APPENDIX A

SUPPORTING AIR QUALITY ASSUMPTIONS AND CALCULATIONS

Supporting Air Quality Assumptions and Calculations

Air Emission Calculation Methodology

Project construction and operation were analyzed. Construction emissions were estimated for off-road equipment, on-road trucks for material delivery and equipment hauling, and worker commute trips. Operational emissions were estimated for off-road equipment, on-road heavy trucks, and on-road employee vehicles.

Regulatory models used to estimate air quality impacts included:

- California Emissions Estimator Model[1] (CalEEMod) Version 2020.4.0 land use emissions model estimates construction emissions due to demolition and construction activities and operational emissions related projects in California.
- California Air Resources Board (CARB) EMFAC[2] emissions inventory model. EMFAC is the latest emission inventory model that calculates emission inventories and emission rates for motor vehicles operating on roads in California. This model reflects CARB's current understanding of how vehicles travel and how much they emit. EMFAC can be used to show how California motor vehicle emissions have changed over time and are projected to change in the future.
- CARB OFFROAD[3] emissions inventory model. OFFROAD is the latest emission inventory model that calculates emission inventories and emission rates for off-road equipment such as loaders, excavators, and off-road haul trucks operating in California. This model reflects CARB's current understanding of how equipment operates and how much they emit. OFFROAD can be used to show how California off-road equipment emissions have changed over time and are projected to change in the future.

The air quality analysis includes a review of criteria pollutant emissions such as carbon monoxide (CO), nitrogen oxides (NO_x), volatile organic compounds (VOC) as reactive organic gases (ROG), particulate matter less than 10 micrometers (coarse or PM_{10}), particulate matter less than 2.5 micrometers (fine or $PM_{2.5}$). Greenhouse gas (GHG) emissions are estimated for carbon dioxide (CO_2) and methane (CH_4), and are presented as carbon dioxide equivalents (CO_2e).

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[1] California Air Pollution Control Officers Association (CAPCOA). 2021. *California Emissions Estimator Model User's Guide Version 2020.4.0.* May 2021. http://www.caleemod.com/

[2] California Air Resources Board. 2018. *EMFAC2017 User's Guide*, March 1, 2018, https://ww3.arb.ca.gov/msei/downloads/emfac2017-volume-i-users-guide.pdf and https://www.arb.ca.gov/emfac/2017/

[3] California Air Resources Board, *Mobile Source Emissions Inventory Documentation – Off Road Diesel Equipment*, https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-documentation-road and https://ww3.arb.ca.gov/msei/ordiesel/ordas_ef_fcf_2017.pdf

Construction Emissions Assumptions

Construction of the Project would occur in August 2022, at the earliest. The Project site is 5.25 acres, but the area to be improved is approximately one-acre (the rest of the Project site is hardscaped). Construction of the Project was assumed to require approximately one month with 5 days of concrete bunker construction, 2 days of subgrade preparation, 5 days of aggregate base (AB) placement/compaction/grading and, 5 days of asphalt placement. Construction equipment was assumed to operate eight hours per day, five days per week. **Table 1** provides the estimated construction schedule

TABLE 1
ESTIMATED CONSTRUCTION SCHEDULE

Phase	Description	Start	End	Working Days
1	Concrete Bunker Construction	08/01/2022	08/05/2022	5
2	Subgrade Preparation	08/06/2022	08/09/2022	2
3	AB Placement/Compaction/Grading	08/10/2022	08/16/2022	5
4	Asphalt Placement	08/17/2022	08/23/2022	5

SOURCE: CalEEMod Version 2020.4.0

Project construction would require approximately four to 18 worker round trips per day depending on the construction phase. Project construction would require 44 haul truck round trips for delivering concrete blocks, 105 haul truck round trips for delivering AB, and 60 haul truck round trips for delivering asphalt. Construction equipment assumed by phase is provided in **Table 2**.

TABLE 2
ESTIMATED CONSTRUCTION EQUIPMENT USAGE

Phase	Equipment	Amount	Daily Hours	HP	Load Factor
Concrete Bunker Construction	Rough Terrain Forklift	1	8	120	0.40
Subgrade Preparation	Rubber Tired Dozers	1	8	247	0.40
Subgrade Preparation	Rollers	1	8	100	0.38
Subgrade Preparation	Plate Compactors	1	8	200	0.43
AB Placement/Compaction/Grading	Graders	2	8	187	0.41
AB Placement/Compaction/Grading	Tractors/Loaders/Backhoes	1	8	170	0.37
AB Placement/Compaction/Grading	Off-Highway Trucks	1	8	300	0.38
Asphalt Placement	Rubber Tired Dozers	1	8	247	0.40
Asphalt Placement	Graders	2	8	187	0.41
Asphalt Placement	Off-Highway Trucks	1	8	300	0.38
Paving	Paving Equipment	1	8	132	0.36
Paving	Pavers	1	8	130	0.42
Paving	Rollers	1	8	100	0.38

SOURCE: CalEEMod Version 2020.4.0

Operational Off-Road Equipment Assumptions

For operations, off-road equipment emissions were computed using the CARB's OFFROAD emission factors. Operation of the Project would require the use of the following heavy-duty equipment at the Project site (all assumed to be diesel fueled):

- Tracked Grinder, 1,050 horsepower (hp), 4 hours per day, 6 days per week, 313 days/year
- Loader, 170 hp, 6 hours per day, 6 days per week, 313 days/year
- Excavator, 170 hp, 6 hours per day, 6 days per week, 313 days/year
- Skid Steer, 70 hp, 4 hours per day, 6 days per week, 313 days/year
- Screen, 100 hp, 6 hours per day, 6 days per week, 313 days/year
- Water Truck, 300 hp, 4 hours per day, 6 days per week, 313 days/year

Emissions from off-road equipment activities were estimated based on the projected activity schedule, the number of vehicles/pieces of equipment, the types of equipment/type of fuel used, and the calendar year. Emission factors from the OFFROAD emissions model for year 2023 were used.

This information was applied to criteria pollutant emissions factors, in pounds per hour, derived using the OFFROAD emissions model. **Equation 1** outlines how off-road construction equipment emissions were computed, and the emissions factors used in this assessment are summarized, by equipment type within **Table 3**.

Equation 1

*Emission Rate (tons/year) = Emission Factor (pounds/hour) * hours of operation per year * number of pieces of equipment * (1/2000 ton/pounds)*

*Emission Rate (pounds/day) = Emission Factor (pounds/hour) * hours of operation per day * number of pieces of equipment*

TABLE 3
EMISSIONS FACTORS (pounds/hour) FOR OFFROAD EQUIPMENT

Vehicle Type	ROG	CO	NOx	PM10	PM2.5	CO_2	CH_4
Tracked Grinder	0.054	0.93935	2.26751	0.018	0.017	472.0545	0.153
Loader	0.184	3.0777	1.52095	0.077	0.07	468.821	0.152
Excavator	0.178	3.07648	1.46245	0.072	0.066	472.277	0.153
Skid Steer	0.153	3.26613	2.03854	0.069	0.063	472.656	0.153
Screen	0.225	3.51535	2.29768	0.104	0.095	473.5884	0.153
Water Truck	0.187	1.22057	1.32428	0.048	0.044	475.0488	0.154

Source: CARB OFFROAD Equipment Emission Factors from CalEEMod 2020.4.0 User's Guide Appendix D: Default Data Tables.

Operational On-Road Vehicles Assumptions

Vehicular emissions were computed using the CARB's EMFAC emission factors for year 2023. Operation of the Project would require the following vehicle trips:

- 15 inbound feedstock round trips per day (76.4 mile round trip)
- 10 inbound amendments round trips per day (40 mile round trip)
- 15 outbound feedstock round trips per day (80 mile round trip)
- 6 employee round trips per day (15 mile round trip)

Approximately 11 inbound feedstock round trips would backhaul outbound feedstock (reducing VMT by 78.2 per backhaul), thus the Project would generate 35 round trips (6 employee and 29 heavy truck) The 29 inbound and outbound round truck trips were modeled as Heavy-Heavy Duty Diesel Tractor Trucks assumed to be 100% diesel-fueled. The 6 employee round trips were also modeled as a composite of the light duty automobile categories and fuel types. The analysis conservatively assumed all vehicle emissions would occur within the YSAQMD for comparison to YSAQMD significance thresholds even though some emissions would occur with the Bay Area Air Quality Management District (BAAQMD) and the Sacramento Metropolitan Air Quality Management District (SMAQMD).

