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# CALEEMOD AIR QUALITY/GHG STUDY

**Rami Fahil**

4415 Wilson Road, Bakersfield, CA 93309

*Prepared by*



1322 East Shaw Avenue, Suite 400  
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**March 2023**



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March 27, 2023

**Rami Fahil**  
4415 Wilson Road  
Bakersfield, CA 93309

**RE: CALEEMOD Air Quality/GHG Study, 4415 Wilson Road, Bakersfield, CA 93309**

Dear Mr. Fahil:

Soar Environmental Consulting, Inc. is pleased to submit has performed this assessment under my supervision in accordance with accepted environmental practices and procedures, as of the date of this report. I declare that, to the best of my professional knowledge and belief, I meet the definition of environmental professional as defined in 312.10 of 40 CFR 312. I have employed a degree of care and skill ordinarily exercised under similar circumstances by reputable environmental professionals practicing in this area. The conclusions contained within this assessment are based upon site conditions readily observed or were reasonably ascertainable.

*Matthew D. Fidel*  
Matthew D. Fidel, Senior Project Manager  
Soar Environmental Consulting



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## **1.0 Project Description**

The proposed project is located at 4415 Wilson Road, Bakersfield, CA 93309 and involves the development and construction of the property for a High-Medium Density Residential development. The 6-acre parcel is currently occupied by a vacant event space on the northern half of the parcel. The southern half of the Wilson Road parcel is occupied by open space with ornamental landscaping. Therefore, minimal demolition will be required.

The proposed project is in an urbanized area and is surrounded by various commercial and residential properties. The nearest sensitive receptors to the project site are adjacent residences to the east and south, an elementary school and residences across Wilson Road to the north, and a Salvation Army center adjacent to the west. The adjacent parcels to the east, west, and south are approximately 150 feet from the center of the proposed project site. The elementary school and residences across Wilson Road to the north are approximately 400 feet from the center of the proposed project site. The nearest airport is Bakersfield Municipal Airport, approximately three miles west of the proposed project site.

## **2.0 Assumptions**

The following basic assumptions were used in developing the emission estimates for the proposed project using the California Emissions Estimator Model® (**CalEEMod**):

- CalEEMod defaults are applied to all phases of the project unless otherwise specified.
- Institute of Traffic Engineers (ITE) default trip distances for Kern County, as contained in CalEEMod, were assumed for the operational traffic analysis.
- Some project design features including sizes and the number of buildings were defined by the Applicant and replaced with some CalEEMod default settings.
- CalEEMod construction timelines are generally accurate unless otherwise stated.
- During the site preparation and grading phases of construction, it is anticipated that no soil will need to be exported from or imported to the project site.
- The default equipment from CalEEMod for each construction phase is representative of actual construction equipment used during construction.

## **3.0 Air Quality and Greenhouse Gas Impacts Analysis**

Appendix G of the California Environmental Quality Act (CEQA) Guidelines contains an Environmental Checklist Form which consists of a series of questions intended to encourage a thoughtful assessment of impacts. To evaluate the questions in the Air Quality and Greenhouse Gas Emissions Sections of the checklist, quantitative significance criteria established by the local air quality agency, such as SJVAPCD, may be relied upon to make significance determinations based on mass emissions of criteria pollutants and GHGs, as determined in this report.

### **3.1 Project Emissions Estimation**

The construction and operation analysis were performed using CalEEMod version 2020.4.0, the official statewide land use computer model designed to provide a uniform platform for estimating potential



criteria pollutant and GHG emissions associated with both construction and operations of land use projects under CEQA. The model quantifies direct emissions from construction and operations (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The mobile source emission factors used in the model –published by the California Air Resources Board (CARB) – include the Pavley standards and Low Carbon Fuel standards. The model also identifies project design features, regulatory measures, and mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from the selected measures. CalEEMod was developed by the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the San Joaquin Valley Air Pollution Control District (SJVAPCD), the Bay Area Air Quality Management District (BAAQMD), the South Coast Air Quality Management District (SCAQMD), and other California air districts. Default land use data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) were provided by the various California air districts to account for local requirements and conditions. As the official assessment methodology for land use projects in California, CalEEMod is relied upon herein for construction and operational emissions quantification, which forms the basis for the impact analysis.

Based on information received from the Applicant, land use data for CalEEMod input is presented in **Table 1**. The total parcel area is approximately six acres. The SJVAPCD quantitative significance thresholds shown in **Table 2** were used to evaluate project emissions impacts (SJVAPCD 2015).

**Table 1**  
**Land Use Data for CalEEMod Input – 4415 Wilson Road, Bakersfield, CA**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area (Approx.)	Population (Approx.)
Apartments - Mid Rise	180	Dwelling Units	4.74	180,000	515
Parking Lot	1.26	Acres	1.26	52,272	0
<b>Total</b>			<b>6</b>	<b>335,000 sqft</b>	<b>515</b>

Source: CalEEMod version 2020.4.0, Applicant 2022





**Table 2**  
**SJVAPCD CEQA Thresholds of Significance**

Pollutant / Precursor	Construction-Related Emissions	Operational Emissions	
	Emissions (tpy)	Emissions (tpy)	Emissions (tpy)
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM 10	15	15	15
PM 2.5	15	15	15

Source: SJVAPCD 2015

### 3.2 Criteria Pollutants from Project Construction

A project’s construction phase produces various types of emissions, but PM10 and PM2.5 in fugitive dust and diesel engine exhaust are the pollutants of greatest concern. Fugitive dust emissions can result from a variety of construction activities, including excavation, grading, demolition, vehicle travel on paved and unpaved surfaces, and vehicle exhaust. Construction-related emissions can cause substantial increases in localized concentrations of PM10, as well as affecting PM10 compliance with ambient air quality standards on a regional basis. Particulate emissions from construction activities can lead to adverse health effects as well as nuisance concerns such as reduced visibility and soiling of exposed surfaces. The use of diesel-powered construction equipment emits ozone precursors oxides of nitrogen (NOx) and reactive organic gases (ROG), and diesel particulate matter (DPM). The use of architectural coatings and other materials associated with finishing buildings may also emit Reactive Organic Gases (ROG). CEQA significant thresholds address the impacts of construction activity emissions on local and regional air quality.

PM10 emitted during construction can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors making quantification difficult. Despite this variability in emissions, experience has shown that there are several feasible control measures that can be reasonably implemented to significantly reduce fugitive dust emissions from construction.



### **3.3 Criteria Pollutants from Project Operation**

The term “project operations” refers to the full range of activities that can or may generate criteria pollutant and GHG emissions when the project is functioning in its intended use. For projects, such as office parks, shopping centers, apartment buildings, residential subdivisions, and other indirect sources, motor vehicles traveling to and from the project represent the primary source of air pollutant emissions. For industrial projects and some commercial projects, equipment operation and manufacturing processes, i.e., permitted stationary sources, can be of greatest concern from an emissions standpoint. CEQA significance thresholds address the impacts of operational emission sources on local and regional air quality.

