# APPENDICES VOL 1: DRAFT ENVIRONMENTAL IMPACT REPORT NO. 7896

## Kamm Avenue Pistachio Processing Plant

February 2021

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# Appendices

# Appendix A

# Air Quality and GHG Report

Mitchell Air Quality Consulting

# Air Quality and Greenhouse Gas Analysis Report
# Kamm Avenue Pistachio Processing Plant
# Cantua Creek, County of Fresno, California


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# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| $\mu g/m^3$ | micrograms per cubic meter |
| AB | Assembly Bill |
| AQMP | Air Quality Management Plan |
| ARB | California Air Resources Board |
| BAU | Business as Usual |
| Btu | British thermal unit |
| CAF | Confined Animal Facility |
| CalEEMod | California Emissions Estimator Model |
| CAPCOA | California Air Pollution Control Officers Association |
| CEQA | California Environmental Quality Act |
| CO | carbon monoxide |
| $CO_2$ | carbon dioxide |
| District | San Joaquin Valley Air Pollution Control District |
| DPM | diesel particulate matter |
| EMFAC | EMission FACtors Model |
| EPA | United States Environmental Protection Agency |
| Fresno COG | Fresno Council of Governments |
| GAMAQI | Guidance for Assessing and Mitigating Air Quality Impacts |
| GHG Rx | Greenhouse Gas Reduction Exchange |
| GHG | greenhouse gases |
| IPCC | United Nations Intergovernmental Panel on Climate Change |
| LCFS | Low Carbon Fuel Standard |
| MAQC | Mitchell Air Quality Consulting |
| $MMTCO_2e$ | million metric tons of carbon dioxide equivalent |
| $MTCO_2e$ | metric tons of carbon dioxide equivalent |
| $NO_X$ | nitrogen oxides |
| $PM_{10}$ | particulate matter less than 10 microns in diameter |
| $PM_{2.5}$ | particulate matter less than 2.5 microns in diameter |
| ppb | parts per billion |
| ppm | parts per million |
| ROG | reactive organic gases |
| RTP/SCS | Regional Transportation Plan/Sustainable Community Strategy |
| SB | Senate Bill |
| SJVAPCD | San Joaquin Valley Air Pollution Control District |
| $SO_X$ | sulfur oxides |
| VOC | volatile organic compounds |
| ZEV | zero emission vehicle |

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# SECTION 1: EXECUTIVE SUMMARY

## 1.1—Purpose and Methods of Analysis

The following air quality and greenhouse gas (GHG) analysis was prepared to evaluate whether the estimated criteria air pollutant and GHG emissions generated from the Kamm Avenue Pistachio Plant (project) would cause significant impacts to air resources in the project area. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The methodology follows the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) prepared by the San Joaquin Valley Air Pollution Control District (SJVAPCD or District) for quantification of emissions and evaluation of potential impacts to air resources (SJVAPCD 2015a). The Greenhouse Gas Analysis follows the SJVAPCD "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA" (adopted in December 2009) to determine significance (SJVAPCD 2009).

## 1.2—Project Description

The 315.8-acre project site is located at 34411 West Kamm Avenue, Cantua Creek, CA 93608. The Assessor's Parcel Numbers are 038-300-17S and 038-300-30S. Approximately 135 acres will be disturbed during construction activities.

Construction of this plant will enable the applicant to hull, dry, process, store, and package pistachios. The project is expected to process up to 60 million pounds of pistachios per year. Currently, the applicant's pistachios are taken to another processing plant over 21 miles away. This allows the project to provide emission savings from transportation compared with existing conditions. The project is expected to be constructed in a single phase. The project includes the following structures and equipment:

- One 130,000-square-foot processing/packing building with a 10,000-square-foot canopy and a truck dock
- One 15,000-square-foot cold storage building
- One 1,200-square-foot motor control center building
- One 1,200-square-foot air compressor building
- One 12,156-square-foot administration office building
- One 8,818-square-foot breakroom/supervisor office building
- One 1,000-square-foot main scale house/guard shack and truck scale
- One 200-square-foot scale house and truck scale
- Forty-nine 48-foot-diameter x 65-foot-tall storage silos
- One 21,600-square-foot huller canopy
- Thirteen 27-million-British-thermal-unit-per-hour (MMBtu/hr) natural gas-fired column dryers

- One 6,570-square-foot shop building with a 2,920-square-foot canopy
- Four sand and media water filters
- One 353,000-gallon water storage tank
- One 324-square-foot fire pump house
- One 972-square-foot storage warehouse
- One 225-square-foot domestic water treatment plant control room
- Three domestic water treatment filters
- One 70,000-gallon domestic water storage tank
- Three precleaning equipment installations
- One huller pit
- Three excavated and cement lined hauling pits for raw pistachios
- One 50,000-square-foot fenced fumigation operations area
- One 400-square-foot fenced chemical storage area
- Water supply connections and metering equipment
- Two underground, 18-inch-diameter pipelines from hulling canopy to water settling and cleaning ponds
- Two lined, 450-square-foot process water settling and cleaning ponds (100 acre-feet)
- Two processed water separators/pumps
- Paved or improved primary access and secondary roads, truck turnaround areas, and employee parking facilities
- Black chain link security fence around 80-acre main plant area.
- Natural gas connections and metering equipment with PG&E system
- Electrical power connections and metering equipment with PG&E distribution system on north side of Kamm Avenue

The project includes a total of 177,665 square feet of occupied industrial and office space. The proposed plant will also include processing equipment, on-site roadways, parking lots, signage, and landscaping in front of the main processing building. There will be 6-foot black chain link fencing along the entire perimeter of the plant with several gates on the northern and southern borders, and one on the eastern border.

The project's peak operations will occur during the harvest season, which normally starts in September and ends in October for about 6 weeks. Employment is estimated at 60 people year-round and an additional 60 people during harvest periods with two shifts per day. Truck trips during peak periods are estimated at 342 trips per day (one trip incoming and one trip outgoing). Most of

the trucks are used during the harvest season to bring raw pistachios to the plant for processing. Additional trucks are used for shipping finished products to market and deliveries of materials to the site by package delivery services. Details regarding employee and truck trip generation are included in Appendix A of this report.

The project will require permits from the SJVAPCD for stationary sources of emissions. The project includes thirteen 27 MMBtu natural gas-fueled dryers that are used during the 6-week harvest season. The project also includes a warmer and a roaster used to further process the pistachios that are fueled by natural gas. The project includes baghouses to control fugitive dust generated during the process.

During the first year of operation, the PG&E natural gas pipeline connection to the project will not be complete. As an interim source of natural gas, liquefied natural gas (LNG) will be trucked to the project site during the six-week harvest season.

The project's regional vicinity location is shown in Figure 1; an aerial view of the local vicinity is provided in Figure 2; and the site plan is provided in Figure 3.

## 1.3—Summary of Analysis Results

The following is a summary of the analysis results. As shown below, the project would result in less than significant impacts for all air quality and GHG impact criteria analyzed.

**Impact AIR-1:** The project would not conflict with or obstruct implementation of the applicable air quality plan. **Less than significant impact.**

**Impact AIR-2:** The project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors). **Less than significant impact with mitigation.**

**Impact AIR-3:** The project could expose sensitive receptors to substantial pollutant concentrations. **Less than significant impact.**

**Impact AIR-4:** The project would not create objectionable odors affecting a substantial number of people. **Less than significant impact.**

**Impact GHG-1:** The project would not generate direct or indirect greenhouse gas emissions that would result in a significant impact on the environment. **Less than significant impact.**

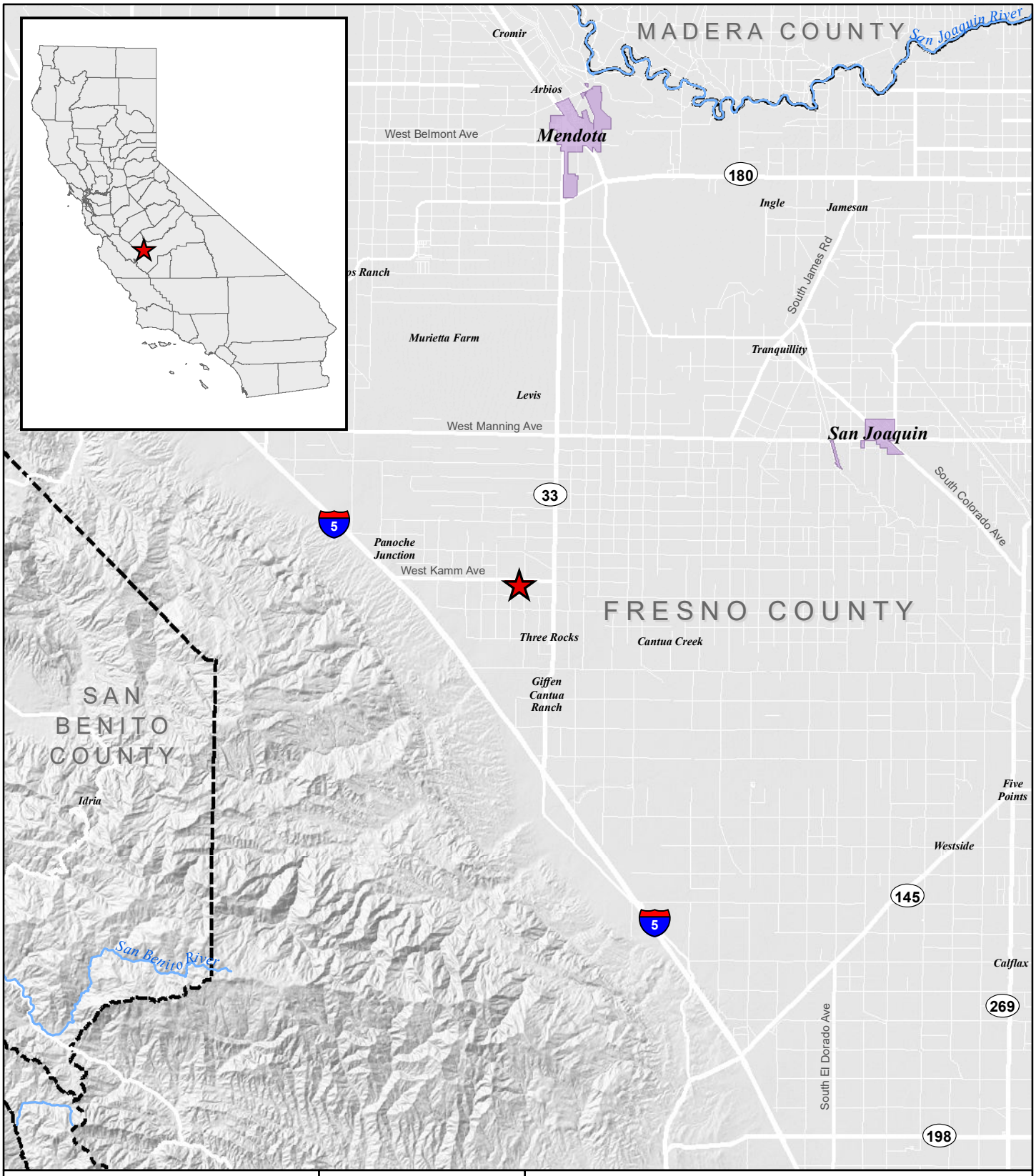
**Impact GHG-2:** The project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of greenhouse gases. **Less than significant impact**.

