3.6000e-004		7.5000e-003	7.5000e-003		6.9000e-003	6.9000e-003	0.0000	32.0425	32.0425	0.0104	0.0000	32.3015

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6900e-003	1.7400e-003	0.0211	6.0000e-005	7.6200e-003	4.0000e-005	7.6600e-003	2.0300e-003	3.0000e-005	2.0600e-003	0.0000	5.8401	5.8401	1.7000e-004	1.6000e-004	5.8932
Total	2.6900e-003	1.7400e-003	0.0211	6.0000e-005	7.6200e-003	4.0000e-005	7.6600e-003	2.0300e-003	3.0000e-005	2.0600e-003	0.0000	5.8401	5.8401	1.7000e-004	1.6000e-004	5.8932

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0158	0.1524	0.2340	3.6000e-004		7.5000e-003	7.5000e-003		6.9000e-003	6.9000e-003	0.0000	32.0424	32.0424	0.0104	0.0000	32.3015
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0158	0.1524	0.2340	3.6000e-004		7.5000e-003	7.5000e-003		6.9000e-003	6.9000e-003	0.0000	32.0424	32.0424	0.0104	0.0000	32.3015

Unit 4 Commercial Development - Colusa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6900e-003	1.7400e-003	0.0211	6.0000e-005	7.6200e-003	4.0000e-005	7.6600e-003	2.0300e-003	3.0000e-005	2.0600e-003	0.0000	5.8401	5.8401	1.7000e-004	1.6000e-004	5.8932
Total	2.6900e-003	1.7400e-003	0.0211	6.0000e-005	7.6200e-003	4.0000e-005	7.6600e-003	2.0300e-003	3.0000e-005	2.0600e-003	0.0000	5.8401	5.8401	1.7000e-004	1.6000e-004	5.8932

3.6 Architectural Coating - 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					
Archit. Coating	3.7177					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3300e-003	0.0427	0.0634	1.0000e-004		2.1300e-003	2.1300e-003		2.1300e-003	2.1300e-003	0.0000	8.9364	8.9364	5.0000e-004	0.0000	8.9490
Total	3.7240	0.0427	0.0634	1.0000e-004		2.1300e-003	2.1300e-003		2.1300e-003	2.1300e-003	0.0000	8.9364	8.9364	5.0000e-004	0.0000	8.9490

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6800e-003	2.3800e-003	0.0289	9.0000e-005	0.0104	5.0000e-005	0.0105	2.7700e-003	5.0000e-005	2.8200e-003	0.0000	7.9845	7.9845	2.3000e-004	2.2000e-004	8.0571
Total	3.6800e-003	2.3800e-003	0.0289	9.0000e-005	0.0104	5.0000e-005	0.0105	2.7700e-003	5.0000e-005	2.8200e-003	0.0000	7.9845	7.9845	2.3000e-004	2.2000e-004	8.0571

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.7177					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3300e-003	0.0427	0.0634	1.0000e-004		2.1300e-003	2.1300e-003		2.1300e-003	2.1300e-003	0.0000	8.9364	8.9364	5.0000e-004	0.0000	8.9490
Total	3.7240	0.0427	0.0634	1.0000e-004		2.1300e-003	2.1300e-003		2.1300e-003	2.1300e-003	0.0000	8.9364	8.9364	5.0000e-004	0.0000	8.9490

Unit 4 Commercial Development - Colusa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6800e-003	2.3800e-003	0.0289	9.0000e-005	0.0104	5.0000e-005	0.0105	2.7700e-003	5.0000e-005	2.8200e-003	0.0000	7.9845	7.9845	2.3000e-004	2.2000e-004	8.0571
Total	3.6800e-003	2.3800e-003	0.0289	9.0000e-005	0.0104	5.0000e-005	0.0105	2.7700e-003	5.0000e-005	2.8200e-003	0.0000	7.9845	7.9845	2.3000e-004	2.2000e-004	8.0571