### **3.4 Regulatory Setting**

#### **3.4.1 Federal**

##### **Clean Air Act**

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the National Ambient Air Quality Standards (NAAQS), with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that carbon dioxide (CO<sub>2</sub>) is an air pollutant covered by the CAA; however, no NAAQS has been established for CO<sub>2</sub>.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect public health and welfare. They are designed to protect those “sensitive receptors” most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other diseases or illnesses, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. The USEPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether the NAAQS have been achieved.

#### **3.4.2 State**

##### **California Clean Air Act (CCAA)**

The CCAA allows the state to adopt ambient air quality standards and other regulations if they are at least as stringent as federal standards. California Air Resources Board (CARB), a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the California Ambient Air Quality Standards (CAAQS). CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and diverse types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of



California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register. The SFBAAB Air Quality Attainment Plan constitutes the current SIP for the Kern County portion of the SFBAAB. The SIP is updated on a triennial basis and was last updated in 2018. It presents comprehensive strategies to reduce the O3 precursor pollutants (ROG and NOx) from the stationary, area, mobile, and indirect sources.

### **3.4.3 Local**

#### **San Joaquin Valley Air Pollution Control District**

The District's primary responsibility is the control of air pollution from stationary sources (sources other than direct motor vehicle emissions, which are the responsibility of the ARB and EPA). Permitting stationary sources provides a number of benefits to the public and to regulated sources. It provides an opportunity for the project proponent, the District, and the interested public to provide input and assess a project's compliance with federal, state, and local air requirements prior to beginning construction. It also provides a mechanism to consolidate and simplify the applicable air regulations in one brief document, and it provides guidance to both the applicant and the District that can be used on an ongoing basis to assure that the equipment or process is operating in compliance with those rules.

Because of the severity of the air quality problems, permits are required in the Valley for very small sources of emissions; as little as two pounds of emissions per day can trigger permitting requirements. The permitting process involves two steps. The first step requires the applicant to apply for and receive an Authority to Construct (ATC) permit. Construction of new or modified facilities or equipment may not legally proceed until an ATC is issued by the district. The requirements that must be met to obtain a permit in the Valley are among the strictest in the nation, requiring mitigation of emissions using the best available control technology (BACT) and for non-agricultural sources offsetting emissions when above certain thresholds (SB 700). The second step, issuing the Permit to Operate (PTO), occurs after the applicant has properly installed the equipment allowed by the Authority to Construct.

In addition to permitting the stationary sources, the District is required by the CCAA to develop "indirect source" control programs in their attainment plans. Indirect sources are defined as any building, facility, activity center, etc. that attracts motor vehicle trips. The District committed to reducing PM10 and NOx emissions from indirect sources in the 2003 PM10 Plan and the 2004 Extreme Ozone Attainment Demonstration Plan. The District's Governing Board adopted District Rule 9510 (Indirect Source Review) in October 2006 as a result of this commitment. District Rule 9510 requires applicants to mitigate





project impacts through the incorporation of on-site emission-reducing design elements and/or the payment of fees that would be used to fund off-site emissions-reduction projects.

The District's Air Quality Attainment Plans include measures to promote air quality elements in county and city general plans as one of the primary indirect source programs. The general plan is the primary long-range planning document used by cities and counties to direct development. Since air districts have no authority over land use decisions, it is up to cities and counties to ensure that their general plans help achieve air quality goals

The Air Quality Guidelines for General Plans (AQGGP), adopted by the District in 1994 and amended in 2005, is a guidance document containing goals and policy examples that cities and counties may want to incorporate into their General Plans to satisfy Section 65302.1. When adopted in a general plan and implemented, the suggestions in the AQGGP can reduce vehicle trips and miles traveled and improve air quality. The specific suggestions in the AQGGP are voluntary. The District strongly encourages cities and counties to use their land use and transportation planning authority to help achieve air quality goals by adopting the suggested policies and programs.

#### **SJVAPCD Construction Mitigation Measures**

AB 170 requires general plans to include feasible implementation measures to reduce air quality impacts. Effective types of mitigation depending on the size and type of project being considered. The District, therefore, recommends different mitigation strategies for diverse types of projects.

The District has identified three (3) mitigation strategies, based on project size, which can be used to develop plan-specific feasible mitigation measures.

- 1) General plan updates, large specific plans, new town

#### **Mitigation Strategies:**

- Adopt air quality elements/general plan air quality policies/specific plan policies.
- Adopt Local Air Quality Mitigation Fee Program (Stockton and Turlock have adopted such programs).
- Fund TCM program: transit, bicycle, pedestrian, traffic flow improvements, transportation system management, rideshare, telecommuting, video-conferencing, etc.
- Adopt air quality enhancing design guidelines/standards.
- Designate pedestrian/transit-oriented development areas on general plan/specific plan/planned development land use maps.
- Adopt an ordinance limiting woodburning appliances/fireplace installations.
- Fugitive dust regulation enforcement coordinated with SJVUAPCD.
- Energy efficiency incentive programs.
- Local alternative fuels programs.
- Coordinate the location of land used to separate odor generators and sensitive receptors.



2) General plan amendments, small specific plans, and zone changes.

Mitigation Strategies:

- Apply general plan policies, local ordinances, and programs from above to the project site or adopt similar site-specific programs.
- Provide pedestrian/transit-oriented project design.
- Contribute to Local Air Quality Mitigation Fee Fund.
- Contribute towards TCM implementation programs.
- Commit to on-site improvements, bikeways, transit infrastructure, and pedestrian enhancements.
- Provide traffic flow improvements for areas impacted by the project.

3) Tentative maps, site plans, conditional use permits

Mitigation Strategies:

- Apply general plan policies and local ordinances and programs from above to the project site.
- Pedestrian/Transit-oriented site design.
- Provide on-site improvement: bikeways, transit infrastructure, and pedestrian enhancements.
- Contribute to Local Air Quality Mitigation Fee Fund.
- Contribute to TCM implementation.
- Energy conservation measures are beyond requirements.
- Pay for fleet vehicle conversions to alternative fuels.

### City of Bakersfield General Plan

The City of Bakersfield adopted its Metropolitan Bakersfield General Plan in December 2002 (City of Bakersfield 2002). The applicable air quality goals and policies from the Conservation Element are listed below.

1) Air Quality Goals:

- **Goal one.** Promote air quality that is compatible with health, well-being, and enjoyment of life by controlling point sources and minimizing vehicular trips to reduce air pollutants.
- **Goal two.** Continue working toward the attainment of Federal, State, and Local standards as enforced by the San Joaquin Valley Air Pollution Control District.
- **Goal three.** Reduce the number of vehicular emissions in the planning area.
- **Goal four.** Reduce air pollution associated with agricultural activities.

2) Air Quality Policies:

- **Policy 1.** Comply with and promote SJVAPCD control measures regarding reactive organic gases (ROG). Such measures are focused on: (a) steam-driven good vents, (b) Pseudo-cyclic wells, (c) natural gas processing plant fugitives, (d) heavy oil test stations, (e) light oil production fugitives, (f) refinery pumps and compressors, and (g) vehicle inspection and maintenance.