## 1.4—Standard Conditions and Mitigation Measures Applied to the Project

The project includes two mitigation measures to help ensure compliance with SJVAPCD regulations that are required to reduce project emissions during construction and operation to less than significant levels.

**MM AIR-2a** Prior to commencing construction activities, the project shall prepare a Dust Control Plan as required by San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 8021 to control fugitive dust sufficiently to limit visible dust emissions to 20 percent opacity during construction, excavation, or earthmoving activities.

**MM AIR-2b** Prior to installing equipment requiring an SJVAPCD permit to operate, the applicant shall file an Authority to Construct application with the SJVAPCD that complies with the requirements of Rule 2201 New and Modified Stationary Source Review. Emissions of any criteria pollutant that exceed the SJVAPCD offset thresholds after the implementation of best available control technology (BACT) shall provide emission offsets in amounts required by the rule.




**Legend**

- Project Location
- City
- County Boundary

*Sources: Fresno County GIS; Open StreetMap. Map date: October 24, 2019. Revised September 13, 2020.*

0 2 4
Miles

1:300,000

**KAMM AVENUE PISTACHIO PROCESSING, LLC**
**AIR QUALITY AND GREENHOUSE GAS ANALYSIS REPORT**
**KAMM AVENUE PISTACHIO PROCESSING PLANT**

Figure 1. Regional Location Map

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**Legend**

Project Boundary

*Sources: Fresno County GIS; ArcGIS Online World Imagery Map Service. Map date: October 24, 2019. Revised: September 13, 2020.*

N

0 ¼ ½

Miles

1:48,000

**KAMM AVENUE PISTACHIO PROCESSING, LLC**
**AIR QUALITY AND GREENHOUSE GAS ANALYSIS REPORT**
**KAMM AVENUE PISTACHIO PROCESSING PLANT**

Figure 2. Vicinity Map

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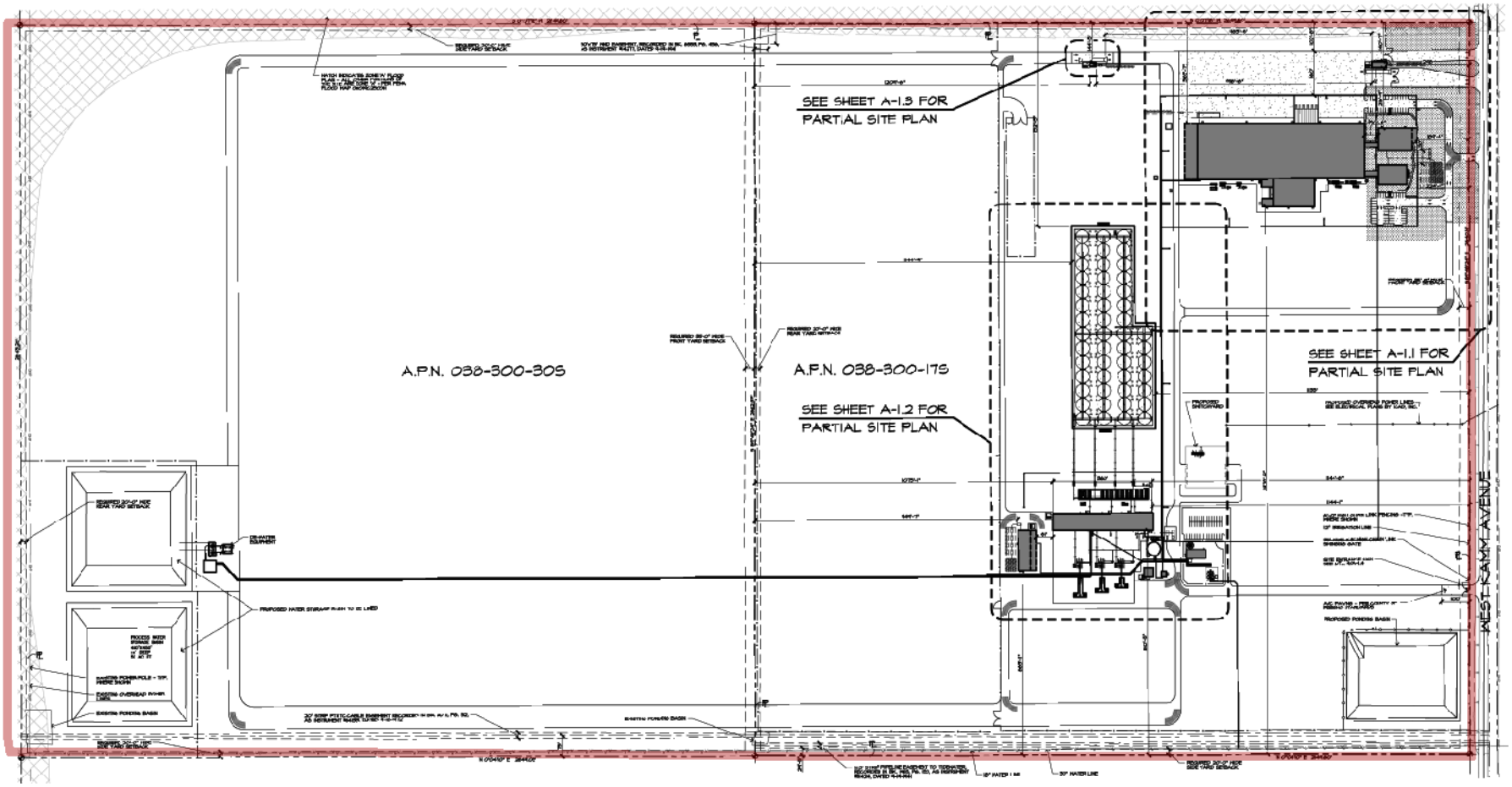


**Legend**

Project Boundary

0 250 500

Feet

1:7,000

*Sources: Gerald Mele & Associates, Inc., 8/25/2020; Fresno County GIS; . Map date: September 13, 2020.*

**KAMM AVENUE PISTACHIO PROCESSING, LLC**
**AIR QUALITY AND GREENHOUSE GAS ANALYSIS REPORT**
**KAMM AVENUE PISTACHIO PROCESSING PLANT**

Figure 3. Site Plan

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# SECTION 2: AIR QUALITY SETTING

## 2.1—Environmental Setting

Air quality impacts are both local and regional. Regional and local air quality is impacted by topography, dominant airflows, atmospheric inversions, location, and season. The project is located in the San Joaquin Valley Air Basin, which experiences some of the challenging environmental conditions for air quality in the nation. The following section describes these conditions as they pertain to the Air Basin. The information in this section is primarily from the District's GAMAQI (SJVAPCD 2015a).

### 2.1.1 - San Joaquin Valley Air Basin

#### Topography

The topography of a region is important for air quality because mountains can block airflow that would help disperse pollutants, and can channel air from upwind areas that transports pollutants to downwind areas. The SJVAPCD covers the entirety of the Air Basin. The Air Basin is generally shaped like a bowl. It is open in the north and is surrounded by mountain ranges on all other sides. The Sierra Nevada mountains are along the eastern boundary (8,000 to 14,000 feet in elevation), the Coast Ranges are along the western boundary (3,000 feet in elevation), and the Tehachapi Mountains are along the southern boundary (6,000 to 8,000 feet in elevation).

#### Climate

The climate is important for air quality because of differences in the atmosphere's ability to trap pollutants close to the ground, which creates adverse air quality; inversely, the atmosphere's ability to rapidly disperse pollutants over a wide area prevents high concentrations from accumulating under different climatic conditions. The Air Basin has an "inland Mediterranean" climate and is characterized by long, hot, dry summers and short, foggy winters. Sunlight can be a catalyst in the formation of some air pollutants (such as ozone); the Air Basin averages over 260 sunny days per year.

Inversion layers are significant in determining pollutant concentrations. Concentration levels can be related to the amount of mixing space below the inversion. Temperature inversions that occur on the summer days are usually encountered 2,000 to 2,500 feet above the valley floor. In winter months, overnight inversions occur 500 to 1,500 feet above the valley floor.

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the Air Basin form natural horizontal barriers to the dispersion of air contaminants. The wind generally flows south-southeast through the valley, through the Tehachapi Pass and into the Mojave Desert Air Basin portion of Kern County. As the wind moves through the Air Basin, it mixes with the air pollution generated locally, generally transporting air pollutants from the north to the south in the summer and in a reverse flow in the winter.

The winds and unstable air conditions experienced during the passage of winter storms result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high

pressure and light winds allow cold moist air to pool on the San Joaquin Valley floor. This creates strong, low-level temperature inversions and very stable air conditions, which can lead to Tule fog. Wintertime conditions favorable to fog formation are also conditions favorable to high concentrations of $PM_{2.5}$ and $PM_{10}$.

## 2.2—Regulatory Setting

Air pollutants are regulated to protect human health and for secondary effects such as visibility and building soiling. The Clean Air Act of 1970 tasks the United States Environmental Protection Agency (EPA) with setting air quality standards. The State of California also sets air quality standards, which are in some cases more stringent than federal standards, in addition to addressing additional pollutants. The following section describes these federal and state standards and the health effects of the regulated pollutants.

### 2.2.1 - Clean Air Act

Congress established much of the basic structure of the Clean Air Act (CAA) in 1970, and made major revisions in 1977 and 1990. Six common air pollutants (also known as criteria pollutants) are addressed in the CAA: particulate matter, ground-level ozone, carbon monoxide (CO), sulfur oxides ($SO_X$), nitrogen oxides ($NO_X$), and lead. The EPA labels these pollutants as criteria air pollutants because they are regulated by developing human health-based and/or environmentally based criteria (science-based guidelines), which sets permissible levels. The set of limits based on human health are called primary standards. Another set of limits intended to prevent environmental and property damage are called secondary standards (EPA 2014). The federal standards are called National Ambient Air Quality Standards (NAAQS). The air quality standards provide benchmarks for determining whether air quality is healthy at specific locations and whether development activities will cause or contribute to a violation of the standards. The criteria pollutants are:

- Ozone
- Nitrogen dioxide ($NO_2$)
- Lead
- Particulate matter ($PM_{10}$ and $PM_{2.5}$)
- Carbon monoxide (CO)
- Sulfur dioxide

The federal standards were set to protect public health, including that of sensitive individuals; thus, the EPA is tasked with updating the standards as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health (ARB 2016).

### 2.2.2 - California Clean Air Act

The California Legislature enacted the California Clean Air Act (CCAA) in 1988 to address air quality issues of concern not adequately addressed by the federal CAA at the time. California's air quality problems were and continue to be some of the most severe in the nation, and required additional actions beyond the federal mandates. The California Air Resources Board (ARB) administers California Ambient Air Quality Standards (CAAQS) for the 10 air pollutants designated in the CCAA. The 10 state air pollutants are the six federal standards listed above as well visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The EPA authorized California to adopt its own regulations for motor vehicles and other sources that are more stringent than similar federal

regulations implementing the CAA. Generally, the planning requirements of the CCAA are less stringent than the federal CAA; therefore, consistency with the CAA will also demonstrate consistency with the CCAA.