Criteria pollutant emissions associated with on-road vehicles were calculated by combining the activity information with emissions factors, in grams per mile, derived using the EMFAC emissions model. Emissions calculations were based on **Equation 2**. The EMFAC emissions factors were developed for employee vehicles and heavy trucks. **Table 4** displays the emission factors for trucks and employee vehicles.

Equation 2

*Emission Rate (tons/year) = Emission Factor (gram/mile) * trips per day * miles per trip * days/year * (453.59/2000 tons/gram)*

*Emission Rate (pounds/day) = Emission Factor (gram/mile) * trips per day * miles per trip * (1/453.59 pounds/gram)*

TABLE 4
EMISSIONS FACTORS (grams/mile) FOR ON-ROAD VEHICLES

Vehicle Type	ROG	CO	NOx	CO_2	CH_4	PM10	PM2.5
Heavy-Heavy Duty Diesel Tractor Trucks	0.02	0.16	2.03	1,266	0.001	0.13	0.06
Light Duty Automobiles	0.01	0.61	0.05	276	0.003	0.05	0.02

Source: CARB EMFAC Emissions Model.

Criteria air pollutant emissions associated with heavy truck idling was calculated using emissions factors, in grams per vehicle per day, derived using the EMFAC emissions model. Emissions calculations were based on **Equation 3**. **Table 5** displays the idling emission factors for heavy trucks.

Equation 3

*Emission Rate (tons/year) = Emission Factor (gram/trip/day) * trips per day * days/year * (453.59/2000 tons/gram)*

*Emission Rate (pounds/day) = Emission Factor (gram/trip/day) * trips per day * (1/453.59 pounds/gram)*

TABLE 5
EMISSIONS FACTORS (grams/vehicle/day) FOR HEAVY TRUCK IDLING

Vehicle Type	ROG	CO	NOx	CO_2	CH_4	PM10	PM2.5
Heavy-Heavy Duty Diesel Tractor Trucks (DSL)	1.88	27.77	22.21	4,637	0.087	0.01	0.01

Source: CARB EMFAC Emissions Model.

Attachments

CalEEMod Emissions Outputs

Annual (26 pages)

Summer Daily (21 pages)

Winter Daily (21 pages)

Operational Emissions Summary (1 page)

Off-Road On-Site Mobile Equipment (1 page)

On-Road Mobile Vehicle Emissions (1 page)

Note: Refer to CalEEMod Annual Output for Operational GHG emissions from water/wastewater conveyance and solid waste disposal. Operational energy use GHG emissions were calculated based on PG&E's carbon intensity of 203.98 lb/MWh and the estimate energy use of approximately 56,000 kWh per year.

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

Solano County Chip & Grind

Solano-Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	56
Climate Zone	4			**Operational Year**	2023
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 - 5.25-acre site - one acre would be improved (the rest is already hardscaped)

Construction Phase - Moore, Richard. Personal Communication. January 3, 2022.

Off-road Equipment - Moore, Richard. Personal Communication. January 3, 2022.

Off-road Equipment - Moore, Richard. Personal Communication. January 3, 2022.

Off-road Equipment - Moore, Richard. Personal Communication. January 3, 2022.

Off-road Equipment - Moore, Richard. Personal Communication. January 3, 2022.

Trips and VMT - 44 loads of concrete blocks, 105 loads of AB, and 60 loads of asphalt. Moore, Richard. Personal Communication. January 3, 2022.

Grading - one acre portion of site being improved

Vehicle Trips - operational emissions calculated with EMFAC

Consumer Products - none

Area Coating -

Solano County Chip & Grind - Solano-Sacramento County, Annual

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

Landscape Equipment - no landscaping

Energy Use - Roughly 3,000 square feet of existing building and new scale -- 3,000 square foot building = 56,410 kWh in CalEEMod

Water And Wastewater - Best estimates based on size of office and water needs for operations

Solid Waste - Minor solid waste generation from the minimal employees

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	230.00	5.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	10.00	2.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblEnergyUse	NT24E	0.00	56,410.00
tblGrading	AcresOfGrading	5.00	1.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	HorsePower	100.00	120.00
tblOffRoadEquipment	HorsePower	8.00	200.00
tblOffRoadEquipment	HorsePower	80.00	100.00
tblOffRoadEquipment	HorsePower	402.00	300.00
tblOffRoadEquipment	HorsePower	97.00	170.00
tblOffRoadEquipment	HorsePower	80.00	100.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
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

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

tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	0.00	0.25
tblTripsAndVMT	HaulingTripNumber	0.00	88.00
tblTripsAndVMT	HaulingTripNumber	0.00	210.00
tblTripsAndVMT	HaulingTripNumber	0.00	120.00
tblTripsAndVMT	WorkerTripNumber	0.00	4.00
tblWater	IndoorWaterUseRate	0.00	100,000.00
tblWater	OutdoorWaterUseRate	0.00	1,500,000.00

2.0 Emissions Summary

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

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0131	0.1602	0.0902	3.5000e-004	0.0113	5.3900e-003	0.0167	4.5800e-003	4.9700e-003	9.5500e-003	0.0000	31.5241	31.5241	6.0900e-003	1.9700e-003	32.2647
Maximum	**0.0131**	**0.1602**	**0.0902**	**3.5000e-004**	**0.0113**	**5.3900e-003**	**0.0167**	**4.5800e-003**	**4.9700e-003**	**9.5500e-003**	**0.0000**	**31.5241**	**31.5241**	**6.0900e-003**	**1.9700e-003**	**32.2647**

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	0.0131	0.1602	0.0902	3.5000e-004	0.0113	5.3900e-003	0.0167	4.5800e-003	4.9700e-003	9.5500e-003	0.0000	31.5241	31.5241	6.0900e-003	1.9700e-003	32.2647
Maximum	**0.0131**	**0.1602**	**0.0902**	**3.5000e-004**	**0.0113**	**5.3900e-003**	**0.0167**	**4.5800e-003**	**4.9700e-003**	**9.5500e-003**	**0.0000**	**31.5241**	**31.5241**	**6.0900e-003**	**1.9700e-003**	**32.2647**

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

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**8-1-2022**	**9-30-2022**	0.1736	0.1736
		Highest	0.1736	0.1736

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0508	0.0000	0.0508	3.0000e-003	0.0000	0.1257
Water						0.0000	0.0000		0.0000	0.0000	0.0317	0.5358	0.5675	3.3500e-003	9.0000e-005	0.6772
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0825**	**0.5358**	**0.6183**	**6.3500e-003**	**9.0000e-005**	**0.8030**

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0508	0.0000	0.0508	3.0000e-003	0.0000	0.1257
Water						0.0000	0.0000		0.0000	0.0000	0.0317	0.5358	0.5675	3.3500e-003	9.0000e-005	0.6772
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0825**	**0.5358**	**0.6183**	**6.3500e-003**	**9.0000e-005**	**0.8030**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Construction Concrete Bunker	Building Construction	8/1/2022	8/5/2022	5	5	
2	Subgrade Preparation	Site Preparation	8/6/2022	8/9/2022	5	2	
3	AB Placement/Compaction/Grading	Grading	8/10/2022	8/16/2022	5	5	

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

4	Asphalt Placement	Paving	8/17/2022	8/23/2022	5	5	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Construction Concrete Bunker	Rough Terrain Forklifts	1	8.00	120	0.40
Subgrade Preparation	Plate Compactors	1	8.00	200	0.43
Subgrade Preparation	Rollers	1	8.00	100	0.38
Subgrade Preparation	Rubber Tired Dozers	1	8.00	247	0.40
AB Placement/Compaction/Grading	Graders	2	8.00	187	0.41
AB Placement/Compaction/Grading	Off-Highway Trucks	1	8.00	300	0.38
AB Placement/Compaction/Grading	Tractors/Loaders/Backhoes	1	8.00	170	0.37
Asphalt Placement	Graders	2	8.00	187	0.41
Asphalt Placement	Off-Highway Trucks	1	8.00	402	0.38
Asphalt Placement	Pavers	1	8.00	130	0.42
Asphalt Placement	Paving Equipment	1	8.00	132	0.36
Asphalt Placement	Rollers	1	8.00	100	0.38
Asphalt Placement	Rubber Tired Dozers	1	8.00	247	0.40