- **Policy 2.** Encourage land uses and land use practices which do not contribute significantly to air quality degradation.
- **Policy 3.** Require dust abatement measures during significant grading and construction operations.
- **Policy 4.** Consider air pollution impacts when evaluating discretionary permits for land use proposals. Consideration should include:
  - Alternative access routes to reduce traffic congestion.
  - Development phasing to match road capacities.
  - Buffers include increased vegetation to increase emission dispersion and reduce impacts of gaseous or particulate matter on sensitive uses.
- **Policy 5.** Consider the location of sensitive receptors such as schools, hospitals, and housing developments when locating industrial uses to minimize the impact of industrial sources of air pollution.
- **Policy 6.** Participate in alternative fuel programs.
- **Policy 7.** Participate in regional air quality studies and comprehensive programs for air pollution reduction.
- **Policy 9.** Promote public education regarding air quality issues and alternative transportation.
- **Policy 10.** Implement Transportation System Management Program for Metropolitan Bakersfield to improve traffic flow, reduce vehicle trips, and increase street capacity.
- **Policy 11.** Improve the capacity of the existing road system through improved signalization, more right-turn lanes, and traffic control systems.
- **Policy 23.** Encourage the provision of shower and lock facilities by employers, for employees who bicycle or jog to work.
- **Policy 29.** Encourage the use of alternative fuel and low or zero-emission vehicles.

### 3.5 Results of Criteria Emissions Analyses

- **Table 3** shows unmitigated and mitigated criteria construction emissions and evaluates mitigated emissions against SJVAPCD significance thresholds.
- **Table 4** shows unmitigated and mitigated criteria operational emissions and evaluates mitigated emissions against SJVAPCD significance thresholds.

As shown in **Tables 3 and 4**, mass emissions of criteria pollutants from construction and operation are below applicable SJVAPCD significance thresholds, i.e., Less Than Significant (LTS).

**PROJECTED IMPACT:** Less Than Significant

**RECOMMENDED MITIGATION:** None Required



**Table 3  
Construction Emissions Summary and Significance Evaluation**

Criteria Pollutants	Unmitigated	Mitigated	Threshold	Significance
	tons/yr	tons/yr	tons/yr	
ROG (VOC)	1.73	1.73	10	LTS
NOx	2.00	2.00	10	LTS
PM10 (exhaust)	0.08	0.08	15	LTS
PM2.5 (exhaust)	0.08	0.08	15	LTS
PM10/PM2.5 (fugitive dust)	0.45	0.45	BMPs	LTS
CO	2.46	2.46	100	LTS

Source: CalEEMod version 2020.4.0, SJVAPCD 2015

**Table 4: Operational Emissions Summary and Significance Evaluation**

Criteria Pollutants	Unmitigated	Mitigated	Threshold	Significance
	tons/yr	tons/yr	tons/yr	
ROG (VOC)	1.48	1.48	10	LTS
NOx	1.12	1.12	10	LTS
PM10 (exhaust)	0.18	0.18	15	LTS
PM2.5 (exhaust)	0.18	0.18	15	LTS
PM10/PM2.5 (fugitive dust)	1.30	1.30	BMPs	LTS
CO	6.47	6.47	100	LTS

Source: CalEEMod version 2020.4.0, SJVAPCD 2015

### 3.6 Greenhouse Gas Emissions from Construction and Operation

Greenhouse gases, primarily carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous (N<sub>2</sub>O) oxide, collectively reported as carbon dioxide equivalents (CO<sub>2</sub>e), are directly emitted from stationary source combustion





of natural gas in equipment such as water heaters, boilers, process heaters, and furnaces. GHGs are also emitted from mobile sources such as on-road vehicles and off-road construction equipment burning fuels such as gasoline, diesel, biodiesel, propane, or natural gas (compressed or liquefied). Indirect GHG emissions result from electric power generated elsewhere (i.e. power plants) used to operate process equipment, lighting, and utilities at a facility. Also, included in GHG quantification is electric power used to pump the water supply (e.g., aqueducts, wells, pipelines) and disposal and decomposition of municipal waste in landfills. (CARB 2017).

As California's Building Energy Efficiency Standards are updated every three years, the 2019 standards improved upon the 2016 standards for new construction of, and additions and alterations to, residential, commercial, and industrial buildings. The 2019 standards went into effect on January 1, 2020 (CEC 2019).

Since the Title 24 standards require energy conservation features in new construction (e.g., high-efficiency lighting, high-efficiency heating, ventilating, and air-conditioning (HVAC) systems, thermal insulation, double-glazed windows, water-conserving plumbing fixtures, etc.), they indirectly regulate and reduce GHG emissions.

Using CalEEMod, directly on-site and off-site GHG emissions were estimated for construction and operation, and indirect off-site GHG emissions were estimated to account for electric power used by the proposed project, water conveyance, and solid waste disposal.

### **3.7 Results of Greenhouse Gas Emissions Analysis**

The SJVAPCD does not have an adopted threshold of significance for construction-related GHG emissions; however, the air district recommends the quantification and disclosure of construction-generated GHG emissions. The SJVAPCD project-level operational threshold of significance for GHG emissions is the project generation of 1,100 metric tons of CO<sub>2</sub>e per year during operations (bright-line numeric threshold); or the project generation of 4.6 metric tons of CO<sub>2</sub>e per service population (employees + residents) per year during operations (efficiency-based threshold); or compliance with a Qualified GHG Reduction Strategy. However, it is noted that this threshold is based, in part, on the GHG-reducing target established for the year 2020 under AB 32, but the Project would be implemented after the year 2020. Statewide goals for GHG reductions in the years beyond 2020 were codified into state law with the passage of SB 32, which as described previously mandates that California achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. This equates to 40 percent below the statewide GHG reduction target for the year 2020.

Therefore, Project GHG emissions are quantified and compared to the thresholds issued by the California Air Pollution Control Officers Association (CAPCOA), which is an association of air pollution control officers from all 35 local air quality agencies throughout California, including the SJVAPCD. CAPCOA recommends a significant threshold of nine hundred metric tons annually. This threshold is based on a capture rate of 90 percent of land use development projects, which in turn translates into a 90 percent capture rate of all GHG emissions. The 900 metric ton threshold, the lowest promulgated in any region in the state, is considered by CAPCOA to be low enough to capture a substantial fraction of future projects that will be constructed to accommodate future (the year 2050) statewide population and economic growth while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions.



Tables 5 and 6 show unmitigated and mitigated GHG emissions. To show compliance with SJVAPCD use of BPS to show significance, the project would implement applicable and feasible reduction measures.