### 2.2.3 - Toxic Air Contaminants

A toxic air contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. There are no ambient air quality standards for TAC emissions. TACs are regulated in terms of health risks to individuals and populations exposed to the pollutants. The 1990 Clean Air Act Amendments significantly expanded the EPA's authority to regulate hazardous air pollutants (HAP). Section 112 of the Clean Air Act lists 187 hazardous air pollutants to be regulated by source category. Authority to regulate these pollutants was delegated to individual states. ARB and local air districts regulate TACs and HAPs in California.

### 2.2.4 - Air Pollutant Description and Health Effects

The federal and state ambient air quality standards, relevant effects, properties, and sources of the pollutants are summarized in Table 1.

## Table 1: Description of Air Pollutants

| Air Pollutant | Averaging Time | California Standard | Federal Standard[a] | Most Relevant Effects from Pollutant Exposure | Properties | Sources |
|---|---|---|---|---|---|---|
| Ozone | 1 Hour | 0.09 ppm | — | Irritate respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage. | Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), $NO_X$, and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind. | Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and $NO_X$) are mobile sources (on-road and off-road vehicle exhaust). |
| | 8 Hour | 0.070 ppm | 0.070 ppm[f] | | | |
| Carbon monoxide (CO) | 1 Hour | 20 ppm | 35 ppm | Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to fetuses; death. | CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood. | CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources. |
| | 8 Hour | 9.0 ppm | 9 ppm | | | |
| Nitrogen dioxide[b] ($NO_2$) | 1 Hour | 0.18 ppm | 0.100 ppm | Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contribution to atmospheric discoloration; increased visits to hospital for respiratory illnesses. | During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides— $NO_X$ (NO, $NO_2$, $NO_3$, $N_2O$, $N_2O_3$, $N_2O_4$, and $N_2O_5$). $NO_X$ is a precursor to ozone, $PM_{10}$, and $PM_{2.5}$ formation. $NO_X$ can react with compounds to form nitric acid and related small particles and result in PM-related health effects. | $NO_X$ is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen dioxide ($NO_2$) forms quickly from $NO_X$ emissions. $NO_2$ concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations. |
| | Annual | 0.030 ppm | 0.053 ppm | | | |

## Table 1 (cont.): Description of Air Pollutants

| Air Pollutant | Averaging Time | California Standard | Federal Standard[a] | Most Relevant Effects from Pollutant Exposure | Properties | Sources |
|---|---|---|---|---|---|---|
| Sulfur dioxide[c] ($SO_2$) | 1 Hour | 0.25 ppm | 0.075 ppm | Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor. | Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 ppm, the gas has a strong odor, similar to rotten eggs. Sulfur oxides ($SO_X$) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and federal standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and $PM_{10}$. | Human caused sources include fossil-fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethylsulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards. |
| | 3 Hour | — | 0.5 ppm | | | |
| | 24 Hour | 0.04 ppm | 0.14 (for certain areas) | | | |
| | Annual | — | 0.030 ppm (for certain areas) | | | |
| Particulate matter ($PM_{10}$) | 24 Hour | 50 µg/m$^3$ | 150 µg/m$^3$ | • Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravates existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias.<br>• Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death. | Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. $PM_{10}$ refers to particulate matter that is between 2.5 and 10 microns in diameter (1 micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair. | Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal; and recycling. Mobile or transportation-related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere. |
| | Mean | 20 µg/m$^3$ | — | | | |
| Particulate matter ($PM_{2.5}$) | 24 Hour | — | 35 µg/m$^3$ | | | |
| | Annual | 12 µg/m$^3$ | 12.0 µg/m$^3$ | | | |
| Visibility-reducing particles | 8 Hour | See note below[d] | | | | |

## Table 1 (cont.): Description of Air Pollutants

| Air Pollutant | Averaging Time | California Standard | Federal Standard[a] | Most Relevant Effects from Pollutant Exposure | Properties | Sources |
|---|---|---|---|---|---|---|
| Sulfates | 24 Hour | 25 µg/m$^3$ | — | (a) Decrease in ventilatory function;<br>(b) aggravation of asthmatic symptoms;<br>(c) aggravation of cardio-pulmonary disease;<br>(d) vegetation damage;<br>(e) degradation of visibility;<br>(f) property damage. | The sulfate ion is a polyatomic anion with the empirical formula $SO_4^{2-}$. Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water. | Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel. |
| Lead[e] | 30-day | 1.5 µg/m$^3$ | — | Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQ. | Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or federal standards at any monitoring station since 1982. | Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering. |
| | Quarter | — | 1.5 µg/m$^3$ | | | |
| | Rolling 3-month average | — | 0.15 µg/m$^3$ | | | |
| Vinyl chloride[e] | 24 Hour | 0.01 ppm | — | Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers. | Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor. | Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites. |

## Table 1 (cont.): Description of Air Pollutants

| Air Pollutant | Averaging Time | California Standard | Federal Standard[a] | Most Relevant Effects from Pollutant Exposure | Properties | Sources |
|---|---|---|---|---|---|---|
| Hydrogen sulfide | 1 Hour | 0.03 ppm | — | High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema. | Hydrogen sulfide ($H_2S$) is a flammable, colorless, poisonous gas that smells like rotten eggs. | Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide. Anthropogenic sources include the combustion of sulfur-containing fuels (oil and coal). |
| Volatile organic compounds (VOC) | | There are no state or federal standards for VOCs because they are not classified as criteria pollutants. | | Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants. | Reactive organic gases (ROG), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROG and VOCs, the two terms are often used interchangeably. | Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher $PM_{10}$ and lower visibility. |
| Diesel particulate matter (DPM) | | There are no ambient air quality standards for DPM. | | Some short-term (acute) effects of DPM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human studies on the carcinogenicity of DPM demonstrate an increased risk | DPM is a source of $PM_{2.5}$—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic | Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. Typically, the main source of DPM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction equipment. |

## Table 1 (cont.): Description of Air Pollutants

| Air Pollutant | Averaging Time | California Standard | Federal Standard[a] | Most Relevant Effects from Pollutant Exposure | Properties | Sources |
|---|---|---|---|---|---|---|
| | | | | of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure. | aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust. | |

Notes:
ppm = parts per million (concentration) µg/m$^3$ = micrograms per cubic meter Annual = Annual Arithmetic Mean 30-day = 30-day average Quarter = Calendar quarter

[a] Federal standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3 hour $SO_2$, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[b] To attain the 1-hour $NO_2$ national standard, the 3-year average of the annual 98$^{th}$ percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb) (0.100 ppm).

[c] On June 2, 2010, a new 1-hour $SO_2$ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 $SO_2$ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[d] Visibility-reducing particles: In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

[e] The ARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[f] The EPA Administrator approved a revised 8-hour ozone standard of 0.07 ppb on October 1, 2015. The new standard will go into effect 60 days after publication of the Final Rule in the Federal Register. The Final Rule was published in the Federal Register on October 26, 2015 and became effective on December 28, 2015.

Source of effects, properties, and sources: South Coast Air Quality Management District 2007; California Environmental Protection Agency 2002; California Air Resources Board 2009a; U.S. Environmental Protection Agency 2003, 2009, 2010, 2011, 2012a and 2012b; National Toxicology Program 2011 and 2016.
Source of standards: California Air Resources Board 2013a.

Several pollutants listed in Table 1 are not addressed in this analysis. Analysis of lead is not included in this report because no new sources of lead emissions are anticipated with the project. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed as $PM_{10}$ and $PM_{2.5}$. No components of the project would result in vinyl chloride or hydrogen sulfide emissions in any substantial quantity.

### Toxic Air Contaminants Health Effects

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. The California Almanac of Emissions and Air Quality presents the relevant concentration and cancer risk data for the ten TACs that pose the most substantial health risk in California based on available data. The ten TACs are acetaldehyde, benzene, 1.3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (DPM).

Some studies indicate that DPM poses the greatest health risk among the TACs listed above. A 10-year research program (ARB 1998) demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. In addition to increased risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause a cough, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

DPM differs from other TACs in that it is not a single substance, but a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on: engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, however, no ambient monitoring data are available for DPM because no routine measurement method currently exists. The ARB has made preliminary concentration estimates based on a DPM exposure method. This method uses the ARB emissions inventory's $PM_{10}$ database, ambient $PM_{10}$ monitoring data, and the results from several studies to estimate concentrations of DPM.

Health risks attributable to the top 10 TACs listed above are available from the ARB as part of its California Almanac of Emissions and Air Quality—2009 Edition (ARB 2009b). As shown therein for data collected at the First Street air monitoring station in Fresno, cancer risks attributable to all of the listed TACs above with the exception of DPM have declined about 70 percent from the mid-1990s to 2007. Risks associated with DPM emissions are provided only for the year 2000 and have not been updated in the Almanac. Although more recent editions of the Almanac do not provide estimated risk, they do provide emission inventories for DPM for later years. The 2013 Almanac provided emission inventory trends for DPM from 2000 through 2035. The same Almanac reports that DPM emissions were reduced in the SJVAB from 16 tons per day in 2000 to 11 tons per day in 2010, a 31 percent decrease. DPM emissions in the San Joaquin Valley are projected to decrease to

six tons per day by 2015, a 62 percent reduction from year 2000 levels. ARB predicts a reduction to three tons per day by 2035, which would be an 81 percent reduction from year 2000 levels. Continued implementation of the ARB's Diesel Risk Reduction Plan is expected to provide continued reductions in DPM through 2020 and beyond through regulations on this source (ARB 2013b).

### Asbestos

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings that were constructed prior to the 1977 ban on asbestos for use in buildings. Exposure to naturally occurring asbestos can occur during soil-disturbing activities in areas with deposits present.

## 2.3—Existing Air Quality Conditions

The local air quality can be evaluated by reviewing relevant air pollution concentrations near the project area. Table 2 summarizes 2016 through 2018 published monitoring data, which is the most recent three-year period available. The table displays data from the Tranquility monitoring station (located at 32650 W. Adams Avenue approximately 7.2 miles north of the project site) and the Fresno-Garland monitoring station (located approximately 43.7 miles northeast of the project site. The data show that during the past few years, the project area has exceeded the standards for ozone (state and national), $PM_{10}$ (state), and $PM_{2.5}$ (national). The data in the table reflect the concentration of the pollutants in the air, measured using air monitoring equipment. This differs from emissions, which are calculations of a pollutant being emitted over a certain period. No recent monitoring data for Fresno County or the San Joaquin Valley Air Basin were available for carbon monoxide and $SO_2$. Generally, no monitoring is conducted for pollutants that are no longer likely to exceed ambient air quality standards.