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
Construction Concrete Bunker	1	4.00	0.00	88.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Subgrade Preparation	3	8.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT

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

AB Placement/Compactio	4	10.00	0.00	210.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Placement	7	18.00	0.00	120.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Construction Concrete Bunker - 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	3.4000e-004	4.4400e-003	6.8700e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.9083	0.9083	2.9000e-004	0.0000	0.9157
Total	**3.4000e-004**	**4.4400e-003**	**6.8700e-003**	**1.0000e-005**		**1.5000e-004**	**1.5000e-004**		**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.9083**	**0.9083**	**2.9000e-004**	**0.0000**	**0.9157**

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

3.2 Construction Concrete Bunker - 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	1.8000e-004	6.8800e-003	1.4000e-003	3.0000e-005	7.5000e-004	7.0000e-005	8.2000e-004	2.1000e-004	6.0000e-005	2.7000e-004	0.0000	2.6210	2.6210	2.0000e-005	4.1000e-004	2.7443
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	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0618	0.0618	0.0000	0.0000	0.0625
Total	**2.1000e-004**	**6.9000e-003**	**1.6300e-003**	**3.0000e-005**	**8.2000e-004**	**7.0000e-005**	**8.9000e-004**	**2.3000e-004**	**6.0000e-005**	**2.9000e-004**	**0.0000**	**2.6829**	**2.6829**	**2.0000e-005**	**4.1000e-004**	**2.8068**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4000e-004	4.4400e-003	6.8700e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.9083	0.9083	2.9000e-004	0.0000	0.9157
Total	**3.4000e-004**	**4.4400e-003**	**6.8700e-003**	**1.0000e-005**		**1.5000e-004**	**1.5000e-004**		**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.9083**	**0.9083**	**2.9000e-004**	**0.0000**	**0.9157**

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

3.2 Construction Concrete Bunker - 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	1.8000e-004	6.8800e-003	1.4000e-003	3.0000e-005	7.5000e-004	7.0000e-005	8.2000e-004	2.1000e-004	6.0000e-005	2.7000e-004	0.0000	2.6210	2.6210	2.0000e-005	4.1000e-004	2.7443
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	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0618	0.0618	0.0000	0.0000	0.0625
Total	**2.1000e-004**	**6.9000e-003**	**1.6300e-003**	**3.0000e-005**	**8.2000e-004**	**7.0000e-005**	**8.9000e-004**	**2.3000e-004**	**6.0000e-005**	**2.9000e-004**	**0.0000**	**2.6829**	**2.6829**	**2.0000e-005**	**4.1000e-004**	**2.8068**

3.3 Subgrade 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					6.5500e-003	0.0000	6.5500e-003	3.3700e-003	0.0000	3.3700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0400e-003	0.0110	5.9100e-003	1.0000e-005		5.4000e-004	5.4000e-004		5.0000e-004	5.0000e-004	0.0000	1.0384	1.0384	3.4000e-004	0.0000	1.0468
Total	**1.0400e-003**	**0.0110**	**5.9100e-003**	**1.0000e-005**	**6.5500e-003**	**5.4000e-004**	**7.0900e-003**	**3.3700e-003**	**5.0000e-004**	**3.8700e-003**	**0.0000**	**1.0384**	**1.0384**	**3.4000e-004**	**0.0000**	**1.0468**

3.3 Subgrade 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	2.0000e-005	2.0000e-005	1.8000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0495	0.0495	0.0000	0.0000	0.0500
Total	**2.0000e-005**	**2.0000e-005**	**1.8000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0495**	**0.0495**	**0.0000**	**0.0000**	**0.0500**

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					6.5500e-003	0.0000	6.5500e-003	3.3700e-003	0.0000	3.3700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0400e-003	0.0110	5.9100e-003	1.0000e-005		5.4000e-004	5.4000e-004		5.0000e-004	5.0000e-004	0.0000	1.0384	1.0384	3.4000e-004	0.0000	1.0468
Total	**1.0400e-003**	**0.0110**	**5.9100e-003**	**1.0000e-005**	**6.5500e-003**	**5.4000e-004**	**7.0900e-003**	**3.3700e-003**	**5.0000e-004**	**3.8700e-003**	**0.0000**	**1.0384**	**1.0384**	**3.4000e-004**	**0.0000**	**1.0468**

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

3.3 Subgrade 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	2.0000e-005	2.0000e-005	1.8000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0495	0.0495	0.0000	0.0000	0.0500
Total	**2.0000e-005**	**2.0000e-005**	**1.8000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0495**	**0.0495**	**0.0000**	**0.0000**	**0.0500**

3.4 AB Placement/Compaction/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					5.3000e-004	0.0000	5.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6200e-003	0.0386	0.0234	7.0000e-005		1.3600e-003	1.3600e-003		1.2500e-003	1.2500e-003	0.0000	6.2505	6.2505	2.0200e-003	0.0000	6.3010
Total	**3.6200e-003**	**0.0386**	**0.0234**	**7.0000e-005**	**5.3000e-004**	**1.3600e-003**	**1.8900e-003**	**6.0000e-005**	**1.2500e-003**	**1.3100e-003**	**0.0000**	**6.2505**	**6.2505**	**2.0200e-003**	**0.0000**	**6.3010**

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

3.4 AB Placement/Compaction/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	4.3000e-004	0.0164	3.3500e-003	6.0000e-005	1.7900e-003	1.6000e-004	1.9500e-003	4.9000e-004	1.5000e-004	6.4000e-004	0.0000	6.2548	6.2548	4.0000e-005	9.8000e-004	6.5489
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	7.0000e-005	5.0000e-005	5.7000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1546	0.1546	1.0000e-005	0.0000	0.1561
Total	**5.0000e-004**	**0.0165**	**3.9200e-003**	**6.0000e-005**	**1.9700e-003**	**1.6000e-004**	**2.1300e-003**	**5.4000e-004**	**1.5000e-004**	**6.9000e-004**	**0.0000**	**6.4094**	**6.4094**	**5.0000e-005**	**9.8000e-004**	**6.7050**

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					5.3000e-004	0.0000	5.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6200e-003	0.0386	0.0234	7.0000e-005		1.3600e-003	1.3600e-003		1.2500e-003	1.2500e-003	0.0000	6.2505	6.2505	2.0200e-003	0.0000	6.3010
Total	**3.6200e-003**	**0.0386**	**0.0234**	**7.0000e-005**	**5.3000e-004**	**1.3600e-003**	**1.8900e-003**	**6.0000e-005**	**1.2500e-003**	**1.3100e-003**	**0.0000**	**6.2505**	**6.2505**	**2.0200e-003**	**0.0000**	**6.3010**

3.4 AB Placement/Compaction/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	4.3000e-004	0.0164	3.3500e-003	6.0000e-005	1.7900e-003	1.6000e-004	1.9500e-003	4.9000e-004	1.5000e-004	6.4000e-004	0.0000	6.2548	6.2548	4.0000e-005	9.8000e-004	6.5489
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	7.0000e-005	5.0000e-005	5.7000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1546	0.1546	1.0000e-005	0.0000	0.1561
Total	**5.0000e-004**	**0.0165**	**3.9200e-003**	**6.0000e-005**	**1.9700e-003**	**1.6000e-004**	**2.1300e-003**	**5.4000e-004**	**1.5000e-004**	**6.9000e-004**	**0.0000**	**6.4094**	**6.4094**	**5.0000e-005**	**9.8000e-004**	**6.7050**

3.5 Asphalt Placement - 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	6.9700e-003	0.0733	0.0454	1.2000e-004		3.0200e-003	3.0200e-003		2.7800e-003	2.7800e-003	0.0000	10.3327	10.3327	3.3400e-003	0.0000	10.4162
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.9700e-003**	**0.0733**	**0.0454**	**1.2000e-004**		**3.0200e-003**	**3.0200e-003**		**2.7800e-003**	**2.7800e-003**	**0.0000**	**10.3327**	**10.3327**	**3.3400e-003**	**0.0000**	**10.4162**