**Table 5  
Construction Greenhouse Gas Emissions Summary and Significance Evaluation**

Greenhouse Gases	Unmitigated	Mitigated	Threshold	Significance
	MT/yr	MT/yr	MT/yr	
CO2	466.3245	465.6588	N/A	N/A
CH4	0.0798	0.0798	N/A	N/A
N2O	0.0112	0.0112	N/A	N/A
CO2e	471.6674	470.9959	1,100	LTS

Source: CalEEMod version 2020.4.0

**Table 6  
Operational Greenhouse Gas Emissions Summary and Significance Evaluation**

Greenhouse Gases	Unmitigated	Mitigated	Threshold	Significance
	MT/yr	MT/yr	MT/yr	
CO2	1321.99	1321.90	N/A	N/A
CH4	1.5325	1.5325	N/A	N/A
N2O	0.0742	0.0742	N/A	N/A
CO2e	1,382.40	1,382.32	BMPs	LTS

Source: CalEEMod version 2020.4.0

**PROJECTED IMPACT:** Less Than Significant

**RECOMMENDED MITIGATION:** None Required

#### 4.0 Conclusion

The project's emissions would be less than significant for all criteria pollutants and would not result in inconsistency with the air quality plan for this criterion. The project's proposed land use designation would provide uses and development patterns consistent with the land use policies of the Metropolitan Bakersfield General Plan. The project complies with all applicable control measures from the air quality plan therefore, the project is consistent with the air quality plan, and the impact would be less than significant.



## 5.0 References

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The City of Bakersfield. 2002. Metropolitan Bakersfield General Plan. Website: [https://bakersfieldcity.us/gov/depts/development\\_services/planning\\_division/making\\_downtown\\_bakersfield/plan\\_documents.htm](https://bakersfieldcity.us/gov/depts/development_services/planning_division/making_downtown_bakersfield/plan_documents.htm). Accessed March 2023.



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**Appendix A. CalEEMod Outputs**

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Rami Fahil Bakersfield - Kern-San Joaquin County, Annual

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

**Rami Fahil Bakersfield  
Kern-San Joaquin County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	180.00	Dwelling Unit	4.74	180,000.00	515
Parking Lot	1.26	Acre	1.26	54,885.60	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.7	<b>Precipitation Freq (Days)</b>	32
<b>Climate Zone</b>	7			<b>Operational Year</b>	2026
<b>Utility Company</b>	Pacific Gas and Electric Company				
<b>CO2 Intensity (lb/MWhr)</b>	203.98	<b>CH4 Intensity (lb/MWhr)</b>	0.033	<b>N2O Intensity (lb/MWhr)</b>	0.004

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use -

Construction Phase - Only demolishing half of parcel. Edited from 20 to 10 days.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	PhaseEndDate	1/26/2024	1/12/2024

**2.0 Emissions Summary**

Rami Fahil Bakersfield - Kern-San Joaquin County, Annual

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

**2.1 Overall Construction**

**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.2451	1.9968	2.4583	5.2700e-003	0.3222	0.0848	0.4069	0.1259	0.0794	0.2053	0.0000	466.3245	466.3245	0.0798	0.0112	471.6674
2025	1.7306	0.2236	0.3498	6.7000e-004	0.0165	9.5900e-003	0.0261	4.4200e-003	8.9700e-003	0.0134	0.0000	59.3382	59.3382	0.0118	9.9000e-004	59.9298
<b>Maximum</b>	<b>1.7306</b>	<b>1.9968</b>	<b>2.4583</b>	<b>5.2700e-003</b>	<b>0.3222</b>	<b>0.0848</b>	<b>0.4069</b>	<b>0.1259</b>	<b>0.0794</b>	<b>0.2053</b>	<b>0.0000</b>	<b>466.3245</b>	<b>466.3245</b>	<b>0.0798</b>	<b>0.0112</b>	<b>471.6674</b>

**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					
2024	0.2451	1.9968	2.4583	5.2700e-003	0.3222	0.0848	0.4069	0.1259	0.0794	0.2053	0.0000	466.3242	466.3242	0.0798	0.0112	471.6671
2025	1.7306	0.2236	0.3498	6.7000e-004	0.0165	9.5900e-003	0.0261	4.4200e-003	8.9700e-003	0.0134	0.0000	59.3382	59.3382	0.0118	9.9000e-004	59.9297
<b>Maximum</b>	<b>1.7306</b>	<b>1.9968</b>	<b>2.4583</b>	<b>5.2700e-003</b>	<b>0.3222</b>	<b>0.0848</b>	<b>0.4069</b>	<b>0.1259</b>	<b>0.0794</b>	<b>0.2053</b>	<b>0.0000</b>	<b>466.3242</b>	<b>466.3242</b>	<b>0.0798</b>	<b>0.0112</b>	<b>471.6671</b>

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2024	3-31-2024	0.5757	0.5757
2	4-1-2024	6-30-2024	0.5484	0.5484
3	7-1-2024	9-30-2024	0.5544	0.5544
4	10-1-2024	12-31-2024	0.5564	0.5564
5	1-1-2025	3-31-2025	1.9480	1.9480
		Highest	1.9480	1.9480

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0212	0.0970	2.2412	3.3600e-003		0.1560	0.1560		0.1560	0.1560	19.1625	80.1605	99.3230	0.0932	1.4300e-003	102.0782
Energy	0.0147	0.1253	0.0533	8.0000e-004		0.0101	0.0101		0.0101	0.0101	0.0000	213.0189	213.0189	0.0138	3.9900e-003	214.5526
Mobile	0.4429	0.9013	4.1712	0.0106	1.0261	0.0102	1.0363	0.2746	9.5600e-003	0.2842	0.0000	980.8510	980.8510	0.0488	0.0596	999.8222
Waste						0.0000	0.0000		0.0000	0.0000	16.8077	0.0000	16.8077	0.9933	0.0000	41.6403
Water						0.0000	0.0000		0.0000	0.0000	3.7207	8.2657	11.9864	0.3835	9.1900e-003	24.3108
<b>Total</b>	<b>1.4788</b>	<b>1.1236</b>	<b>6.4657</b>	<b>0.0147</b>	<b>1.0261</b>	<b>0.1762</b>	<b>1.2024</b>	<b>0.2746</b>	<b>0.1757</b>	<b>0.4503</b>	<b>39.6908</b>	<b>1,282.2962</b>	<b>1,321.9870</b>	<b>1.5325</b>	<b>0.0742</b>	<b>1,382.4040</b>

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**2.2 Overall Operational**

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0212	0.0970	2.2412	3.3600e-003		0.1560	0.1560		0.1560	0.1560	19.1625	80.1605	99.3230	0.0932	1.4300e-003	102.0782
Energy	0.0147	0.1253	0.0533	8.0000e-004		0.0101	0.0101		0.0101	0.0101	0.0000	213.0189	213.0189	0.0138	3.9900e-003	214.5526
Mobile	0.4429	0.9013	4.1712	0.0106	1.0261	0.0102	1.0363	0.2746	9.5600e-003	0.2842	0.0000	980.8510	980.8510	0.0488	0.0596	999.8222
Waste						0.0000	0.0000		0.0000	0.0000	16.8077	0.0000	16.8077	0.9933	0.0000	41.6403
Water						0.0000	0.0000		0.0000	0.0000	3.7207	8.2657	11.9864	0.3835	9.1900e-003	24.3108
<b>Total</b>	<b>1.4788</b>	<b>1.1236</b>	<b>6.4657</b>	<b>0.0147</b>	<b>1.0261</b>	<b>0.1762</b>	<b>1.2024</b>	<b>0.2746</b>	<b>0.1757</b>	<b>0.4503</b>	<b>39.6908</b>	<b>1,282.2962</b>	<b>1,321.9870</b>	<b>1.5325</b>	<b>0.0742</b>	<b>1,382.4040</b>