**Table 2: Air Quality Monitoring Summary**

| Air Pollutant | Averaging Time | Item | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|
| Ozone[a] | 1 Hour | Max 1 Hour (ppm) | 0.093 | 0.087 | 0.088 |
| | | Days > State Standard (0.09 ppm) | 0 | 0 | 0 |
| | 8 Hour | Max 8 Hour (ppm) | **0.081** | **0.076** | **0.083** |
| | | Days > State Standard (0.07 ppm) | 19 | 10 | 7 |
| | | Days > National Standard (0.070 ppm) | 21 | 10 | 7 |

## Table 2 (cont.): Air Quality Monitoring Summary

| Air Pollutant | Averaging Time | Item | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|
| Carbon monoxide (CO) | 8 Hour | Max 8 Hour (ppm) | ND | ID | ND |
| | | Days > State Standard (9.0 ppm) | ND | 0 | ND |
| | | Days > National Standard (9 ppm) | ND | 0 | ND |
| Nitrogen dioxide ($NO_2$)[b] | Annual | Annual Average (ppm) | 0.010 | 0.011 | 0.011 |
| | 1 Hour | Max 1 Hour (ppm) | 0.056 | 0.057 | 0.068 |
| | | Days > State Standard (0.18 ppm) | 0 | 0 | 0 |
| Sulfur dioxide ($SO_2$) | Annual | Annual Average (ppm) | ND | ND | ND |
| | 24 Hour | Max 24 Hour (ppm) | ND | ND | ND |
| | | Days > State Standard (0.04 ppm) | ND | ND | ND |
| Inhalable coarse particles ($PM_{10}$)[b] | Annual | Annual Average (µg/m$^3$) | 35.4 | 39.4 | 40.6 |
| | 24 hour | 24 Hour (µg/m$^3$) | 91.9 | **160.1** | 130.4 |
| | | Days > State Standard (50 µg/m$^3$) | 67.5 | 97.4 | 102.7 |
| | | Days > National Standard (150 µg/m$^3$) | 0 | 1 | 0 |
| Fine particulate matter ($PM_{2.5}$)[a] | Annual | Annual Average (µg/m$^3$) 12.0 µg/m$^3$ | 7.7 | 8.3 | 11.1 |
| | 24 Hour | 24 Hour (µg/m$^3$) | **39.7** | **62.4** | **94.5** |
| | | Days > National Standard (35 µg/m$^3$) | 2.4 | 6.0 | 16.0 |

Notes:
> = exceed ppm = parts per million µg/m$^3$ = micrograms per cubic meter
ID = insufficient data ND = no data max = maximum
**Bold** = exceedance of State or Federal Standard
State Standard = California Ambient Air Quality Standard
National Standard = National Ambient Air Quality Standard
[a] Tranquility Monitoring Station
[b] Fresno Garland Monitoring Station
Source: California Air Resources Board (ARB 2019a)

The health impacts of the various air pollutants of concern can be presented in a number of ways. The clearest of these is comparable with the state and federal ozone standards. If concentrations are below the standard, it is safe to say that no health impact would occur to anyone. When concentrations exceed the standard, impacts will vary based on the amount by which the standard is exceeded. The EPA developed the Air Quality Index (AQI) as an easy-to-understand measure of health impacts compared with concentrations in the air. Table 3 provides a description of the health impacts of ozone at different concentrations.

**Table 3: Air Quality Index and Health Effects from Ozone**

| Air Quality Index/ 8-hour Ozone Concentration | Health Effects Description |
|---|---|
| AQI—51–100—Moderate | **Sensitive Groups**: Children and people with asthma are the groups most at risk. |
| Concentration 55–70 ppb | **Health Effects Statements**: Unusually sensitive individuals may experience respiratory symptoms. |
| | **Cautionary Statements**: Unusually sensitive people should consider limiting prolonged outdoor exertion. |
| AQI—101–150—Unhealthy for Sensitive Groups | **Sensitive Groups**: Children and people with asthma are the groups most at risk. |
| Concentration 71–85 ppb | **Health Effects Statements**: Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults and people with respiratory disease, such as asthma. |
| | **Cautionary Statements**: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion. |
| AQI—151–200—Unhealthy | **Sensitive Groups**: Children and people with asthma are the groups most at risk. |
| Concentration 86–105 ppb | **Health Effects Statements**: Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population. |
| | **Cautionary Statements**: Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion. |
| AQI—201–300—Very Unhealthy | **Sensitive Groups**: Children and people with asthma are the groups most at risk. |
| Concentration 106–200 ppb | **Health Effects Statements**: Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population. |
| | **Cautionary Statements**: Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion. |
| Source: Air Now 2015. | |

The AQI for the 8-hour ozone standard was recently changed to reflect the current NAAQS of 70 parts per billion (ppb). Based on the AQI scale for the 8-hour ozone standard, the project area as measured at the Tranquility monitoring station experienced no days in the last three years that would be categorized as very unhealthy (AQI 201–250) or unhealthy (AQI 151–200), and 36 days that were unhealthy for sensitive groups (AQI 101–150). Readings at AQI 101 and above violate the standard. The highest reading was 83 parts per billion (ppb) (AQI 143—unhealthy for sensitive

groups) in 2018, compared with the 86-ppb cutoff point for unhealthy (AQI 151) and the federal standard of 70 ppb.

The other nonattainment pollutant of concern is $PM_{2.5}$. An AQI of 100 or lower is considered moderate and would be triggered by a 24-hour average concentration of 12.1 to 35.4 µg/m$^3$. An AQI of 101 to 150 or 35.5 to 55.4 µg/m$^3$ is considered unhealthful for sensitive groups. When concentrations reach this amount, it is considered an exceedance of the federal $PM_{2.5}$ standard. The monitor at the Tranquility station exceeded the national standard on 2 days in 2016, 6 days in 2017 and 16 days in 2018. People with respiratory or heart disease, the elderly and children are the groups most at risk. Unusually sensitive people should consider reducing prolonged or heavy exertion. The AQI of 151 to 200 is classified as unhealthy for everyone. This AQI classification is triggered when $PM_{2.5}$ concentration ranges from 55.4 to 150.4 µg/m$^3$. At this concentration, there is increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and in the elderly. People with respiratory or heart disease, the elderly, and children should limit prolonged exertion. Everyone else should reduce prolonged or heavy exertion. The highest concentration recorded at the Tranquility monitoring station in the last three years was 94.5 µg/m$^3$ (AQI 171—Unhealthy) in 2018. At this concentration, there is an Increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and the elderly. People with respiratory or heart disease, the elderly, and children should limit prolonged exertion. The relationship of the AQI to health effects in shown Table 4.

**Table 4: Air Quality Index and Health Effects of Particulate Pollution**

| Air Quality Index/ $PM_{2.5}$ Concentration | Health Effects Description |
|---|---|
| AQI—51–100—Moderate | **Sensitive Groups**: Some people who may be unusually sensitive to particle. |
| Concentration 12.1–35.4 µg/m$^3$ | **Health Effects Statements**: Unusually sensitive people should consider reducing prolonged or heavy exertion. |
| | **Cautionary Statements**: Unusually sensitive people: Consider reducing prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier. |
| AQI—101–150—Unhealthy for Sensitive Groups | **Sensitive Groups**: Sensitive groups include people with heart or lung disease, older adults, children, and teenagers. |
| Concentration 35.5–55.4 µg/m$^2$ | **Health Effects Statements**: Increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and the elderly. |
| | **If you have heart disease:** Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your health care provider. |

**Table 4 (cont.): Air Quality Index and Health Effects of Particulate Pollution**

| Air Quality Index/ $PM_{2.5}$ Concentration | Health Effects Description |
|---|---|
| AQI—151–200—Unhealthy | Sensitive Groups: Everyone |
| Concentration 55.5–150.4 µg/m$^3$ | **Health Effects Statements**: Increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; increased respiratory effects in general population. |
| | **Cautionary Statements**: Sensitive groups: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling. Everyone else: Reduce prolonged or heavy exertion. Take more breaks during outdoor activities. |
| AQI—201–300—Very Unhealthy | Sensitive Groups: Everyone |
| Concentration 150.5–250.4 µg/m$^3$ | **Health Effects Statements**: Significant aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; significant increase in respiratory effects in general population. |
| | **Cautionary Statements**: Sensitive groups: Avoid all physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better. Everyone else: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling to a time when air quality is better. |

## 2.3.1 - Attainment Status

The EPA and the ARB designate air basins where ambient air quality standards are exceeded as “nonattainment” areas. If standards are met, the area is designated as an “attainment” area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered “unclassified.” National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards.

Each standard has a different definition, or “form” of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The current attainment designations for the Air Basin are shown in Table 5. The Air Basin is designated as nonattainment for ozone, $PM_{10}$, and $PM_{2.5}$.

**Table 5: San Joaquin Valley Air Basin Attainment Status**

| Pollutant | State Status | National Status |
|---|---|---|
| Ozone—One Hour | Nonattainment/Severe | No Standard |
| Ozone—Eight Hour | Nonattainment | Nonattainment/Extreme |
| Carbon monoxide | Attainment/Unclassified | Merced, Madera, and Kings Counties are unclassified; others are in Attainment |
| Nitrogen dioxide | Attainment | Attainment/Unclassified |
| Sulfur dioxide | Attainment | Attainment/Unclassified |
| $PM_{10}$ | Nonattainment | Attainment |
| $PM_{2.5}$ | Nonattainment | Nonattainment |
| Lead | Attainment | No Designation/Classification |
| Source of State status: California Air Resources Board (ARB 2013c).<br>Source of National status: U.S. Environmental Protection Agency (EPA 2016a). | | |

## 2.4—Air Quality Plans and Regulations

Air pollutants are regulated at the national, state, and air basin or county level, and each agency has a different level of regulatory responsibility: the EPA regulates at the national level, the ARB at the state level, and the SJVAPCD at the air basin level.

The EPA is responsible for national and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Ambient Air Quality Standards—also known as the federal standards described earlier.

A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal standards. The State Implementation Plan for the State of California is administered by the ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's State Implementation Plan incorporates individual federal attainment plans for regional air districts; specifically, an air district prepares their federal attainment plan, which is sent to ARB to be approved and incorporated into the California State Implementation Plan. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms. The ARB then submits the to the EPA for approval. After reviewing submitted SIPs, the EPA proposes to approve or disapprove all or part of each plan. The public has an opportunity to comment on the EPA's proposed action. EPA considers public input before taking final action on a state's plan. If EPA approves all or part of a SIP, those control measures are enforceable in federal court. If a state fails to submit an approvable plan or if EPA disapproves a plan, the EPA is required to develop a federal implementation plan (FIP).

The most recent federally approved attainment plans for the SJVAPCD are the 2007 8-hour Ozone Attainment Plan and the 2012 $PM_{2.5}$ Plan for the 2006 $PM_{2.5}$ standard. The Air Basin is designated as an extreme ozone nonattainment area for the EPA's 2008 8-hour ozone standard of 75 ppb. The plan to address this standard was adopted by the SJVAPCD on June 16, 2016. The ARB approved the attainment demonstration plan for the San Joaquin Valley on July 21, 2016 and transmitted the plan to EPA on August 24, 2016. The plan for areas designated extreme nonattainment must demonstrate attainment of the new ozone standard by December 31, 2031. The 2016 Ozone Plan predicts attainment of the 2008 standard by 2031. On June 30, 2020, US EPA approved portions of the 2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards and the San Joaquin Valley Supplement to the 2016 State Strategy for the State Implementation Plan related to the 2006 24-hour PM2.5 National Ambient Air Quality Standard (NAAQS) of 35 $\mu g/m^3$. Additionally, EPA granted an extension of the Serious area attainment date for the 2006 PM2.5 NAAQS from December 31, 2019, to December 31, 2024. Federal review of portions of the plan that pertain to the other $PM_{2.5}$ standards will continue in 2020 (SJVAPCD 2020). The EPA Administrator signed the Final Rule revising the 8-hour ozone standard to 70 ppm on October 1, 2015. The SJVAB is expected to be designated nonattainment for this new standard in late 2017.