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

3.5 Asphalt Placement - 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	2.4000e-004	9.3800e-003	1.9200e-003	4.0000e-005	1.0200e-003	9.0000e-005	1.1100e-003	2.8000e-004	9.0000e-005	3.7000e-004	0.0000	3.5741	3.5741	2.0000e-005	5.6000e-004	3.7422
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	9.0000e-005	1.0200e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2783	0.2783	1.0000e-005	1.0000e-005	0.2810
Total	**3.7000e-004**	**9.4700e-003**	**2.9400e-003**	**4.0000e-005**	**1.3500e-003**	**9.0000e-005**	**1.4400e-003**	**3.7000e-004**	**9.0000e-005**	**4.6000e-004**	**0.0000**	**3.8524**	**3.8524**	**3.0000e-005**	**5.7000e-004**	**4.0232**

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	6.9700e-003	0.0733	0.0454	1.2000e-004		3.0200e-003	3.0200e-003		2.7800e-003	2.7800e-003	0.0000	10.3327	10.3327	3.3400e-003	0.0000	10.4162
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.9700e-003**	**0.0733**	**0.0454**	**1.2000e-004**		**3.0200e-003**	**3.0200e-003**		**2.7800e-003**	**2.7800e-003**	**0.0000**	**10.3327**	**10.3327**	**3.3400e-003**	**0.0000**	**10.4162**

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

3.5 Asphalt Placement - 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	2.4000e-004	9.3800e-003	1.9200e-003	4.0000e-005	1.0200e-003	9.0000e-005	1.1100e-003	2.8000e-004	9.0000e-005	3.7000e-004	0.0000	3.5741	3.5741	2.0000e-005	5.6000e-004	3.7422
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	9.0000e-005	1.0200e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2783	0.2783	1.0000e-005	1.0000e-005	0.2810
Total	**3.7000e-004**	**9.4700e-003**	**2.9400e-003**	**4.0000e-005**	**1.3500e-003**	**9.0000e-005**	**1.4400e-003**	**3.7000e-004**	**9.0000e-005**	**4.6000e-004**	**0.0000**	**3.8524**	**3.8524**	**3.0000e-005**	**5.7000e-004**	**4.0232**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	10.00	5.00	7.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.554526	0.053831	0.165930	0.132086	0.027621	0.006783	0.007681	0.014870	0.000982	0.000404	0.029673	0.000793	0.004819

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

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

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.5675	3.3500e-003	9.0000e-005	0.6772
Unmitigated	0.5675	3.3500e-003	9.0000e-005	0.6772

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0.1 / 1.5	0.5675	3.3500e-003	9.0000e-005	0.6772
Total		**0.5675**	**3.3500e-003**	**9.0000e-005**	**0.6772**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0.1 / 1.5	0.5675	3.3500e-003	9.0000e-005	0.6772
Total		**0.5675**	**3.3500e-003**	**9.0000e-005**	**0.6772**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0508	3.0000e-003	0.0000	0.1257
Unmitigated	0.0508	3.0000e-003	0.0000	0.1257

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0.25	0.0508	3.0000e-003	0.0000	0.1257
Total		**0.0508**	**3.0000e-003**	**0.0000**	**0.1257**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0.25	0.0508	3.0000e-003	0.0000	0.1257
Total		**0.0508**	**3.0000e-003**	**0.0000**	**0.1257**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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

Solano County Chip & Grind

Solano-Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	56
Climate Zone	4			**Operational Year**	2023
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 - 5.25-acre site - one acre would be improved (the rest is already hardscaped)

Construction Phase - Moore, Richard. Personal Communication. January 3, 2022.

Off-road Equipment - Moore, Richard. Personal Communication. January 3, 2022.

Off-road Equipment - Moore, Richard. Personal Communication. January 3, 2022.

Off-road Equipment - Moore, Richard. Personal Communication. January 3, 2022.

Off-road Equipment - Moore, Richard. Personal Communication. January 3, 2022.

Trips and VMT - 44 loads of concrete blocks, 105 loads of AB, and 60 loads of asphalt. Moore, Richard. Personal Communication. January 3, 2022.

Grading - one acre portion of site being improved

Vehicle Trips - operational emissions calculated with EMFAC

Consumer Products - none

Area Coating -

Solano County Chip & Grind - Solano-Sacramento County, Summer

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

Landscape Equipment - no landscaping

Energy Use - Roughly 3,000 square feet of existing building and new scale -- 3,000 square foot building = 56,410 kWh in CalEEMod

Water And Wastewater - Best estimates based on size of office and water needs for operations

Solid Waste - Minor solid waste generation from the minimal employees

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	230.00	5.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	10.00	2.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblEnergyUse	NT24E	0.00	56,410.00
tblGrading	AcresOfGrading	5.00	1.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	HorsePower	100.00	120.00
tblOffRoadEquipment	HorsePower	8.00	200.00
tblOffRoadEquipment	HorsePower	80.00	100.00
tblOffRoadEquipment	HorsePower	402.00	300.00
tblOffRoadEquipment	HorsePower	97.00	170.00
tblOffRoadEquipment	HorsePower	80.00	100.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
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

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

tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	0.00	0.25
tblTripsAndVMT	HaulingTripNumber	0.00	88.00
tblTripsAndVMT	HaulingTripNumber	0.00	210.00
tblTripsAndVMT	HaulingTripNumber	0.00	120.00
tblTripsAndVMT	WorkerTripNumber	0.00	4.00
tblWater	IndoorWaterUseRate	0.00	100,000.00
tblWater	OutdoorWaterUseRate	0.00	1,500,000.00

2.0 Emissions Summary

Solano County Chip & Grind - Solano-Sacramento County, Summer

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.9440	32.9291	19.3451	0.0632	6.6132	1.2439	7.1552	3.3836	1.1457	3.8823	0.0000	6,263.1887	6,263.1887	1.4874	0.4355	6,375.2221
Maximum	**2.9440**	**32.9291**	**19.3451**	**0.0632**	**6.6132**	**1.2439**	**7.1552**	**3.3836**	**1.1457**	**3.8823**	**0.0000**	**6,263.1887**	**6,263.1887**	**1.4874**	**0.4355**	**6,375.2221**

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					
2022	2.9440	32.9291	19.3451	0.0632	6.6132	1.2439	7.1552	3.3836	1.1457	3.8823	0.0000	6,263.1887	6,263.1887	1.4874	0.4355	6,375.2221
Maximum	**2.9440**	**32.9291**	**19.3451**	**0.0632**	**6.6132**	**1.2439**	**7.1552**	**3.3836**	**1.1457**	**3.8823**	**0.0000**	**6,263.1887**	**6,263.1887**	**1.4874**	**0.4355**	**6,375.2221**

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

Solano County Chip & Grind - Solano-Sacramento County, Summer

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Construction Concrete Bunker	Building Construction	8/1/2022	8/5/2022	5	5	
2	Subgrade Preparation	Site Preparation	8/6/2022	8/9/2022	5	2	
3	AB Placement/Compaction/Grading	Grading	8/10/2022	8/16/2022	5	5	
4	Asphalt Placement	Paving	8/17/2022	8/23/2022	5	5	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Construction Concrete Bunker	Rough Terrain Forklifts	1	8.00	120	0.40
Subgrade Preparation	Plate Compactors	1	8.00	200	0.43
Subgrade Preparation	Rollers	1	8.00	100	0.38
Subgrade Preparation	Rubber Tired Dozers	1	8.00	247	0.40
AB Placement/Compaction/Grading	Graders	2	8.00	187	0.41
AB Placement/Compaction/Grading	Off-Highway Trucks	1	8.00	300	0.38
AB Placement/Compaction/Grading	Tractors/Loaders/Backhoes	1	8.00	170	0.37

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

Asphalt Placement	Graders	2	8.00	187	0.41
Asphalt Placement	Off-Highway Trucks	1	8.00	402	0.38
Asphalt Placement	Pavers	1	8.00	130	0.42
Asphalt Placement	Paving Equipment	1	8.00	132	0.36
Asphalt Placement	Rollers	1	8.00	100	0.38
Asphalt Placement	Rubber Tired Dozers	1	8.00	247	0.40