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

**3.0 Construction Detail**

**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2024	1/12/2024	5	10	
2	Site Preparation	Site Preparation	1/27/2024	2/9/2024	5	10	
3	Grading	Grading	2/10/2024	3/8/2024	5	20	



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4	Building Construction	Building Construction	3/9/2024	1/24/2025	5	230
5	Paving	Paving	1/25/2025	2/21/2025	5	20
6	Architectural Coating	Architectural Coating	2/22/2025	3/21/2025	5	20

**Acres of Grading (Site Preparation Phase): 15**

**Acres of Grading (Grading Phase): 20**

**Acres of Paving: 1.26**

**Residential Indoor: 364,500; Residential Outdoor: 121,500; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,293 (Architectural Coating – sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

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Building Construction	Welders	1	8.00	46	0.45
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**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
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	153.00	28.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	31.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Demolition - 2024**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0112	0.1044	0.0985	1.9000e-004		4.8000e-003	4.8000e-003		4.4600e-003	4.4600e-003	0.0000	16.9980	16.9980	4.7600e-003	0.0000	17.1169
<b>Total</b>	<b>0.0112</b>	<b>0.1044</b>	<b>0.0985</b>	<b>1.9000e-004</b>		<b>4.8000e-003</b>	<b>4.8000e-003</b>		<b>4.4600e-003</b>	<b>4.4600e-003</b>	<b>0.0000</b>	<b>16.9980</b>	<b>16.9980</b>	<b>4.7600e-003</b>	<b>0.0000</b>	<b>17.1169</b>

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

**3.2 Demolition - 2024**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.3000e-004	1.6600e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4710	0.4710	1.0000e-005	1.0000e-005	0.4752
<b>Total</b>	<b>2.0000e-004</b>	<b>1.3000e-004</b>	<b>1.6600e-003</b>	<b>1.0000e-005</b>	<b>6.0000e-004</b>	<b>0.0000</b>	<b>6.1000e-004</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>0.4710</b>	<b>0.4710</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.4752</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0112	0.1044	0.0985	1.9000e-004		4.8000e-003	4.8000e-003		4.4600e-003	4.4600e-003	0.0000	16.9980	16.9980	4.7600e-003	0.0000	17.1169
<b>Total</b>	<b>0.0112</b>	<b>0.1044</b>	<b>0.0985</b>	<b>1.9000e-004</b>		<b>4.8000e-003</b>	<b>4.8000e-003</b>		<b>4.4600e-003</b>	<b>4.4600e-003</b>	<b>0.0000</b>	<b>16.9980</b>	<b>16.9980</b>	<b>4.7600e-003</b>	<b>0.0000</b>	<b>17.1169</b>

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**3.2 Demolition - 2024**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.3000e-004	1.6600e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4710	0.4710	1.0000e-005	1.0000e-005	0.4752
<b>Total</b>	<b>2.0000e-004</b>	<b>1.3000e-004</b>	<b>1.6600e-003</b>	<b>1.0000e-005</b>	<b>6.0000e-004</b>	<b>0.0000</b>	<b>6.1000e-004</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>0.4710</b>	<b>0.4710</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.4752</b>

**3.3 Site Preparation - 2024**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1359	0.0917	1.9000e-004		6.1500e-003	6.1500e-003		5.6600e-003	5.6600e-003	0.0000	16.7285	16.7285	5.4100e-003	0.0000	16.8638
<b>Total</b>	<b>0.0133</b>	<b>0.1359</b>	<b>0.0917</b>	<b>1.9000e-004</b>	<b>0.0983</b>	<b>6.1500e-003</b>	<b>0.1044</b>	<b>0.0505</b>	<b>5.6600e-003</b>	<b>0.0562</b>	<b>0.0000</b>	<b>16.7285</b>	<b>16.7285</b>	<b>5.4100e-003</b>	<b>0.0000</b>	<b>16.8638</b>



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**3.3 Site Preparation - 2024**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.6000e-004	1.9900e-003	1.0000e-005	7.3000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.5652	0.5652	2.0000e-005	2.0000e-005	0.5702
<b>Total</b>	<b>2.4000e-004</b>	<b>1.6000e-004</b>	<b>1.9900e-003</b>	<b>1.0000e-005</b>	<b>7.3000e-004</b>	<b>0.0000</b>	<b>7.3000e-004</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>0.5652</b>	<b>0.5652</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.5702</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1359	0.0917	1.9000e-004		6.1500e-003	6.1500e-003		5.6500e-003	5.6500e-003	0.0000	16.7285	16.7285	5.4100e-003	0.0000	16.8638
<b>Total</b>	<b>0.0133</b>	<b>0.1359</b>	<b>0.0917</b>	<b>1.9000e-004</b>	<b>0.0983</b>	<b>6.1500e-003</b>	<b>0.1044</b>	<b>0.0505</b>	<b>5.6500e-003</b>	<b>0.0562</b>	<b>0.0000</b>	<b>16.7285</b>	<b>16.7285</b>	<b>5.4100e-003</b>	<b>0.0000</b>	<b>16.8638</b>

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**3.3 Site Preparation - 2024**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.6000e-004	1.9900e-003	1.0000e-005	7.3000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.5652	0.5652	2.0000e-005	2.0000e-005	0.5702
<b>Total</b>	<b>2.4000e-004</b>	<b>1.6000e-004</b>	<b>1.9900e-003</b>	<b>1.0000e-005</b>	<b>7.3000e-004</b>	<b>0.0000</b>	<b>7.3000e-004</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>0.5652</b>	<b>0.5652</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.5702</b>

**3.4 Grading - 2024**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0166	0.1703	0.1476	3.0000e-004		7.2400e-003	7.2400e-003		6.6600e-003	6.6600e-003	0.0000	26.0639	26.0639	8.4300e-003	0.0000	26.2747
<b>Total</b>	<b>0.0166</b>	<b>0.1703</b>	<b>0.1476</b>	<b>3.0000e-004</b>	<b>0.0708</b>	<b>7.2400e-003</b>	<b>0.0781</b>	<b>0.0343</b>	<b>6.6600e-003</b>	<b>0.0409</b>	<b>0.0000</b>	<b>26.0639</b>	<b>26.0639</b>	<b>8.4300e-003</b>	<b>0.0000</b>	<b>26.2747</b>