Areas designated nonattainment must develop air quality plans and regulations to achieve standards by specified dates, depending on the severity of the exceedances. For much of the country, implementation of federal motor vehicle standards and compliance with federal permitting requirements for industrial sources are adequate to attain air quality standards on schedule. For many areas of California, however, additional state and local regulation is required to achieve the standards. Regulations adopted by California are described below.

## 2.4.1 - California Regulations

### Low-Emission Vehicle Program

The ARB first adopted Low-Emission Vehicle (LEV) program standards in 1990. These first LEV standards ran from 1994 through 2003. LEV II regulations, running from 2004 through 2010, represent continuing progress in emission reductions. As the State's passenger vehicle fleet continues to grow and more sport utility vehicles and pickup trucks are used as passenger cars rather than work vehicles, the more stringent LEV II standards were adopted to provide reductions necessary for California to meet federally mandated clean air goals outlined in the 1994 State Implementation Plan. In 2012, ARB adopted the LEV III amendments to California's LEV regulations. These amendments, also known as the Advanced Clean Car Program, include more stringent emission standards for model years 2017 through 2025 for both criteria pollutants and GHGs for new passenger vehicles (ARB 2013e).

### On-Road Heavy-Duty Vehicle Program

The ARB has adopted standards for emissions from various types of new on-road heavy-duty vehicles. Section 1956.8, Title 13, California Code of Regulations contains California's emission standards for on-road heavy-duty engines and vehicles, as well as test procedures. ARB has also adopted programs to reduce emissions from in-use heavy-duty vehicles including the Heavy-Duty Diesel Vehicle Idling Reduction Program, the Heavy-Duty Diesel In-Use Compliance Program, the Public Bus Fleet Rule and Engine Standards, and the School Bus Program and others (ARB 2013f).

### ARB Truck and Bus Regulation

The latest amendments to the Truck and Bus regulation became effective on December 31, 2014. The amended regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet PM filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low-use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks (ARB 2015a).

### Advanced Clean Truck Regulation.

The Advanced Clean Trucks regulation was approved on June 25, 2020 and has two main components, a manufacturers ZEV sales requirement and a one-time reporting requirement for large entities and fleets. Promoting the development and use of advanced clean trucks will help CARB achieve its emission reduction strategies as outlined in the State Implementation Plan (SIP), Sustainable Freight Action Plan, Senate Bill (SB) 350, and Assembly Bill (AB) 32.

The proposed regulation has two components including a manufacturer sales requirement, and a reporting requirement:

- Zero-emission truck sales: Manufacturers who certify Class 2b-8 chassis or complete vehicles with combustion engines would be required to sell zero-emission trucks as an increasing percentage of their annual California sales from 2024 to 2035. By 2035, zero-emission truck/chassis sales would need to be 55% of Class 2b – 3 truck sales, 75% of Class 4 –8 straight truck sales, and 40% of truck tractor sales.
- Company and fleet reporting: Large employers including retailers, manufacturers, brokers and others would be required to report information about shipments and shuttle services. Fleet owners, with 50 or more trucks, would be required to report about their existing fleet operations. This information would help identify future strategies to ensure that fleets purchase available zero-emission trucks and place them in service where suitable to meet their needs (ARB 2020a)

### ARB Regulation for In-Use Off-Road Diesel Vehicles

On July 26, 2007, the ARB adopted a regulation to reduce DPM and nitrous oxide ($NO_X$) emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. The ARB is enforcing that part of the rule with fines up to $10,000 per day for each vehicle in violation. Performance requirements of the rule are based on a fleet's average $NO_X$ emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying

exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirements, making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501–5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less).

### ARB Airborne Toxic Control Measure for Asbestos

In July 2001, the ARB approved an Air Toxic Control Measure for construction, grading, quarrying, and surface mining operations to minimize emissions of naturally occurring asbestos. The regulation requires application of best management practices to control fugitive dust in areas known to have naturally occurring asbestos and requires notification to the local air district prior to commencement of ground-disturbing activities. The measure establishes specific testing, notification and engineering controls prior to grading, quarrying, or surface mining in construction zones where naturally occurring asbestos is located on projects of any size. There are additional notification and engineering controls at work sites larger than 1 acre in size. These projects require the submittal of a Dust Mitigation Plan and approval by the air district prior to the start of a project.

Construction sometimes requires the demolition of existing buildings where construction occurs. The project includes no demolition. Buildings often include materials containing asbestos. Asbestos is also found in a natural state, known as naturally occurring asbestos. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers into the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

The ARB has an Air Toxic Control Measure for construction, grading, quarrying, and surface mining operations, requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. The measure applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The measure also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity. Review of the Department of Conservation maps indicates that no ultramafic rock has been found near Laton.

### Diesel Risk Reduction Plan

The ARB's Diesel Risk Reduction Plan has led to the adoption of state regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce DPM emissions by about 90 percent overall from year 2000 levels. The projected emission benefits associated with the full implementation of this plan, including federal measures, are reductions in DPM emissions and associated cancer risks of 75 percent by 2010, and 85 percent by 2020 (ARB 2000).

### 2.4.2 - San Joaquin Valley Air Pollution Control District

The District is responsible for controlling emissions primarily from stationary sources. The District, in coordination with the eight countywide transportation agencies, is also responsible for developing, updating, and implementing air quality attainment plans for the Air Basin. The District also has roles under CEQA.

#### Ozone Plans

The Air Basin is designated nonattainment of state and federal health-based air quality standards for ozone. To meet Clean Air Act requirements for the one-hour ozone standard, the District adopted an Extreme Ozone Attainment Demonstration Plan in 2004, with an attainment date of 2010. Although the EPA revoked the federal 1-hour ozone standard effective June 15, 2005 and replaced it with an 8-hour standard, the requirement to submit a plan for that standard remained in effect for the San Joaquin Valley.

The planning requirements for the 1-hour plan remain in effect until replaced by a federal 8-hour ozone attainment plan. On March 8, 2010, the EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan, including revisions to the plan, effective April 7, 2010. However, the Air Basin failed to attain the standard in 2010 and was subject to a $29-million Clean Air Act penalty. The penalty is being collected through an additional $12 motor vehicle registration surcharge for each passenger vehicle registered in the Air Basin that will be applied to pollution reduction programs in the region. The District also instituted a more robust ozone episodic program to reduce emissions on days with the potential to exceed the ozone standards. On July 18, 2016, the EPA published in the Federal Register a final action determining that the San Joaquin Valley has attained the 1-hour ozone national ambient air quality standard. This determination is based on the most recent three-year period (2012-2014) of sufficient, quality-assured, and certified data. The penalty fees remain in place pending submittal of a demonstration that the San Joaquin Valley will maintain the 1-hour standard for 10 years (EPA 2016b).

The EPA originally classified the Air Basin as serious nonattainment for the 1997 federal 8-hour ozone standard with an attainment date of 2013. On April 30, 2007, the District's Governing Board adopted the 2007 Ozone Plan, which contained analysis showing a 2013 attainment target to be infeasible. The 2007 Ozone Plan details the plan for achieving attainment on schedule with an "extreme nonattainment" deadline of 2024. At its adoption of the 2007 Ozone Plan, the District also requested a reclassification to extreme nonattainment. ARB approved the plan in June 2007, and the EPA approved the request for reclassification to extreme nonattainment on April 15, 2010.

The 2007 Ozone Plan contains measures to reduce ozone and particulate matter precursor emissions to bring the Basin into attainment with the federal 8-hour ozone standard. The 2007 Ozone Plan calls for a 75 percent reduction of $NO_X$ and a 25 percent reduction of reactive organic gases (ROG). Figure 4 displays the anticipated $NO_X$ reductions attributed in the 2007 Ozone Plan. The plan, with innovative measures and a "dual path" strategy, assures expeditious attainment of the federal 8-hour ozone standard for all Air Basin residents. The District Governing Board adopted the 2007 Ozone Plan on April 30, 2007. The ARB approved the plan on June 14, 2007. The 2007 Ozone Plan requires yet to be determined "Advanced Technology" to achieve additional reductions after 2021, in order to

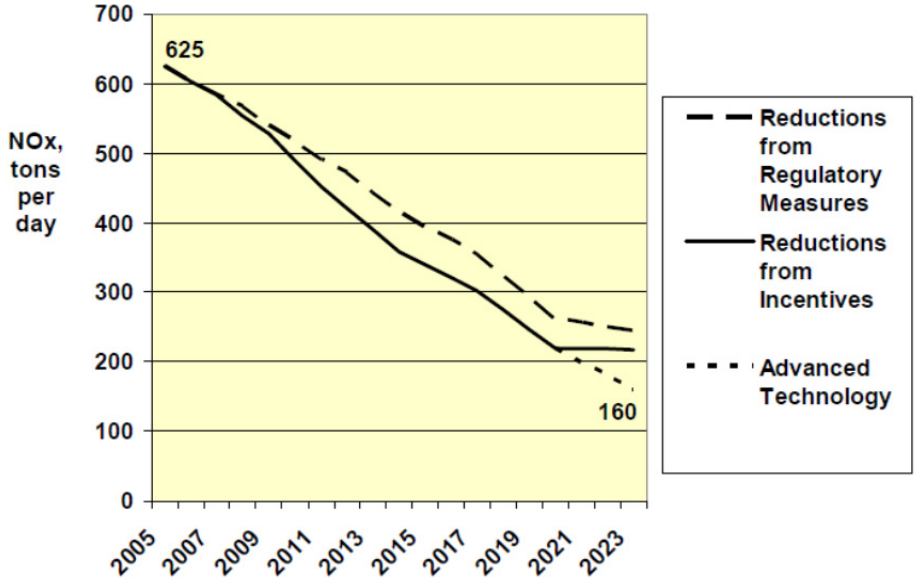
attain the standard at all monitoring stations in the Air Basin by 2024 as allowed for areas designated extreme nonattainment by the federal Clean Air Act.

The Air Basin is designated as an extreme ozone nonattainment area for the EPA's 2008 8-hour ozone standard of 75 ppb. The District's Governing Board approved the 2016 Plan for the 2008 8-Hour Ozone Standard on June 16, 2016. The ARB approved the attainment demonstration plan for the San Joaquin Valley on July 21, 2016 and transmitted the plan to EPA on August 24, 2016. The comprehensive strategy in this plan will reduce $NO_X$ emissions by over 60 percent between 2012 and 2031, and will bring the San Joaquin Valley into attainment of the EPA's 2008 8-hour ozone standard as expeditiously as practicable, no later than December 31, 2031. The 2016 Ozone Plan predicts attainment of the 2008 standard by 2031 (SJVAPCD 2018a). To ensure that the plan is approvable with the necessary contingencies, the plan includes a "Black Box" that will require implementation of new advanced technologies and controls prior to the 2031 deadline.