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
Construction Concrete Bunker	1	4.00	0.00	88.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Subgrade Preparation	3	8.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
AB Placement/Compactio	4	10.00	0.00	210.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Placement	7	18.00	0.00	120.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Construction Concrete Bunker - 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	0.1342	1.7764	2.7461	4.1400e-003		0.0620	0.0620		0.0570	0.0570		400.5054	400.5054	0.1295		403.7437
Total	**0.1342**	**1.7764**	**2.7461**	**4.1400e-003**		**0.0620**	**0.0620**		**0.0570**	**0.0570**		**400.5054**	**400.5054**	**0.1295**		**403.7437**

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

3.2 Construction Concrete Bunker - 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	lb/day										lb/day					
Hauling	0.0726	2.6255	0.5569	0.0109	0.3085	0.0268	0.3353	0.0846	0.0257	0.1103		1,155.3387	1,155.3387	7.4000e-003	0.1817	1,209.6712
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0126	7.2100e-003	0.0991	2.9000e-004	0.0304	1.6000e-004	0.0306	8.0700e-003	1.5000e-004	8.2200e-003		29.2872	29.2872	8.6000e-004	7.5000e-004	29.5331
Total	**0.0852**	**2.6327**	**0.6561**	**0.0112**	**0.3389**	**0.0270**	**0.3659**	**0.0927**	**0.0258**	**0.1185**		**1,184.6259**	**1,184.6259**	**8.2600e-003**	**0.1825**	**1,239.2043**

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	0.1342	1.7764	2.7461	4.1400e-003		0.0620	0.0620		0.0570	0.0570	0.0000	400.5054	400.5054	0.1295		403.7437
Total	**0.1342**	**1.7764**	**2.7461**	**4.1400e-003**		**0.0620**	**0.0620**		**0.0570**	**0.0570**	**0.0000**	**400.5054**	**400.5054**	**0.1295**		**403.7437**

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

3.2 Construction Concrete Bunker - 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	lb/day										lb/day					
Hauling	0.0726	2.6255	0.5569	0.0109	0.3085	0.0268	0.3353	0.0846	0.0257	0.1103		1,155.3387	1,155.3387	7.4000e-003	0.1817	1,209.6712
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0126	7.2100e-003	0.0991	2.9000e-004	0.0304	1.6000e-004	0.0306	8.0700e-003	1.5000e-004	8.2200e-003		29.2872	29.2872	8.6000e-004	7.5000e-004	29.5331
Total	**0.0852**	**2.6327**	**0.6561**	**0.0112**	**0.3389**	**0.0270**	**0.3659**	**0.0927**	**0.0258**	**0.1185**		**1,184.6259**	**1,184.6259**	**8.2600e-003**	**0.1825**	**1,239.2043**

3.3 Subgrade 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	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.0450	10.9510	5.9074	0.0118		0.5417	0.5417		0.4984	0.4984		1,144.6651	1,144.6651	0.3702		1,153.9203
Total	**1.0450**	**10.9510**	**5.9074**	**0.0118**	**6.5523**	**0.5417**	**7.0940**	**3.3675**	**0.4984**	**3.8658**		**1,144.6651**	**1,144.6651**	**0.3702**		**1,153.9203**

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

3.3 Subgrade 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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0252	0.0144	0.1983	5.8000e-004	0.0609	3.3000e-004	0.0612	0.0161	3.0000e-004	0.0164		58.5743	58.5743	1.7100e-003	1.5100e-003	59.0662
Total	**0.0252**	**0.0144**	**0.1983**	**5.8000e-004**	**0.0609**	**3.3000e-004**	**0.0612**	**0.0161**	**3.0000e-004**	**0.0164**		**58.5743**	**58.5743**	**1.7100e-003**	**1.5100e-003**	**59.0662**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.0450	10.9510	5.9074	0.0118		0.5417	0.5417		0.4984	0.4984	0.0000	1,144.6651	1,144.6651	0.3702		1,153.9203
Total	**1.0450**	**10.9510**	**5.9074**	**0.0118**	**6.5523**	**0.5417**	**7.0940**	**3.3675**	**0.4984**	**3.8658**	**0.0000**	**1,144.6651**	**1,144.6651**	**0.3702**		**1,153.9203**

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

3.3 Subgrade 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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0252	0.0144	0.1983	5.8000e-004	0.0609	3.3000e-004	0.0612	0.0161	3.0000e-004	0.0164		58.5743	58.5743	1.7100e-003	1.5100e-003	59.0662
Total	**0.0252**	**0.0144**	**0.1983**	**5.8000e-004**	**0.0609**	**3.3000e-004**	**0.0612**	**0.0161**	**3.0000e-004**	**0.0164**		**58.5743**	**58.5743**	**1.7100e-003**	**1.5100e-003**	**59.0662**

3.4 AB Placement/Compaction/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					0.2121	0.0000	0.2121	0.0229	0.0000	0.0229			0.0000			0.0000
Off-Road	1.4461	15.4549	9.3662	0.0285		0.5423	0.5423		0.4989	0.4989		2,755.9865	2,755.9865	0.8913		2,778.2700
Total	**1.4461**	**15.4549**	**9.3662**	**0.0285**	**0.2121**	**0.5423**	**0.7544**	**0.0229**	**0.4989**	**0.5218**		**2,755.9865**	**2,755.9865**	**0.8913**		**2,778.2700**

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

3.4 AB Placement/Compaction/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	lb/day										lb/day					
Hauling	0.1732	6.2653	1.3290	0.0260	0.7361	0.0640	0.8001	0.2019	0.0612	0.2632		2,757.0584	2,757.0584	0.0177	0.4336	2,886.7153
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0315	0.0180	0.2479	7.2000e-004	0.0761	4.1000e-004	0.0765	0.0202	3.8000e-004	0.0206		73.2179	73.2179	2.1400e-003	1.8800e-003	73.8327
Total	**0.2046**	**6.2833**	**1.5769**	**0.0267**	**0.8122**	**0.0644**	**0.8766**	**0.2221**	**0.0616**	**0.2837**		**2,830.2762**	**2,830.2762**	**0.0198**	**0.4355**	**2,960.5480**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2121	0.0000	0.2121	0.0229	0.0000	0.0229			0.0000			0.0000
Off-Road	1.4461	15.4549	9.3662	0.0285		0.5423	0.5423		0.4989	0.4989	0.0000	2,755.9865	2,755.9865	0.8913		2,778.2700
Total	**1.4461**	**15.4549**	**9.3662**	**0.0285**	**0.2121**	**0.5423**	**0.7544**	**0.0229**	**0.4989**	**0.5218**	**0.0000**	**2,755.9865**	**2,755.9865**	**0.8913**		**2,778.2700**

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

3.4 AB Placement/Compaction/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	lb/day										lb/day					
Hauling	0.1732	6.2653	1.3290	0.0260	0.7361	0.0640	0.8001	0.2019	0.0612	0.2632		2,757.0584	2,757.0584	0.0177	0.4336	2,886.7153
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0315	0.0180	0.2479	7.2000e-004	0.0761	4.1000e-004	0.0765	0.0202	3.8000e-004	0.0206		73.2179	73.2179	2.1400e-003	1.8800e-003	73.8327
Total	**0.2046**	**6.2833**	**1.5769**	**0.0267**	**0.8122**	**0.0644**	**0.8766**	**0.2221**	**0.0616**	**0.2837**		**2,830.2762**	**2,830.2762**	**0.0198**	**0.4355**	**2,960.5480**

3.5 Asphalt Placement - 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	2.7885	29.3165	18.1396	0.0471		1.2066	1.2066		1.1100	1.1100		4,555.9346	4,555.9346	1.4735		4,592.7717
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7885**	**29.3165**	**18.1396**	**0.0471**		**1.2066**	**1.2066**		**1.1100**	**1.1100**		**4,555.9346**	**4,555.9346**	**1.4735**		**4,592.7717**