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

**3.4 Grading - 2024**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	2.7000e-004	3.3100e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9420	0.9420	3.0000e-005	3.0000e-005	0.9503
<b>Total</b>	<b>4.0000e-004</b>	<b>2.7000e-004</b>	<b>3.3100e-003</b>	<b>1.0000e-005</b>	<b>1.2100e-003</b>	<b>1.0000e-005</b>	<b>1.2100e-003</b>	<b>3.2000e-004</b>	<b>1.0000e-005</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>0.9420</b>	<b>0.9420</b>	<b>3.0000e-005</b>	<b>3.0000e-005</b>	<b>0.9503</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0166	0.1703	0.1476	3.0000e-004		7.2400e-003	7.2400e-003		6.6600e-003	6.6600e-003	0.0000	26.0639	26.0639	8.4300e-003	0.0000	26.2746
<b>Total</b>	<b>0.0166</b>	<b>0.1703</b>	<b>0.1476</b>	<b>3.0000e-004</b>	<b>0.0708</b>	<b>7.2400e-003</b>	<b>0.0781</b>	<b>0.0343</b>	<b>6.6600e-003</b>	<b>0.0409</b>	<b>0.0000</b>	<b>26.0639</b>	<b>26.0639</b>	<b>8.4300e-003</b>	<b>0.0000</b>	<b>26.2746</b>

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

**3.4 Grading - 2024**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	2.7000e-004	3.3100e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9420	0.9420	3.0000e-005	3.0000e-005	0.9503
<b>Total</b>	<b>4.0000e-004</b>	<b>2.7000e-004</b>	<b>3.3100e-003</b>	<b>1.0000e-005</b>	<b>1.2100e-003</b>	<b>1.0000e-005</b>	<b>1.2100e-003</b>	<b>3.2000e-004</b>	<b>1.0000e-005</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>0.9420</b>	<b>0.9420</b>	<b>3.0000e-005</b>	<b>3.0000e-005</b>	<b>0.9503</b>

**3.5 Building Construction - 2024**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1560	1.4250	1.7137	2.8600e-003		0.0650	0.0650		0.0612	0.0612	0.0000	245.7601	245.7601	0.0581	0.0000	247.2129
<b>Total</b>	<b>0.1560</b>	<b>1.4250</b>	<b>1.7137</b>	<b>2.8600e-003</b>		<b>0.0650</b>	<b>0.0650</b>		<b>0.0612</b>	<b>0.0612</b>	<b>0.0000</b>	<b>245.7601</b>	<b>245.7601</b>	<b>0.0581</b>	<b>0.0000</b>	<b>247.2129</b>

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

**3.5 Building Construction - 2024**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.3600e-003	0.1315	0.0417	5.9000e-004	0.0198	8.7000e-004	0.0207	5.7200e-003	8.3000e-004	6.5500e-003	0.0000	56.9437	56.9437	2.1000e-004	8.4100e-003	59.4544
Worker	0.0437	0.0290	0.3581	1.1100e-003	0.1307	6.7000e-004	0.1314	0.0347	6.2000e-004	0.0353	0.0000	101.8521	101.8521	2.8500e-003	2.7700e-003	102.7491
<b>Total</b>	<b>0.0471</b>	<b>0.1606</b>	<b>0.3998</b>	<b>1.7000e-003</b>	<b>0.1505</b>	<b>1.5400e-003</b>	<b>0.1520</b>	<b>0.0404</b>	<b>1.4500e-003</b>	<b>0.0419</b>	<b>0.0000</b>	<b>158.7958</b>	<b>158.7958</b>	<b>3.0600e-003</b>	<b>0.0112</b>	<b>162.2035</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1560	1.4250	1.7137	2.8600e-003		0.0650	0.0650		0.0612	0.0612	0.0000	245.7598	245.7598	0.0581	0.0000	247.2126
<b>Total</b>	<b>0.1560</b>	<b>1.4250</b>	<b>1.7137</b>	<b>2.8600e-003</b>		<b>0.0650</b>	<b>0.0650</b>		<b>0.0612</b>	<b>0.0612</b>	<b>0.0000</b>	<b>245.7598</b>	<b>245.7598</b>	<b>0.0581</b>	<b>0.0000</b>	<b>247.2126</b>

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

**3.5 Building Construction - 2024**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.3600e-003	0.1315	0.0417	5.9000e-004	0.0198	8.7000e-004	0.0207	5.7200e-003	8.3000e-004	6.5500e-003	0.0000	56.9437	56.9437	2.1000e-004	8.4100e-003	59.4544
Worker	0.0437	0.0290	0.3581	1.1100e-003	0.1307	6.7000e-004	0.1314	0.0347	6.2000e-004	0.0353	0.0000	101.8521	101.8521	2.8500e-003	2.7700e-003	102.7491
<b>Total</b>	<b>0.0471</b>	<b>0.1606</b>	<b>0.3998</b>	<b>1.7000e-003</b>	<b>0.1505</b>	<b>1.5400e-003</b>	<b>0.1520</b>	<b>0.0404</b>	<b>1.4500e-003</b>	<b>0.0419</b>	<b>0.0000</b>	<b>158.7958</b>	<b>158.7958</b>	<b>3.0600e-003</b>	<b>0.0112</b>	<b>162.2035</b>

**3.5 Building Construction - 2025**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0123	0.1122	0.1448	2.4000e-004		4.7500e-003	4.7500e-003		4.4700e-003	4.4700e-003	0.0000	20.8728	20.8728	4.9100e-003	0.0000	20.9954
<b>Total</b>	<b>0.0123</b>	<b>0.1122</b>	<b>0.1448</b>	<b>2.4000e-004</b>		<b>4.7500e-003</b>	<b>4.7500e-003</b>		<b>4.4700e-003</b>	<b>4.4700e-003</b>	<b>0.0000</b>	<b>20.8728</b>	<b>20.8728</b>	<b>4.9100e-003</b>	<b>0.0000</b>	<b>20.9954</b>



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

**3.5 Building Construction - 2025**

**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	2.8000e-004	0.0111	3.4700e-003	5.0000e-005	1.6800e-003	7.0000e-005	1.7600e-003	4.9000e-004	7.0000e-005	5.6000e-004	0.0000	4.7472	4.7472	2.0000e-005	7.0000e-004	4.9563
Worker	3.4400e-003	2.2000e-003	0.0283	9.0000e-005	0.0111	5.0000e-005	0.0112	2.9500e-003	5.0000e-005	3.0000e-003	0.0000	8.3547	8.3547	2.2000e-004	2.2000e-004	8.4256
<b>Total</b>	<b>3.7200e-003</b>	<b>0.0133</b>	<b>0.0317</b>	<b>1.4000e-004</b>	<b>0.0128</b>	<b>1.2000e-004</b>	<b>0.0129</b>	<b>3.4400e-003</b>	<b>1.2000e-004</b>	<b>3.5600e-003</b>	<b>0.0000</b>	<b>13.1020</b>	<b>13.1020</b>	<b>2.4000e-004</b>	<b>9.2000e-004</b>	<b>13.3819</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0123	0.1122	0.1448	2.4000e-004		4.7500e-003	4.7500e-003		4.4700e-003	4.4700e-003	0.0000	20.8727	20.8727	4.9100e-003	0.0000	20.9954
<b>Total</b>	<b>0.0123</b>	<b>0.1122</b>	<b>0.1448</b>	<b>2.4000e-004</b>		<b>4.7500e-003</b>	<b>4.7500e-003</b>		<b>4.4700e-003</b>	<b>4.4700e-003</b>	<b>0.0000</b>	<b>20.8727</b>	<b>20.8727</b>	<b>4.9100e-003</b>	<b>0.0000</b>	<b>20.9954</b>