The EPA Administrator signed the Final Rule revising the 8-hour ozone standard to 70 ppm on October 1, 2015. The new standard will require the SJVAPCD to prepare a new attainment to achieve the more stringent emission level within 20 years from the effective date of designation (EPA 2018).

State ozone standards do not have an attainment deadline but require implementation of all feasible measures to achieve attainment at the earliest date possible. This is achieved through compliance with the federal deadlines and control measure requirements.

**Figure 4: San Joaquin Valley $NO_X$ Emissions Forecast**




(Source: 2007 Ozone Plan)

## Particulate Matter Plans

The Air Basin was designated nonattainment of state and federal health-based air quality standards for $PM_{10}$. The Air Basin is also designated nonattainment of state and federal standards for $PM_{2.5}$.

To meet Clean Air Act requirements for the $PM_{10}$ standard, the District adopted a $PM_{10}$ Attainment Demonstration Plan (Amended 2003 $PM_{10}$ Plan and 2006 $PM_{10}$ Plan), which has an attainment date of 2010. The District adopted the 2007 $PM_{10}$ Maintenance Plan in September 2007 to assure the San Joaquin Valley's continued attainment of the EPA's $PM_{10}$ standard. The EPA designated the valley as an attainment/maintenance area for $PM_{10}$ on September 25, 2008. Although the San Joaquin Valley has exceeded the standard since then, those days were considered exceptional events that are not considered a violation of the standard for attainment purposes.

The 2008 $PM_{2.5}$ Plan builds upon the comprehensive strategy adopted in the 2007 Ozone Plan to bring the Air Basin into attainment of the 1997 national standards for $PM_{2.5}$. The EPA has identified $NO_X$ and $SO_2$as precursors that must be addressed in air quality plans for the 1997 $PM_{2.5}$ standards. The 2008 $PM_{2.5}$ Plan is a continuation of the District's strategy to improve the air quality in the Air Basin. The EPA issued final approval of the 2008 $PM_{2.5}$ Plan on November 9, 2011, which became effective on January 9, 2012. The EPA approved the emissions inventory, the reasonably available control measures/reasonably available control technology demonstration, reasonable further progress demonstration, attainment demonstration and associated air quality modeling, and the transportation conformity motor vehicle emissions budgets. The EPA also granted California's request to extend the attainment deadline for the San Joaquin Valley to April 5, 2015 and approved commitments to measures and reductions by the District and the ARB. Finally, it disapproved the State Implementation Plan's contingency provisions and issued a protective finding for transportation conformity determinations.

In December 2012, the District adopted the 2012 $PM_{2.5}$ Plan to bring the San Joaquin Valley into attainment of the EPA's 2006 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$. The ARB approved the District's 2012 $PM_{2.5}$ Plan for the 2006 standard at a public hearing on January 24, 2013 (SJVAPCD 2012a). This plan seeks to bring the Valley into attainment with the standard by 2019, with the expectation that most areas will achieve attainment before that time.

The 2015 Plan for the 1997 $PM_{2.5}$ Standard approved by the District Governing Board on April 16, 2015—will bring the Valley into attainment of the EPA's 1997 $PM_{2.5}$ standard as expeditiously as practicable, but no later than December 31, 2020. The plan was required to request reclassification to Serious nonattainment and to extend the attainment date from 2018 to 2020 (SJVAPCD 2015b).

The 2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard was adopted on September 15, 2016. This plan includes an attainment impracticability demonstration and request for reclassification of the Valley from Moderate nonattainment to Serious nonattainment. The 2016 $PM_{2.5}$ Plan is under ARB review (SJVAPCD 2017b).

The SJVAPCD adopted the 2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards on November 15, 2018. This plan provides a combined strategy to address the EPA federal 1997 annual $PM_{2.5}$ standard of 15 $\mu g/m^3$ and 24-hour $PM_{2.5}$ standard of 65 $\mu g/m^3$; the 2006 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$; and the 2012 annual $PM_{2.5}$ standard of 12 $\mu g/m^3$. This plan demonstrates attainment of the federal $PM_{2.5}$ standards as expeditiously as practicable (SJVAPCD 2018b).

## SJVAPCD Rules and Regulations

The SJVAPCD rules and regulations that may apply to the project include, but are not limited to the following:

**Rule 2201—New and Modified Stationary Source Review Rule.** The review of new and modified Stationary Sources of air pollution and to provide mechanisms including emission trade-offs by which Authorities to Construct such sources may be granted, without interfering with the attainment or maintenance of Ambient Air Quality Standards

**Rule 4102—Nuisance.** The purpose of this rule is to protect the health and safety of the public, and applies to any source operation that emits or may emit air contaminants or other materials. Agricultural activities are exempt from the nuisance rule.

**Rule 4201—Particulate Matter Concentration**. This rule shall apply to any source operation which emits or may emit dust, fumes, or total suspended particulate matter.

**Rule 4309—Dryers, Dehydrators, and Ovens**. The purpose of this rule is to limit emissions of oxides of nitrogen ($NO_X$) and carbon monoxide (CO) from dryers, dehydrators, and ovens. This rule applies to any dryer, dehydrator, or oven that is fired on gaseous fuel, liquid fuel, or is fired on gaseous and liquid fuel sequentially, and the total rated heat input for the unit is 5.0 million British thermal units per hour (5.0 MMBtu/hr) or greater.

**Rule 4601—Architectural Coatings.** The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling. Only compliant components are available for purchase in the San Joaquin Valley.

**Rule 4641—Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations.** The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641. This regulation is enforced on the asphalt provider

**Rule 4702—Internal Combustion Engines.** The purpose of this rule is to limit the emissions of $NO_X$, carbon monoxide (CO), VOC, and sulfur oxides ($SO_X$) from internal combustion engines.

**Regulation VIII—Fugitive $PM_{10}$ Prohibitions.** This regulation is a control measure that is one main strategies from the 2006 $PM_{10}$ for reducing the $PM_{10}$ emissions that are part of fugitive dust. Projects over 10 acres are required to file a Dust Control Plan (DCP) containing dust control practices sufficient to comply with Regulation VIII. Rule 8021 regulates construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and trackout, etc. All development projects that involve soil disturbance are subject to at least one provision of the Regulation VIII series of rules.

### CEQA

The District has three roles under CEQA:

1. **Lead Agency:** Responsible for preparing environmental analyses for its own projects (adoption of rules, regulations, or plans) or permit projects filed with the District where the District has primary approval authority over the project.
2. **Responsible Agency:** The discretionary authority of a responsible agency is more limited than a lead agency; having responsibility for mitigating or avoiding only the environmental effects of those parts of the project which it decides to approve, carry out, or finance. The District defers to the lead agency for preparation of environmental documents for land use projects that also have discretionary air quality permits, unless no document is prepared by the lead agency and potentially significant impacts related to the permit are possible. The District regularly submits comments on documents prepared by lead agencies to ensure that District concerns are addressed.
3. **Commenting Agency:** The District reviews and comments on air quality analyses prepared by other public agencies (such as the project).

The District also provides guidance and thresholds for CEQA air quality and GHG analyses. The result of this guidance, as well as state regulations to control air pollution, is an overall improvement in the Air Basin. In particular, the District's 2015 GAMAQI states the following:

1. 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. Section 65302.1 of the California Government Code requires cities and counties in the San Joaquin Valley to amend appropriate elements of their general plans to include data, analysis, comprehensive goals, policies, and feasible implementation strategies to improve air quality in their next housing element revisions.
2. 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.

## 2.4.3 - Local

The Fresno County General Plan was adopted in October 2000 (Fresno County 2000). The applicable air quality goals and policies from the General Plan are listed below.

### Relevant General Plan Air Quality Related Goals and Policies

- **Policy OS-G.1:** The County shall develop standard methods for determining and mitigating project air quality impacts and related thresholds of significance for use in environmental documents. The County will do this in conjunction with the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) and the cities in Fresno County.
- **Policy OS-G.2:** The County shall ensure that air quality impacts identified during the CEQA review process are fairly and consistently mitigated. The County shall require projects to comply with the County's adopted air quality impact assessment and mitigation procedures.
- **Policy OS-G.4:** The County shall consult with the SJVUAPCD during CEQA review for projects that require air quality impact analysis and ensure that the SJVUAPCD is on the distribution list for all CEQA documents.
- **Policy OS-G.12:** The County shall continue, through its land use planning processes, to avoid inappropriate location of residential uses and sensitive receptors in relation to uses that include but are not limited to industrial and manufacturing uses and any other use which have the potential for creating a hazardous or nuisance effect.
- **Policy OS-G.13:** The County shall include fugitive dust control measures as a requirement for subdivision maps, site plans, and grading permits. This will assist in implementing the SJVUAPCD's particulate matter less than ten microns ($PM_{10}$) regulation (Regulation VIII). Enforcement actions can be coordinated with the Air District's Compliance Division.
- **Policy OS-G.14:** The County shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.
- **Policy OS-G.15:** The County shall work to reduce $PM_{10}$ and $PM_{2.5}$ emissions from County-maintained roads by considering shoulder treatments for dust control as part of a road reconstruction project.

## 2.4.4 - Existing Sources of Toxic Emissions

No existing or planned sources of toxic emissions were identified that exceed ARB recommendations in its Air Quality Land Use Handbook for siting sensitive land uses.

## 2.4.5 - ARB Air Quality Land Use Handbook

The following is a list of land uses that may result in impacts to sensitive land uses when located near specific sources of air pollution (ARB 2005):

- High traffic freeways and roads
- Distribution centers
- Rail yards
- Ports
- Refineries
- Chrome plating facilities
- Dry cleaners
- Large gas dispensing facilities

The Pistachio Processing Plant is not among the uses listed; however, a screening analysis is included to ensure that impacts from TACs would be less than significant. The project includes a substantial number of diesel trucks; however, the site is in an agricultural area with no sensitive receptors nearby.

# SECTION 3: CLIMATE CHANGE SETTING

## 3.1—Climate Change

Climate change is a change in the average weather of the earth that is measured by alterations in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes occurring in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level of statistical significance, specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. In its Fourth Assessment Report, the IPCC predicted that the global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1 degrees Celsius (°C) to 6.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios (IPCC 2007a). The report also concluded that "[w]arming of the climate system is unequivocal," and that "[m]ost of the observed increase in global average temperatures since the mid-20$^{th}$ century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations."

An individual project cannot generate enough GHG emissions to cause a discernible change in global climate. However, the project participates in the potential for global climate change by its incremental contribution of GHGs—and when combined with the cumulative increase of all other sources of GHGs—constitute potential influences on global climate change.

### 3.1.1 - Consequences of Climate Change in California

In California, climate change may result in consequences such as the following (from CCCC 2006 and Moser et al. 2009):

- **A reduction in the quality and supply of water from the Sierra snowpack.** If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower.
- **Increased risk of large wildfires.** If rain increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of southern California are estimated to increase by approximately 30 percent toward the end of the 21$^{st}$ century because more winter rain will stimulate the growth of more plant "fuel" available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90 percent more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- **Reductions in the quality and quantity of certain agricultural products.** The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.

- **Exacerbation of air quality problems.** If temperatures rise to the medium warming range, there could be 75 to 85 percent more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- **A rise in sea levels resulting in the displacement of coastal businesses and residences.** During the past century, sea levels along California's coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Elevations of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.
- **An increase in temperature and extreme weather events.** Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.
- **A decrease in the health and productivity of California's forests.** Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.