Solano County Chip & Grind - Solano-Sacramento County, Summer

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

3.5 Asphalt Placement - 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	lb/day										lb/day					
Hauling	0.0990	3.5802	0.7594	0.0148	0.4206	0.0366	0.4572	0.1154	0.0350	0.1504		1,575.4619	1,575.4619	0.0101	0.2478	1,649.5516
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0566	0.0325	0.4462	1.3000e-003	0.1369	7.3000e-004	0.1377	0.0363	6.8000e-004	0.0370		131.7922	131.7922	3.8500e-003	3.3900e-003	132.8989
Total	**0.1556**	**3.6126**	**1.2056**	**0.0161**	**0.5576**	**0.0373**	**0.5949**	**0.1517**	**0.0357**	**0.1874**		**1,707.2541**	**1,707.2541**	**0.0139**	**0.2512**	**1,782.4505**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7885	29.3165	18.1396	0.0471		1.2066	1.2066		1.1100	1.1100	0.0000	4,555.9346	4,555.9346	1.4735		4,592.7717
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7885**	**29.3165**	**18.1396**	**0.0471**		**1.2066**	**1.2066**		**1.1100**	**1.1100**	**0.0000**	**4,555.9346**	**4,555.9346**	**1.4735**		**4,592.7717**

Solano County Chip & Grind - Solano-Sacramento County, Summer

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

3.5 Asphalt Placement - 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	lb/day										lb/day					
Hauling	0.0990	3.5802	0.7594	0.0148	0.4206	0.0366	0.4572	0.1154	0.0350	0.1504		1,575.4619	1,575.4619	0.0101	0.2478	1,649.5516
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0566	0.0325	0.4462	1.3000e-003	0.1369	7.3000e-004	0.1377	0.0363	6.8000e-004	0.0370		131.7922	131.7922	3.8500e-003	3.3900e-003	132.8989
Total	**0.1556**	**3.6126**	**1.2056**	**0.0161**	**0.5576**	**0.0373**	**0.5949**	**0.1517**	**0.0357**	**0.1874**		**1,707.2541**	**1,707.2541**	**0.0139**	**0.2512**	**1,782.4505**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	10.00	5.00	7.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.554526	0.053831	0.165930	0.132086	0.027621	0.006783	0.007681	0.014870	0.000982	0.000404	0.029673	0.000793	0.004819

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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

Solano County Chip & Grind

Solano-Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	56
Climate Zone	4			**Operational Year**	2023
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 - 5.25-acre site - one acre would be improved (the rest is already hardscaped)

Construction Phase - Moore, Richard. Personal Communication. January 3, 2022.

Off-road Equipment - Moore, Richard. Personal Communication. January 3, 2022.

Off-road Equipment - Moore, Richard. Personal Communication. January 3, 2022.

Off-road Equipment - Moore, Richard. Personal Communication. January 3, 2022.

Off-road Equipment - Moore, Richard. Personal Communication. January 3, 2022.

Trips and VMT - 44 loads of concrete blocks, 105 loads of AB, and 60 loads of asphalt. Moore, Richard. Personal Communication. January 3, 2022.

Grading - one acre portion of site being improved

Vehicle Trips - operational emissions calculated with EMFAC

Consumer Products - none

Area Coating -

Solano County Chip & Grind - Solano-Sacramento County, Winter

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

Landscape Equipment - no landscaping

Energy Use - Roughly 3,000 square feet of existing building and new scale -- 3,000 square foot building = 56,410 kWh in CalEEMod

Water And Wastewater - Best estimates based on size of office and water needs for operations

Solid Waste - Minor solid waste generation from the minimal employees

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	230.00	5.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	10.00	2.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblEnergyUse	NT24E	0.00	56,410.00
tblGrading	AcresOfGrading	5.00	1.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	HorsePower	100.00	120.00
tblOffRoadEquipment	HorsePower	8.00	200.00
tblOffRoadEquipment	HorsePower	80.00	100.00
tblOffRoadEquipment	HorsePower	402.00	300.00
tblOffRoadEquipment	HorsePower	97.00	170.00
tblOffRoadEquipment	HorsePower	80.00	100.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
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

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

tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	0.00	0.25
tblTripsAndVMT	HaulingTripNumber	0.00	88.00
tblTripsAndVMT	HaulingTripNumber	0.00	210.00
tblTripsAndVMT	HaulingTripNumber	0.00	120.00
tblTripsAndVMT	WorkerTripNumber	0.00	4.00
tblWater	IndoorWaterUseRate	0.00	100,000.00
tblWater	OutdoorWaterUseRate	0.00	1,500,000.00

2.0 Emissions Summary

Solano County Chip & Grind - Solano-Sacramento County, Winter

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	2.9386	33.1882	19.3402	0.0631	6.6132	1.2439	7.1552	3.3836	1.1457	3.8823	0.0000	6,253.4024	6,253.4024	1.4879	0.4361	6,365.6727
Maximum	**2.9386**	**33.1882**	**19.3402**	**0.0631**	**6.6132**	**1.2439**	**7.1552**	**3.3836**	**1.1457**	**3.8823**	**0.0000**	**6,253.4024**	**6,253.4024**	**1.4879**	**0.4361**	**6,365.6727**

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					
2022	2.9386	33.1882	19.3402	0.0631	6.6132	1.2439	7.1552	3.3836	1.1457	3.8823	0.0000	6,253.4024	6,253.4024	1.4879	0.4361	6,365.6727
Maximum	**2.9386**	**33.1882**	**19.3402**	**0.0631**	**6.6132**	**1.2439**	**7.1552**	**3.3836**	**1.1457**	**3.8823**	**0.0000**	**6,253.4024**	**6,253.4024**	**1.4879**	**0.4361**	**6,365.6727**

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

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Construction Concrete Bunker	Building Construction	8/1/2022	8/5/2022	5	5	
2	Subgrade Preparation	Site Preparation	8/6/2022	8/9/2022	5	2	
3	AB Placement/Compaction/Grading	Grading	8/10/2022	8/16/2022	5	5	
4	Asphalt Placement	Paving	8/17/2022	8/23/2022	5	5	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Construction Concrete Bunker	Rough Terrain Forklifts	1	8.00	120	0.40
Subgrade Preparation	Plate Compactors	1	8.00	200	0.43
Subgrade Preparation	Rollers	1	8.00	100	0.38
Subgrade Preparation	Rubber Tired Dozers	1	8.00	247	0.40
AB Placement/Compaction/Grading	Graders	2	8.00	187	0.41
AB Placement/Compaction/Grading	Off-Highway Trucks	1	8.00	300	0.38
AB Placement/Compaction/Grading	Tractors/Loaders/Backhoes	1	8.00	170	0.37

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

Asphalt Placement	Graders	2	8.00	187	0.41
Asphalt Placement	Off-Highway Trucks	1	8.00	402	0.38
Asphalt Placement	Pavers	1	8.00	130	0.42
Asphalt Placement	Paving Equipment	1	8.00	132	0.36
Asphalt Placement	Rollers	1	8.00	100	0.38
Asphalt Placement	Rubber Tired Dozers	1	8.00	247	0.40

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
Construction Concrete Bunker	1	4.00	0.00	88.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Subgrade Preparation	3	8.00	0.00	0.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
AB Placement/Compactio	4	10.00	0.00	210.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Placement	7	18.00	0.00	120.00	10.00	7.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Construction Concrete Bunker - 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	0.1342	1.7764	2.7461	4.1400e-003		0.0620	0.0620		0.0570	0.0570		400.5054	400.5054	0.1295		403.7437
Total	**0.1342**	**1.7764**	**2.7461**	**4.1400e-003**		**0.0620**	**0.0620**		**0.0570**	**0.0570**		**400.5054**	**400.5054**	**0.1295**		**403.7437**

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

3.2 Construction Concrete Bunker - 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	lb/day										lb/day					
Hauling	0.0700	2.8093	0.5687	0.0109	0.3085	0.0269	0.3353	0.0846	0.0257	0.1103		1,156.1505	1,156.1505	7.2800e-003	0.1818	1,210.5204
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0121	9.0800e-003	0.0945	2.6000e-004	0.0304	1.6000e-004	0.0306	8.0700e-003	1.5000e-004	8.2200e-003		26.8664	26.8664	1.0000e-003	8.8000e-004	27.1536
Total	**0.0822**	**2.8184**	**0.6632**	**0.0112**	**0.3389**	**0.0270**	**0.3659**	**0.0927**	**0.0259**	**0.1185**		**1,183.0170**	**1,183.0170**	**8.2800e-003**	**0.1827**	**1,237.6741**