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

**3.5 Building Construction - 2025**

**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	2.8000e-004	0.0111	3.4700e-003	5.0000e-005	1.6800e-003	7.0000e-005	1.7600e-003	4.9000e-004	7.0000e-005	5.6000e-004	0.0000	4.7472	4.7472	2.0000e-005	7.0000e-004	4.9563
Worker	3.4400e-003	2.2000e-003	0.0283	9.0000e-005	0.0111	5.0000e-005	0.0112	2.9500e-003	5.0000e-005	3.0000e-003	0.0000	8.3547	8.3547	2.2000e-004	2.2000e-004	8.4256
<b>Total</b>	<b>3.7200e-003</b>	<b>0.0133</b>	<b>0.0317</b>	<b>1.4000e-004</b>	<b>0.0128</b>	<b>1.2000e-004</b>	<b>0.0129</b>	<b>3.4400e-003</b>	<b>1.2000e-004</b>	<b>3.5600e-003</b>	<b>0.0000</b>	<b>13.1020</b>	<b>13.1020</b>	<b>2.4000e-004</b>	<b>9.2000e-004</b>	<b>13.3819</b>

**3.6 Paving - 2025**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.1500e-003	0.0858	0.1458	2.3000e-004		4.1900e-003	4.1900e-003		3.8500e-003	3.8500e-003	0.0000	20.0193	20.0193	6.4700e-003	0.0000	20.1811
Paving	1.6500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0108</b>	<b>0.0858</b>	<b>0.1458</b>	<b>2.3000e-004</b>		<b>4.1900e-003</b>	<b>4.1900e-003</b>		<b>3.8500e-003</b>	<b>3.8500e-003</b>	<b>0.0000</b>	<b>20.0193</b>	<b>20.0193</b>	<b>6.4700e-003</b>	<b>0.0000</b>	<b>20.1811</b>

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

**3.6 Paving - 2025**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.4000e-004	3.0800e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9101	0.9101	2.0000e-005	2.0000e-005	0.9178
<b>Total</b>	<b>3.8000e-004</b>	<b>2.4000e-004</b>	<b>3.0800e-003</b>	<b>1.0000e-005</b>	<b>1.2100e-003</b>	<b>1.0000e-005</b>	<b>1.2100e-003</b>	<b>3.2000e-004</b>	<b>1.0000e-005</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>0.9101</b>	<b>0.9101</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.9178</b>

**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	9.1500e-003	0.0858	0.1458	2.3000e-004		4.1900e-003	4.1900e-003		3.8500e-003	3.8500e-003	0.0000	20.0192	20.0192	6.4700e-003	0.0000	20.1811
Paving	1.6500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0108</b>	<b>0.0858</b>	<b>0.1458</b>	<b>2.3000e-004</b>		<b>4.1900e-003</b>	<b>4.1900e-003</b>		<b>3.8500e-003</b>	<b>3.8500e-003</b>	<b>0.0000</b>	<b>20.0192</b>	<b>20.0192</b>	<b>6.4700e-003</b>	<b>0.0000</b>	<b>20.1811</b>

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

**3.6 Paving - 2025**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.4000e-004	3.0800e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9101	0.9101	2.0000e-005	2.0000e-005	0.9178
<b>Total</b>	<b>3.8000e-004</b>	<b>2.4000e-004</b>	<b>3.0800e-003</b>	<b>1.0000e-005</b>	<b>1.2100e-003</b>	<b>1.0000e-005</b>	<b>1.2100e-003</b>	<b>3.2000e-004</b>	<b>1.0000e-005</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>0.9101</b>	<b>0.9101</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.9178</b>

**3.7 Architectural Coating - 2025**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7009					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7100e-003	0.0115	0.0181	3.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5567
<b>Total</b>	<b>1.7026</b>	<b>0.0115</b>	<b>0.0181</b>	<b>3.0000e-005</b>		<b>5.2000e-004</b>	<b>5.2000e-004</b>		<b>5.2000e-004</b>	<b>5.2000e-004</b>	<b>0.0000</b>	<b>2.5533</b>	<b>2.5533</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>2.5567</b>

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

**3.7 Architectural Coating - 2025**

**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	7.8000e-004	4.9000e-004	6.3600e-003	2.0000e-005	2.5000e-003	1.0000e-005	2.5100e-003	6.6000e-004	1.0000e-005	6.7000e-004	0.0000	1.8809	1.8809	5.0000e-005	5.0000e-005	1.8968
<b>Total</b>	<b>7.8000e-004</b>	<b>4.9000e-004</b>	<b>6.3600e-003</b>	<b>2.0000e-005</b>	<b>2.5000e-003</b>	<b>1.0000e-005</b>	<b>2.5100e-003</b>	<b>6.6000e-004</b>	<b>1.0000e-005</b>	<b>6.7000e-004</b>	<b>0.0000</b>	<b>1.8809</b>	<b>1.8809</b>	<b>5.0000e-005</b>	<b>5.0000e-005</b>	<b>1.8968</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7009					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7100e-003	0.0115	0.0181	3.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5567
<b>Total</b>	<b>1.7026</b>	<b>0.0115</b>	<b>0.0181</b>	<b>3.0000e-005</b>		<b>5.2000e-004</b>	<b>5.2000e-004</b>		<b>5.2000e-004</b>	<b>5.2000e-004</b>	<b>0.0000</b>	<b>2.5533</b>	<b>2.5533</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>2.5567</b>

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

**3.7 Architectural Coating - 2025**

**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	7.8000e-004	4.9000e-004	6.3600e-003	2.0000e-005	2.5000e-003	1.0000e-005	2.5100e-003	6.6000e-004	1.0000e-005	6.7000e-004	0.0000	1.8809	1.8809	5.0000e-005	5.0000e-005	1.8968
<b>Total</b>	<b>7.8000e-004</b>	<b>4.9000e-004</b>	<b>6.3600e-003</b>	<b>2.0000e-005</b>	<b>2.5000e-003</b>	<b>1.0000e-005</b>	<b>2.5100e-003</b>	<b>6.6000e-004</b>	<b>1.0000e-005</b>	<b>6.7000e-004</b>	<b>0.0000</b>	<b>1.8809</b>	<b>1.8809</b>	<b>5.0000e-005</b>	<b>5.0000e-005</b>	<b>1.8968</b>