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Unit 4 Commercial Development - Colusa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.2983	1.7144	10.5849	0.0228	2.6976	0.0185	2.7160	0.7205	0.0173	0.7378	0.0000	2,103.1003	2,103.1003	0.1240	0.1191	2,141.6967
Unmitigated	1.2983	1.7144	10.5849	0.0228	2.6976	0.0185	2.7160	0.7205	0.0173	0.7378	0.0000	2,103.1003	2,103.1003	0.1240	0.1191	2,141.6967

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	315.48	315.48	158.00	291,863	291,863
General Office Building	334.08	75.80	24.01	604,342	604,342
Hotel	1,195.48	1,171.17	850.85	2,171,192	2,171,192
Regional Shopping Center	2,476.40	3,025.47	1384.16	4,205,836	4,205,836
Total	4,321.44	4,587.92	2,417.02	7,273,232	7,273,232

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Automobile Care Center	0.544862	0.056334	0.175929	0.132612	0.028384	0.007398	0.006643	0.019516	0.000280	0.000178	0.024375	0.000657	0.002832
General Office Building	0.544862	0.056334	0.175929	0.132612	0.028384	0.007398	0.006643	0.019516	0.000280	0.000178	0.024375	0.000657	0.002832
Hotel	0.544862	0.056334	0.175929	0.132612	0.028384	0.007398	0.006643	0.019516	0.000280	0.000178	0.024375	0.000657	0.002832
Regional Shopping Center	0.544862	0.056334	0.175929	0.132612	0.028384	0.007398	0.006643	0.019516	0.000280	0.000178	0.024375	0.000657	0.002832

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	230.8049	230.8049	0.0373	4.5300e-003	233.0872
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	230.8049	230.8049	0.0373	4.5300e-003	233.0872
NaturalGas Mitigated	0.0356	0.3235	0.2717	1.9400e-003		0.0246	0.0246		0.0246	0.0246	0.0000	352.1559	352.1559	6.7500e-003	6.4600e-003	354.2486
NaturalGas Unmitigated	0.0356	0.3235	0.2717	1.9400e-003		0.0246	0.0246		0.0246	0.0246	0.0000	352.1559	352.1559	6.7500e-003	6.4600e-003	354.2486

Unit 4 Commercial Development - Colusa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	275310	1.4800e-003	0.0135	0.0113	8.0000e-005		1.0300e-003	1.0300e-003		1.0300e-003	1.0300e-003	0.0000	14.6916	14.6916	2.8000e-004	2.7000e-004	14.7789
General Office Building	443156	2.3900e-003	0.0217	0.0183	1.3000e-004		1.6500e-003	1.6500e-003		1.6500e-003	1.6500e-003	0.0000	23.6485	23.6485	4.5000e-004	4.3000e-004	23.7890
Hotel	5.18467e+006	0.0280	0.2542	0.2135	1.5200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	276.6738	276.6738	5.3000e-003	5.0700e-003	278.3179
Regional Shopping Center	696016	3.7500e-003	0.0341	0.0287	2.0000e-004		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003	0.0000	37.1421	37.1421	7.1000e-004	6.8000e-004	37.3628
Total		0.0356	0.3235	0.2717	1.9300e-003		0.0246	0.0246		0.0246	0.0246	0.0000	352.1559	352.1559	6.7400e-003	6.4500e-003	354.2486

Unit 4 Commercial Development - Colusa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	275310	1.4800e-003	0.0135	0.0113	8.0000e-005		1.0300e-003	1.0300e-003		1.0300e-003	1.0300e-003	0.0000	14.6916	14.6916	2.8000e-004	2.7000e-004	14.7789
General Office Building	443156	2.3900e-003	0.0217	0.0183	1.3000e-004		1.6500e-003	1.6500e-003		1.6500e-003	1.6500e-003	0.0000	23.6485	23.6485	4.5000e-004	4.3000e-004	23.7890
Hotel	5.18467e+006	0.0280	0.2542	0.2135	1.5200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	276.6738	276.6738	5.3000e-003	5.0700e-003	278.3179
Regional Shopping Center	696016	3.7500e-003	0.0341	0.0287	2.0000e-004		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003	0.0000	37.1421	37.1421	7.1000e-004	6.8000e-004	37.3628
Total		0.0356	0.3235	0.2717	1.9300e-003		0.0246	0.0246		0.0246	0.0246	0.0000	352.1559	352.1559	6.7400e-003	6.4500e-003	354.2486