## Consequences of Climate Change in the Project Area

Figure 5 displays a chart of measured historical and projected annual average maximum temperatures in the project area. As shown in the figure, temperatures are expected to rise in all models used for the analysis. The results indicate that the annual mean temperatures are predicted to increase by 5.6 degrees Fahrenheit (°F) based on the 2070 to 2099 projections from a 1965 to 1990 baseline (CalAdapt 2017).

### *Water Supply*

The project will use surface water to provide water for the project. The availability of surface water available could decline if climate change results in reduced snowpack in the Sierra Nevada and less surface water is available for farming and other activities.

### *Wildfires*

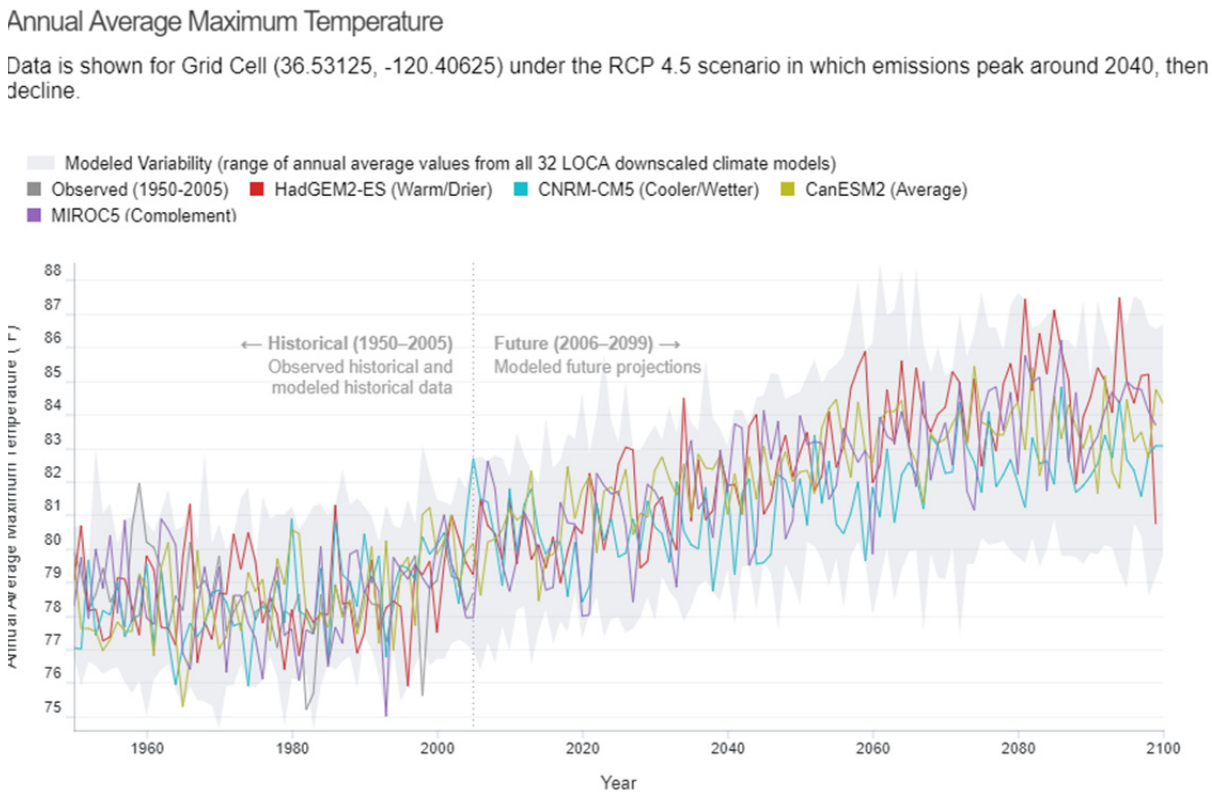
The project site is in an irrigated agricultural area with limited fuels that would not be subject to a wildfire. The potential for increased temperatures and drought conditions due to climate change would result in increased risk from wildfire in foothill and mountain areas of Fresno County that are distant from the project site.

## Human Health Effects of GHG Emissions

GHG emissions from development projects would not result in concentrations that would directly impact public health. However, the cumulative effects of GHG emissions on climate change have the potential to cause adverse effects to human health.

In its report, Global Climate Change Impacts in the U.S. (2009), the U.S. Global Change Research Program has analyzed the degree to which impacts on human health are expected to impact the United States.

**Figure 5: Observed and Projected Temperatures for Climate Change in the Project Area**




Source: CalAdapt 2020

Potential effects of climate change on public health include:

- Direct Temperature Effects: Climate change may directly affect human health through increases in average temperatures, which are predicted to increase the incidence of heat waves and hot extremes.
- Extreme Events: Climate change may affect the frequency and severity of extreme weather events, such as hurricanes and extreme heat and floods, which can be destructive to human health and well-being.
- Climate-Sensitive Diseases: Climate change may increase the risk of some infectious diseases, particularly those diseases that appear in warm areas and are spread by mosquitoes and other insects, such as malaria, dengue fever, yellow fever, and encephalitis.
- Air Quality: Respiratory disorders may be exacerbated by warming-induced increases in the frequency of smog (ground-level ozone) events and particulate air pollution (EPA 2009a).

Although there could be health effects resulting from changes in the climate and the consequences that can occur, inhalation of GHGs at levels currently in the atmosphere would not result in adverse health effects, with the exception of ozone and aerosols (particulate matter). The potential health effects of ozone and particulate matter are discussed in criteria pollutant analyses. At very high indoor concentrations (not at levels existing outside), carbon dioxide ($CO_2$), methane, sulfur hexafluoride, and some chlorofluorocarbons can cause suffocation as the gases can displace oxygen (CDC 2010 and OSHA 2003).

## 3.2—Greenhouse Gases

Gases that trap heat in the atmosphere are referred to as GHGs. The effect is analogous to the way a greenhouse retains heat. Common GHGs include water vapor, $CO_2$, methane, $NO_X$, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities emit GHGs. The presence of GHGs in the atmosphere affects the earth's temperature. It is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Climate change is driven by forcings and feedbacks. Radiative forcing is the difference between the incoming energy and outgoing energy in the climate system. Positive forcing tends to warm the surface while negative forcing tends to cool it. Radiative forcing values are typically expressed in watts per square meter. A feedback is a climate process that can strengthen or weaken a forcing. For example, when ice or snow melts, it reveals darker land underneath which absorbs more radiation and causes more warming. The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere. The global warming potential of a gas is essentially a measurement of the radiative forcing of a GHG compared with the reference gas, $CO_2$.

Individual GHG compounds have varying global warming potential and atmospheric lifetimes. $CO_2$, the reference gas for global warming potential, has a global warming potential of one. The global warming potential of a GHG is a measure of how much a given mass of a GHG is estimated to contribute to global warming. To describe how much global warming a given type and amount of GHG may cause, the carbon dioxide equivalent is used. The calculation of the carbon dioxide equivalent is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent reference gas, $CO_2$. For example, $CH_4$'s warming potential of 25 indicates that $CH_4$ has 25 times greater warming effect than $CO_2$ on a molecule-per-molecule basis. A carbon dioxide equivalent is the mass emissions of an individual GHG multiplied by its global warming potential. GHGs defined by Assembly Bill (AB) 32 (see the Climate Change Regulatory Environment section for a description) include $CO_2$, $CH_4$, $NO_X$, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. They are described in Table 6. A seventh GHG, nitrogen trifluoride, was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. The global warming potential (GWP) amounts are from IPCC Fourth Assessment Report (AR4). The AR4 GWP amounts are incorporated into the CalEEMod 2016.3.2 used in this analysis. Although the newer IPCC Fifth Assessment Report (AR5) includes new global warming potential amounts, ARB continues to use AR4 rates for inventory purposes, including the 2018 inventory released on October 19, 2020, to ensure consistency with past inventories. Until such time as ARB updates its Scoping Plan inventories to utilize AR5 GWPs, it is appropriate to continue using AR4 GWPs for CEQA analyses, which are based on Scoping Plan consistency.

## Table 6: Description of Greenhouse Gases

| Greenhouse Gas | Description and Physical Properties | Sources |
|---|---|---|
| Nitrous oxide | Nitrous oxide (laughing gas) is a colorless GHG. It has a lifetime of 114 years. Its global warming potential is 298. | Microbial processes in soil and water, fuel combustion, and industrial processes. |
| Methane | Methane is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 25. | Methane is extracted from geological deposits (natural gas fields). Other sources are landfills, fermentation of manure, and decay of organic matter. |
| Carbon dioxide | Carbon dioxide ($CO_2$) is an odorless, colorless, natural GHG. Carbon dioxide's global warming potential is 1. The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960. | Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood. |
| Chlorofluorocarbons | These are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). Global warming potentials range from 124 to 14,800. | Chlorofluorocarbons were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987. |
| Perfluorocarbons | Perfluorocarbons have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Global warming potentials range from7,390 to 12,200. | Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing. |
| Sulfur hexafluoride | Sulfur hexafluoride ($SF_6$) is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential of 22,800. | This gas is man-made and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas. |
| Nitrogen trifluoride | Nitrogen trifluoride ($NF_3$) was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. It has a high global warming potential of 17,200. | This gas is used in electronics manufacture for semiconductors and liquid crystal displays. |
| Sources: Compiled from a variety of sources, primarily Intergovernmental Panel on Climate Change 2007a and 2007b. | | |

The State has begun the process of addressing pollutants referred to as short-lived climate pollutants. Senate Bill (SB) 605, approved by the governor on September 14, 2014 required the ARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants by January 1, 2016. ARB was required to complete an emission inventory of these pollutants, identify research needs, identify existing and potential new control measures that offer co-benefits, and coordinated with other state agencies and districts to develop measures. The Short Lived Climate

Pollutant Strategy was approved by the ARB in March 2017. The strategy calls for reductions of 50 percent from black carbon, 40 percent from methane, and 40 percent from HFCs from the 2030 Business as Usual (BAU) inventory for these pollutants (ARB 2017b).

The short-lived climate pollutants include three main components: black carbon, fluorinated gases, and methane. Fluorinated gases and methane are described in Table 6 and are already included in the California GHG inventory. Black carbon has not been included in past GHG inventories; however, ARB will include it in its comprehensive strategy (ARB 2015b).

Ozone is another short-lived climate pollutant that will be part of the strategy. Ozone affects evaporation rates, cloud formation, and precipitation levels. Ozone is not directly emitted, so its precursor emissions—VOC and $NO_X$ on a regional scale and $CH_4$ on a hemispheric scale—will be subject of the strategy (ARB 2015b).

Black carbon is a component of fine particulate matter. Black carbon is formed by incomplete combustion of fossil fuels, biofuels, and biomass. Sources of black carbon within a jurisdiction may include exhaust from diesel trucks, vehicles, and equipment, as well as smoke from biogenic combustion. Biogenic combustion sources of black carbon include the burning of biofuels used for transportation, the burning of biomass for electricity generation and heating, prescribed burning of agricultural residue, and natural and unnatural wildfires. Black carbon is not a gas but an aerosol—particles or liquid droplets suspended in air. Black carbon only remains in the atmosphere for days to weeks, whereas other GHGs can remain in the atmosphere for years. Black carbon can be deposited on snow, where it absorbs sunlight, reduces sunlight reflectivity, and hastens snowmelt. Direct effects include absorbing incoming and outgoing radiation; indirectly, black carbon can also affect cloud reflectivity, precipitation, and surface dimming (cooling).