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4429	0.9013	4.1712	0.0106	1.0261	0.0102	1.0363	0.2746	9.5600e-003	0.2842	0.0000	980.8510	980.8510	0.0488	0.0596	999.8222
Unmitigated	0.4429	0.9013	4.1712	0.0106	1.0261	0.0102	1.0363	0.2746	9.5600e-003	0.2842	0.0000	980.8510	980.8510	0.0488	0.0596	999.8222

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	979.20	883.80	736.20	2,706,956	2,706,956
Parking Lot	0.00	0.00	0.00		
Total	979.20	883.80	736.20	2,706,956	2,706,956

**4.3 Trip Type Information**

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.488129	0.054374	0.179646	0.157061	0.028618	0.008866	0.014149	0.038412	0.000576	0.000233	0.024457	0.001405	0.004073
Parking Lot	0.488129	0.054374	0.179646	0.157061	0.028618	0.008866	0.014149	0.038412	0.000576	0.000233	0.024457	0.001405	0.004073



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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not 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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	67.8892	67.8892	0.0110	1.3300e-003	68.5605
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	67.8892	67.8892	0.0110	1.3300e-003	68.5605
NaturalGas Mitigated	0.0147	0.1253	0.0533	8.0000e-004		0.0101	0.0101		0.0101	0.0101	0.0000	145.1297	145.1297	2.7800e-003	2.6600e-003	145.9921
NaturalGas Unmitigated	0.0147	0.1253	0.0533	8.0000e-004		0.0101	0.0101		0.0101	0.0101	0.0000	145.1297	145.1297	2.7800e-003	2.6600e-003	145.9921

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

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.71963e+006	0.0147	0.1253	0.0533	8.0000e-004		0.0101	0.0101		0.0101	0.0101	0.0000	145.1297	145.1297	2.7800e-003	2.6600e-003	145.9921
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0147</b>	<b>0.1253</b>	<b>0.0533</b>	<b>8.0000e-004</b>		<b>0.0101</b>	<b>0.0101</b>		<b>0.0101</b>	<b>0.0101</b>	<b>0.0000</b>	<b>145.1297</b>	<b>145.1297</b>	<b>2.7800e-003</b>	<b>2.6600e-003</b>	<b>145.9921</b>

**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					
Apartments Mid Rise	2.71963e+006	0.0147	0.1253	0.0533	8.0000e-004		0.0101	0.0101		0.0101	0.0101	0.0000	145.1297	145.1297	2.7800e-003	2.6600e-003	145.9921
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0147</b>	<b>0.1253</b>	<b>0.0533</b>	<b>8.0000e-004</b>		<b>0.0101</b>	<b>0.0101</b>		<b>0.0101</b>	<b>0.0101</b>	<b>0.0000</b>	<b>145.1297</b>	<b>145.1297</b>	<b>2.7800e-003</b>	<b>2.6600e-003</b>	<b>145.9921</b>

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

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	714539	66.1118	0.0107	1.3000e-003	66.7656
Parking Lot	19210	1.7774	2.9000e-004	3.0000e-005	1.7950
<b>Total</b>		<b>67.8892</b>	<b>0.0110</b>	<b>1.3300e-003</b>	<b>68.5605</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	714539	66.1118	0.0107	1.3000e-003	66.7656
Parking Lot	19210	1.7774	2.9000e-004	3.0000e-005	1.7950
<b>Total</b>		<b>67.8892</b>	<b>0.0110</b>	<b>1.3300e-003</b>	<b>68.5605</b>

**6.0 Area Detail**

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

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0212	0.0970	2.2412	3.3600e-003		0.1560	0.1560		0.1560	0.1560	19.1625	80.1605	99.3230	0.0932	1.4300e-003	102.0782
Unmitigated	1.0212	0.0970	2.2412	3.3600e-003		0.1560	0.1560		0.1560	0.1560	19.1625	80.1605	99.3230	0.0932	1.4300e-003	102.0782

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

**6.2 Area by SubCategory**

**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	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7065					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1045	0.0816	0.9059	3.2900e-003		0.1486	0.1486		0.1486	0.1486	19.1625	77.9773	97.1398	0.0911	1.4300e-003	99.8427
Landscaping	0.0401	0.0154	1.3353	7.0000e-005		7.4100e-003	7.4100e-003		7.4100e-003	7.4100e-003	0.0000	2.1832	2.1832	2.0900e-003	0.0000	2.2355
<b>Total</b>	<b>1.0212</b>	<b>0.0970</b>	<b>2.2412</b>	<b>3.3600e-003</b>		<b>0.1560</b>	<b>0.1560</b>		<b>0.1560</b>	<b>0.1560</b>	<b>19.1625</b>	<b>80.1605</b>	<b>99.3231</b>	<b>0.0932</b>	<b>1.4300e-003</b>	<b>102.0782</b>

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

**6.2 Area by SubCategory**

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7065					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1045	0.0816	0.9059	3.2900e-003		0.1486	0.1486		0.1486	0.1486	19.1625	77.9773	97.1398	0.0911	1.4300e-003	99.8427
Landscaping	0.0401	0.0154	1.3353	7.0000e-005		7.4100e-003	7.4100e-003		7.4100e-003	7.4100e-003	0.0000	2.1832	2.1832	2.0900e-003	0.0000	2.2355
<b>Total</b>	<b>1.0212</b>	<b>0.0970</b>	<b>2.2412</b>	<b>3.3600e-003</b>		<b>0.1560</b>	<b>0.1560</b>		<b>0.1560</b>	<b>0.1560</b>	<b>19.1625</b>	<b>80.1605</b>	<b>99.3231</b>	<b>0.0932</b>	<b>1.4300e-003</b>	<b>102.0782</b>

**7.0 Water Detail**

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**7.1 Mitigation Measures Water**

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

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	11.9864	0.3835	9.1900e-003	24.3108
Unmitigated	11.9864	0.3835	9.1900e-003	24.3108

**7.2 Water by Land Use**

**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	11.7277 / 7.39357	11.9864	0.3835	9.1900e-003	24.3108
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>11.9864</b>	<b>0.3835</b>	<b>9.1900e-003</b>	<b>24.3108</b>

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

**7.2 Water by Land Use**

**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	11.7277 / 7.39357	11.9864	0.3835	9.1900e-003	24.3108
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>11.9864</b>	<b>0.3835</b>	<b>9.1900e-003</b>	<b>24.3108</b>

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	16.8077	0.9933	0.0000	41.6403
Unmitigated	16.8077	0.9933	0.0000	41.6403



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

**8.2 Waste by Land Use**

**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	82.8	16.8077	0.9933	0.0000	41.6403
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>16.8077</b>	<b>0.9933</b>	<b>0.0000</b>	<b>41.6403</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	82.8	16.8077	0.9933	0.0000	41.6403
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>16.8077</b>	<b>0.9933</b>	<b>0.0000</b>	<b>41.6403</b>

**9.0 Operational Offroad**

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

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

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**Fire Pumps and Emergency Generators**

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

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

Equipment Type	Number
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**11.0 Vegetation**

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