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	114513	10.5952	1.7100e-003	2.1000e-004	10.6999
General Office Building	303212	28.0543	4.5400e-003	5.5000e-004	28.3317
Hotel	1.55727e+006	144.0845	0.0233	2.8300e-003	145.5092
Regional Shopping Center	519552	48.0709	7.7800e-003	9.4000e-004	48.5463
Total		230.8049	0.0373	4.5300e-003	233.0872

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	114513	10.5952	1.7100e-003	2.1000e-004	10.6999
General Office Building	303212	28.0543	4.5400e-003	5.5000e-004	28.3317
Hotel	1.55727e+006	144.0845	0.0233	2.8300e-003	145.5092
Regional Shopping Center	519552	48.0709	7.7800e-003	9.4000e-004	48.5463
Total		230.8049	0.0373	4.5300e-003	233.0872

6.0 Area Detail

6.1 Mitigation Measures Area

Unit 4 Commercial Development - Colusa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.6250	2.0000e-005	2.3400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.5800e-003	4.5800e-003	1.0000e-005	0.0000	4.8700e-003
Unmitigated	1.6250	2.0000e-005	2.3400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.5800e-003	4.5800e-003	1.0000e-005	0.0000	4.8700e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3718					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2530					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.1000e-004	2.0000e-005	2.3400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.5800e-003	4.5800e-003	1.0000e-005	0.0000	4.8700e-003
Total	1.6250	2.0000e-005	2.3400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.5800e-003	4.5800e-003	1.0000e-005	0.0000	4.8700e-003

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3718					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2530					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.1000e-004	2.0000e-005	2.3400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.5800e-003	4.5800e-003	1.0000e-005	0.0000	4.8700e-003
Total	1.6250	2.0000e-005	2.3400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.5800e-003	4.5800e-003	1.0000e-005	0.0000	4.8700e-003

7.0 Water Detail

7.1 Mitigation Measures Water

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.5040	0.5177	0.0124	32.1371
Unmitigated	15.5040	0.5177	0.0124	32.1371

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	1.25128 / 0.766913	1.2718	0.0409	9.8000e-004	2.5866
General Office Building	6.09627 / 3.73642	6.1961	0.1993	4.7700e-003	12.6022
Hotel	3.62745 / 0.40305	3.0974	0.1185	2.8300e-003	6.9034
Regional Shopping Center	4.85916 / 2.97819	4.9387	0.1589	3.8100e-003	10.0448
Total		15.5040	0.5177	0.0124	32.1371

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	1.25128 / 0.766913	1.2718	0.0409	9.8000e-004	2.5866
General Office Building	6.09627 / 3.73642	6.1961	0.1993	4.7700e-003	12.6022
Hotel	3.62745 / 0.40305	3.0974	0.1185	2.8300e-003	6.9034
Regional Shopping Center	4.85916 / 2.97819	4.9387	0.1589	3.8100e-003	10.0448
Total		15.5040	0.5177	0.0124	32.1371

8.0 Waste Detail

8.1 Mitigation Measures Waste

Unit 4 Commercial Development - Colusa County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	46.6636	2.7577	0.0000	115.6070
Unmitigated	46.6636	2.7577	0.0000	115.6070

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	50.81	10.3140	0.6095	0.0000	25.5524
General Office Building	31.9	6.4754	0.3827	0.0000	16.0426
Hotel	78.29	15.8922	0.9392	0.0000	39.3722
Regional Shopping Center	68.88	13.9820	0.8263	0.0000	34.6399
Total		46.6636	2.7577	0.0000	115.6070

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	50.81	10.3140	0.6095	0.0000	25.5524
General Office Building	31.9	6.4754	0.3827	0.0000	16.0426
Hotel	78.29	15.8922	0.9392	0.0000	39.3722
Regional Shopping Center	68.88	13.9820	0.8263	0.0000	34.6399
Total		46.6636	2.7577	0.0000	115.6070

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number
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11.0 Vegetation

APPENDIX B

Calculation of Risk Prioritization Construction Phase