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	0.1342	1.7764	2.7461	4.1400e-003		0.0620	0.0620		0.0570	0.0570	0.0000	400.5054	400.5054	0.1295		403.7437
Total	**0.1342**	**1.7764**	**2.7461**	**4.1400e-003**		**0.0620**	**0.0620**		**0.0570**	**0.0570**	**0.0000**	**400.5054**	**400.5054**	**0.1295**		**403.7437**

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

3.2 Construction Concrete Bunker - 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	lb/day										lb/day					
Hauling	0.0700	2.8093	0.5687	0.0109	0.3085	0.0269	0.3353	0.0846	0.0257	0.1103		1,156.1505	1,156.1505	7.2800e-003	0.1818	1,210.5204
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0121	9.0800e-003	0.0945	2.6000e-004	0.0304	1.6000e-004	0.0306	8.0700e-003	1.5000e-004	8.2200e-003		26.8664	26.8664	1.0000e-003	8.8000e-004	27.1536
Total	**0.0822**	**2.8184**	**0.6632**	**0.0112**	**0.3389**	**0.0270**	**0.3659**	**0.0927**	**0.0259**	**0.1185**		**1,183.0170**	**1,183.0170**	**8.2800e-003**	**0.1827**	**1,237.6741**

3.3 Subgrade 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	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.0450	10.9510	5.9074	0.0118		0.5417	0.5417		0.4984	0.4984		1,144.6651	1,144.6651	0.3702		1,153.9203
Total	**1.0450**	**10.9510**	**5.9074**	**0.0118**	**6.5523**	**0.5417**	**7.0940**	**3.3675**	**0.4984**	**3.8658**		**1,144.6651**	**1,144.6651**	**0.3702**		**1,153.9203**

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

3.3 Subgrade 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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0243	0.0182	0.1890	5.3000e-004	0.0609	3.3000e-004	0.0612	0.0161	3.0000e-004	0.0164		53.7328	53.7328	1.9900e-003	1.7600e-003	54.3073
Total	**0.0243**	**0.0182**	**0.1890**	**5.3000e-004**	**0.0609**	**3.3000e-004**	**0.0612**	**0.0161**	**3.0000e-004**	**0.0164**		**53.7328**	**53.7328**	**1.9900e-003**	**1.7600e-003**	**54.3073**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.0450	10.9510	5.9074	0.0118		0.5417	0.5417		0.4984	0.4984	0.0000	1,144.6651	1,144.6651	0.3702		1,153.9203
Total	**1.0450**	**10.9510**	**5.9074**	**0.0118**	**6.5523**	**0.5417**	**7.0940**	**3.3675**	**0.4984**	**3.8658**	**0.0000**	**1,144.6651**	**1,144.6651**	**0.3702**		**1,153.9203**

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

3.3 Subgrade 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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0243	0.0182	0.1890	5.3000e-004	0.0609	3.3000e-004	0.0612	0.0161	3.0000e-004	0.0164		53.7328	53.7328	1.9900e-003	1.7600e-003	54.3073
Total	**0.0243**	**0.0182**	**0.1890**	**5.3000e-004**	**0.0609**	**3.3000e-004**	**0.0612**	**0.0161**	**3.0000e-004**	**0.0164**		**53.7328**	**53.7328**	**1.9900e-003**	**1.7600e-003**	**54.3073**

3.4 AB Placement/Compaction/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					0.2121	0.0000	0.2121	0.0229	0.0000	0.0229			0.0000			0.0000
Off-Road	1.4461	15.4549	9.3662	0.0285		0.5423	0.5423		0.4989	0.4989		2,755.9865	2,755.9865	0.8913		2,778.2700
Total	**1.4461**	**15.4549**	**9.3662**	**0.0285**	**0.2121**	**0.5423**	**0.7544**	**0.0229**	**0.4989**	**0.5218**		**2,755.9865**	**2,755.9865**	**0.8913**		**2,778.2700**

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

3.4 AB Placement/Compaction/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	lb/day										lb/day					
Hauling	0.1671	6.7041	1.3571	0.0260	0.7361	0.0641	0.8002	0.2019	0.0613	0.2632		2,758.9956	2,758.9956	0.0174	0.4339	2,888.7419
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0303	0.0227	0.2362	6.6000e-004	0.0761	4.1000e-004	0.0765	0.0202	3.8000e-004	0.0206		67.1660	67.1660	2.4900e-003	2.2000e-003	67.8841
Total	**0.1975**	**6.7268**	**1.5933**	**0.0266**	**0.8122**	**0.0645**	**0.8767**	**0.2221**	**0.0617**	**0.2838**		**2,826.1616**	**2,826.1616**	**0.0199**	**0.4361**	**2,956.6260**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2121	0.0000	0.2121	0.0229	0.0000	0.0229			0.0000			0.0000
Off-Road	1.4461	15.4549	9.3662	0.0285		0.5423	0.5423		0.4989	0.4989	0.0000	2,755.9865	2,755.9865	0.8913		2,778.2700
Total	**1.4461**	**15.4549**	**9.3662**	**0.0285**	**0.2121**	**0.5423**	**0.7544**	**0.0229**	**0.4989**	**0.5218**	**0.0000**	**2,755.9865**	**2,755.9865**	**0.8913**		**2,778.2700**

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

3.4 AB Placement/Compaction/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	lb/day										lb/day					
Hauling	0.1671	6.7041	1.3571	0.0260	0.7361	0.0641	0.8002	0.2019	0.0613	0.2632		2,758.9956	2,758.9956	0.0174	0.4339	2,888.7419
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0303	0.0227	0.2362	6.6000e-004	0.0761	4.1000e-004	0.0765	0.0202	3.8000e-004	0.0206		67.1660	67.1660	2.4900e-003	2.2000e-003	67.8841
Total	**0.1975**	**6.7268**	**1.5933**	**0.0266**	**0.8122**	**0.0645**	**0.8767**	**0.2221**	**0.0617**	**0.2838**		**2,826.1616**	**2,826.1616**	**0.0199**	**0.4361**	**2,956.6260**

3.5 Asphalt Placement - 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	2.7885	29.3165	18.1396	0.0471		1.2066	1.2066		1.1100	1.1100		4,555.9346	4,555.9346	1.4735		4,592.7717
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7885**	**29.3165**	**18.1396**	**0.0471**		**1.2066**	**1.2066**		**1.1100**	**1.1100**		**4,555.9346**	**4,555.9346**	**1.4735**		**4,592.7717**

Solano County Chip & Grind - Solano-Sacramento County, Winter

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

3.5 Asphalt Placement - 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	lb/day										lb/day					
Hauling	0.0955	3.8309	0.7755	0.0148	0.4206	0.0366	0.4573	0.1154	0.0350	0.1504		1,576.5689	1,576.5689	9.9300e-003	0.2480	1,650.7097
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0546	0.0409	0.4252	1.1900e-003	0.1369	7.3000e-004	0.1377	0.0363	6.8000e-004	0.0370		120.8988	120.8988	4.4800e-003	3.9600e-003	122.1914
Total	**0.1501**	**3.8718**	**1.2007**	**0.0160**	**0.5576**	**0.0374**	**0.5949**	**0.1517**	**0.0357**	**0.1874**		**1,697.4678**	**1,697.4678**	**0.0144**	**0.2519**	**1,772.9010**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7885	29.3165	18.1396	0.0471		1.2066	1.2066		1.1100	1.1100	0.0000	4,555.9346	4,555.9346	1.4735		4,592.7717
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7885**	**29.3165**	**18.1396**	**0.0471**		**1.2066**	**1.2066**		**1.1100**	**1.1100**	**0.0000**	**4,555.9346**	**4,555.9346**	**1.4735**		**4,592.7717**

Solano County Chip & Grind - Solano-Sacramento County, Winter

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

3.5 Asphalt Placement - 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	lb/day										lb/day					
Hauling	0.0955	3.8309	0.7755	0.0148	0.4206	0.0366	0.4573	0.1154	0.0350	0.1504		1,576.5689	1,576.5689	9.9300e-003	0.2480	1,650.7097
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0546	0.0409	0.4252	1.1900e-003	0.1369	7.3000e-004	0.1377	0.0363	6.8000e-004	0.0370		120.8988	120.8988	4.4800e-003	3.9600e-003	122.1914
Total	**0.1501**	**3.8718**	**1.2007**	**0.0160**	**0.5576**	**0.0374**	**0.5949**	**0.1517**	**0.0357**	**0.1874**		**1,697.4678**	**1,697.4678**	**0.0144**	**0.2519**	**1,772.9010**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	10.00	5.00	7.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.554526	0.053831	0.165930	0.132086	0.027621	0.006783	0.007681	0.014870	0.000982	0.000404	0.029673	0.000793	0.004819

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Solano County Chip & Grind - Solano-Sacramento County, Winter

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

AQ Emissions Operational Summary

	Average Daily Emissions (pounds/day)					Annual Emissions (tons/year)				
	ROG	CO	NOX	PM10	PM2.5	ROG	CO	NOX	PM10	PM2.5
OnRoad Mobile Vehicles	0.20	2.57	9.89	0.53	0.26	0.03	0.40	1.55	0.08	0.04
OffRoad Equipment	0.85	12.50	13.93	0.31	0.29	0.13	1.96	2.18	0.05	0.04
TOTAL	**1.05**	**15.07**	**23.81**	**0.84**	**0.55**	**0.16**	**2.36**	**3.73**	**0.13**	**0.09**

GHG Emissions Operational Summary

Annual GHG Emissions (Metric tons/year)	
Construction	32.3
30-yr Amortized Construction	1.1
On Road Mobile Vehicles	797.7
OffRoad Equipment	484.0
Energy	5.2
Waste	0.1
Water	0.7
Total	**1288.7**

Fuel Usage Summary	**Annual Gallons**
Gasoline (gallons)	931
Diesel (gallons)	127,533

Off-Road On-Site Mobile Equipment

Year 2023 Offroad Emissions					Emission Factor (g/hp-hour)							Daily Emissions (lbs/day)					Annual Emissions (tons/year)					Annual Emissions (Metric tons/year)		
Equipment Type	**Quantity**	**Horsepower**	**Hours Per Day**	**Load Factor**	**ROG**	**Nox**	**PM10**	**PM2.5**	**CO**	**CO2**	**CH4**	**ROG**	**Nox**	**PM10**	**PM2.5**	**CO**	**ROG**	**Nox**	**PM10**	**PM2.5**	**CO**	**CO2e**		
Tracked Grinder	1	1050	4	0.40	0.054	2.26751	0.018	0.017	0.93935	472.0545	0.153	0.2000	8.3983	0.0667	0.0630	3.4791	0.0313	1.3143	0.0104	0.0099	0.5445	250.4776		
Loader	1	170	6	0.37	0.184	1.52095	0.077	0.07	3.0777	468.821	0.152	0.1531	1.2655	0.0641	0.0582	2.5607	0.0240	0.1980	0.0100	0.0091	0.4008	55.8827		
Excavator	1	170	6	0.38	0.178	1.46245	0.072	0.066	3.07648	472.277	0.153	0.1521	1.2497	0.0615	0.0564	2.6289	0.0238	0.1956	0.0096	0.0088	0.4114	57.8158		
Skid Steer	1	70	4	0.37	0.153	2.03854	0.069	0.063	3.26613	472.656	0.153	0.0349	0.4656	0.0158	0.0144	0.7460	0.0055	0.0729	0.0025	0.0023	0.1167	15.4656		
Screen	1	100	6	0.40	0.225	2.29768	0.104	0.095	3.51535	473.5884	0.153	0.1190	1.2157	0.0550	0.0503	1.8600	0.0186	0.1903	0.0086	0.0079	0.2911	35.8977		
Water Truck	1	300	4	0.38	0.187	1.32428	0.048	0.044	1.22057	475.0488	0.154	0.1880	1.3313	0.0483	0.0442	1.2270	0.0294	0.2083	0.0076	0.0069	0.1920	68.4181		
												0.8472	**13.9261**	**0.3113**	**0.2865**	**12.5018**	**0.1326**	**2.1794**	**0.0487**	**0.0448**	**1.9565**	**483.9576**	47,681	gallons of diesel per year

Source:
OFFROAD EF for year 2023 from CalEEMod Appendix

kg/CO2/gal for diesel

On Road Mobile Vehicle Emissions

Year 2023 Onroad Emissions

				Emission Factor (g/mile)							Daily Emissions (pounds/day)							Annual Emissions (tons/year)							Annual Emissions (metric tons/year)		
Vehicle Type	Round Trips	Average RT VMT	Daily VMT	ROG	CO	NOX	CO2	CH4	PM10	PM2.5	ROG	CO	NOX	CO2	CH4	PM10	PM2.5	ROG	CO	NOX	CO2	CH4	PM10	PM2.5	CO2e	gals Diesel	gals Gasoline
Employee Vehicles	6	16.0	96	0.01	0.61	0.05	276	0.003	0.05	0.02	0.00	0.13	0.01	58	0.001	0.01	0.00	0.00	0.02	0.00	9.14	0.00	0.00	0.00	8		931
Inbound Feedstock	15	76.4	1146	0.02	0.16	2.03	1,266	0.001	0.13	0.06	0.05	0.40	5.14	3,199	0.002	0.32	0.16	0.01	0.06	0.80	500.59	0.00	0.05	0.02	454	50,969	
Inbound Amendments	10	40.0	400	0.02	0.16	2.03	1,266	0.001	0.13	0.06	0.02	0.14	1.79	1,116	0.001	0.11	0.05	0.00	0.02	0.28	174.72	0.00	0.02	0.01	159	15,617	
Outbound Feedstock	15	80.0	1200	0.02	0.16	2.03	1,266	0.001	0.13	0.06	0.05	0.42	5.38	3,349	0.002	0.33	0.16	0.01	0.07	0.84	524.17	0.00	0.05	0.03	476	46,850	
Backhauling Loads Trip Reduction	-11	78.2	-860	0.02	0.16	2.03	1,266	0.001	0.13	0.06	(0.04)	(0.30)	(3.86)	(2,401)	(0.002)	(0.24)	(0.12)	(0.01)	(0.05)	(0.60)	(375.75)	(0.00)	(0.04)	(0.02)	(341)	(33,584)	
TOTAL	35		1982								**0.08**	**0.80**	**8.47**	**5,322**	**0.004**	**0.53**	**0.26**	**0.01**	**0.12**	**1.33**	**833**	**0.001**	**0.08**	**0.04**	**756**	79,852	931

		Emission Factor (g/vehicle/day)							Daily Emissions (pounds/day)							Annual Emissions (tons/year)							Annual Emissions (metric tons/year)	
Vehicle Type	Trucks Per Day	ROG	CO	NOX	CO2	CH4	PM10	PM2.5	ROG	CO	NOX	CO2	CH4	PM10	PM2.5	ROG	CO	NOX	CO2	CH4	PM10	PM2.5	CO2e	gals Diesel
Inbound/Outbound Trucks	29	1.88	27.77	22.21	4,637	0.087	0.01	0.01	0.12	1.78	1.42	296.46	0.01	0.00	0.00	0.02	0.28	0.22	46.40	0.00	0.00	0.00	42	4,726

313 days per year
10.15 kg/CO2/gal for kg/CO2/gal for diesel
8.91 kg/CO2/gal for kg/CO2/gal for gasoline

Total - OnRoad + Idling

Daily Emissions (pounds/day)							Annual Emissions (tons/year)							Annual Emissions (metric tons/year)		
ROG	CO	NOX	CO2	CH4	PM10	PM2.5	ROG	CO	NOX	CO2	CH4	PM10	PM2.5	CO2e	gals Diesel	gals Gasoline
0.20	2.57	9.89	5,618.38	0.01	0.53	0.26	0.03	0.40	1.55	879.28	0.00	0.08	0.04	798	84,579	931