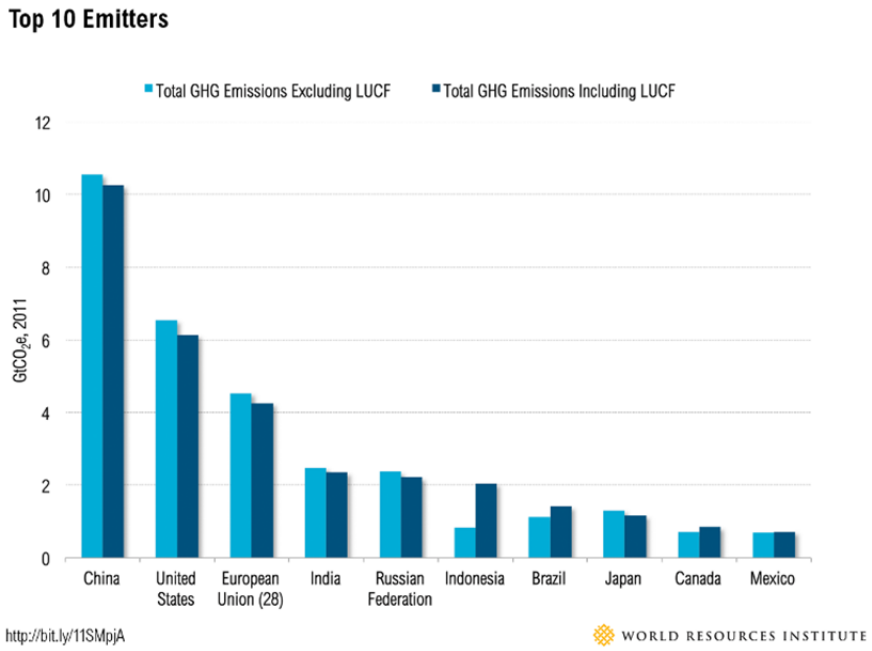
Global warming potentials for black carbon were not defined by the IPCC in its Fourth Assessment Report. The ARB has identified a global warming potential of 3,200 using a 20-year time horizon and 900 using a 100-year time horizon from the IPCC Fifth Assessment. Sources of black carbon are already regulated by ARB, and air district criteria pollutant and toxic regulations that control fine particulate emissions from diesel engines and other combustion sources (ARB 2015b). Additional controls on the sources of black carbon specifically for their GHG impacts beyond those required for toxic and fine particulates are not likely to be needed.

Water vapor is also considered a GHG. Water vapor is an important component of our climate system and is not regulated. Increasing water vapor leads to warmer temperatures, which causes more water vapor to be absorbed into the air. Warming and water absorption increase in a spiraling cycle. Water vapor feedback can also amplify the warming effect of other greenhouse gases, such that the warming brought about by increased $CO_2$ allows more water vapor to enter the atmosphere (NASA 2015b).

### 3.2.1 - Emissions Inventories

An emissions inventory is a database that lists, by source, the amount of air pollutants discharged into the atmosphere of a geographic area during a given time period. Emissions worldwide were approximately 43,286 million metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2012. As shown in Figure 6, China was the largest GHG emitter with over 10 billion metric tons of $CO_2e$, and the United States was the second largest GHG emitter with over 6 billion metric tons of $CO_2e$ (WRI 2014).

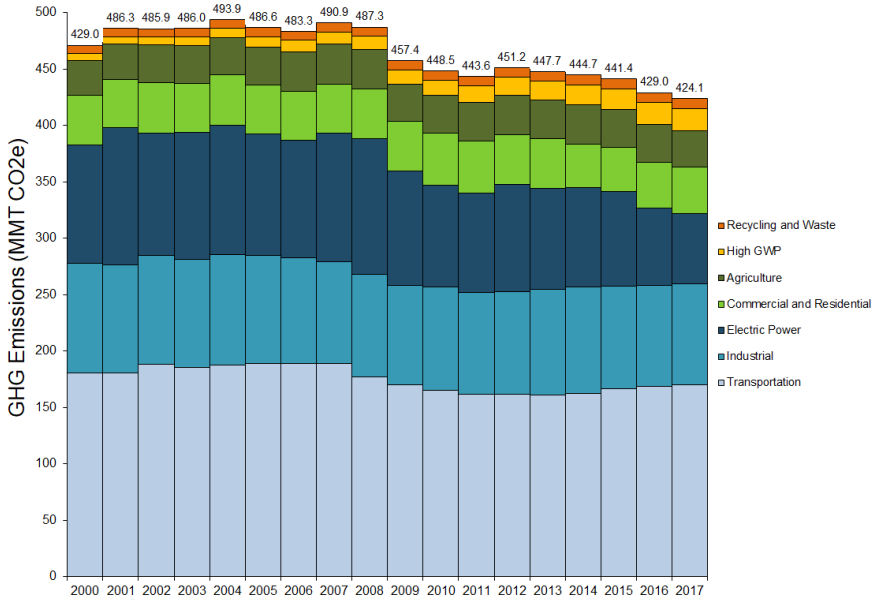
**Figure 6: Greenhouse Gas Emissions Trends**




Source: WRI 2014.

Figure 7 shows the contributors of GHG emissions in California between years 2000 and 2017 by Scoping Plan category. The main contributor was transportation. The second-highest sector was industrial, which includes sources from refineries, general fuel use, oil and gas extraction, cement plants, and cogeneration heat output. ARB reported that California's GHG emissions inventory was 424.1 $MMTCO_2e$ in 2017 (ARB 2018a). This amount is below the State's 2020 emission target of 431 $MMTCO_2e$. The ARB recently released the 2018 GHG inventory, which that shows emissions were 425 $MMTCO_2e$ in 2018 (ARB 2020b).

**Figure 7: Greenhouse Gas Emission Trends by Scoping Plan Category in California**




Source: ARB 2017c.

## 3.3—Regulatory Environment

### 3.3.1 - International

International organizations, such as the ones discussed below, have made substantial efforts to reduce GHGs. Preventing human-induced climate change will require the participation of all nations in solutions to address the issue.

**Intergovernmental Panel on Climate Change.** In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change. The panel was tasked with assessing the scientific, technical, and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

**United Nations Framework Convention on Climate Change (Convention).** On March 21, 1994, the United States joined a number of countries around the world in signing the Convention. Under the Convention, governments gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

**Kyoto Protocol.** The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions at average of five percent against 1990 levels over the five-year period from 2008–2012. The Convention (as discussed above) encouraged industrialized countries to stabilize emissions; however, the Protocol commits them to do so. Developed countries have contributed more emissions over the last 150 years; therefore, the Protocol places a heavier burden on developed nations under the principle of “common but differentiated responsibilities.”

In 2001, President George W. Bush indicated that he would not submit the treaty to the U.S. Senate for ratification, which effectively ended American involvement in the Kyoto Protocol. In December 2009, international leaders met in Copenhagen to address the future of international climate change commitments post-Kyoto. No binding agreement was reached in Copenhagen; however, the Committee identified the long-term goal of limiting the maximum global average temperature increase to no more than 2°C above pre-industrial levels, subject to a review in 2015. The UN Climate Change Committee held additional meetings in Durban, South Africa in November 2011; Doha, Qatar in November 2012; and Warsaw, Poland in November 2013. The meetings are gradually gaining consensus among participants on individual climate change issues.

On September 23, 2014, more than 100 heads of state and government, along with leaders from the private sector and civil society met at the Climate Summit in New York hosted by the United Nations. At the Summit, heads of government, business, and civil society announced actions in areas that would have the greatest impact on reducing emissions, including: climate finance, energy, transport, industry, agriculture, cities, forests, and building resilience.

**Paris Agreement**. Parties to the United Nations Framework Convention on Climate Change (UNFCCC) reached a landmark agreement on December 12, 2015 in Paris, charting a fundamentally new course in the two-decade-old global climate effort. Culminating in a four-year negotiating round, the new treaty ends the strict differentiation between developed and developing countries that characterized earlier efforts, replacing it with a common framework that commits all countries to put forward their best efforts and to strengthen those efforts in the years ahead. This includes, for the first time, requirements that all parties report regularly on their emissions and implementation efforts, and undergo international review.

The agreement and a companion decision by parties were the key outcomes of the conference, known as the 21st session of the UNFCCC Conference of the Parties, or COP 21. Together, the Paris Agreement and the accompanying COP decision:

- Reaffirm the goal of limiting global temperature increase well below 2 degrees Celsius, while urging efforts to limit the increase to 1.5 degrees;
- Establish binding commitments by all parties to make "nationally determined contributions" (NDCs), and to pursue domestic measures aimed at achieving them;
- Commit all countries to report regularly on their emissions and "progress made in implementing and achieving" their NDCs, and to undergo international review;
- Commit all countries to submit new NDCs every five years, with the clear expectation that they will "represent a progression" beyond previous ones;
- Reaffirm the binding obligations of developed countries under the UNFCCC to support the efforts of developing countries, while for the first time encouraging voluntary contributions by developing countries too;
- Extend the current goal of mobilizing $100 billion a year in support by 2020 through 2025, with a new, higher goal to be set for the period after 2025;
- Extend a mechanism to address "loss and damage" resulting from climate change, which explicitly will not "involve or provide a basis for any liability or compensation;"
- Require parties engaging in international emissions trading to avoid "double counting;" and
- Call for a new mechanism, similar to the Clean Development Mechanism under the Kyoto Protocol, enabling emission reductions in one country to be counted toward another country's NDC (C2ES 2015a).

President Trump announced on June 1, 2017 that his administration will withdraw from the Paris Agreement. The administration indicated that it would follow the withdrawal process laid out in the Paris Agreement, which could take nearly 4 years to complete (White House 2017). The impact of this decision on climate change is that it will likely delay or reverse some of the actions by the previous administration to reduce GHG emissions.

### 3.3.2 - Federal Regulations

Prior to the last decade, there were no concrete federal regulations of GHGs or major planning for climate change adaptation. Since then, federal activity has increased. The following are actions regarding the federal government, GHGs, and fuel efficiency.

**Greenhouse Gas Endangerment.** *Massachusetts v. EPA* (Supreme Court Case 05-1120) was argued before the United States Supreme Court on November 29, 2006, in which it was petitioned that the EPA regulate four GHGs, including $CO_2$, under Section 202(a)(1) of the Clean Air Act. A decision was made on April 2, 2007, in which the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. The Court held that the Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed in the section "Clean Vehicles" below. After a lengthy legal challenge, the United States Supreme Court declined to review an Appeals Court ruling upholding the EPA Administrator findings (EPA 2009b).

**Clean Vehicles**. Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light-duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Safety Administration announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program applies to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of $CO_2$ per mile, equivalent to 35.5 miles per gallon; that is, if the automobile industry were to meet this $CO_2$ level solely through fuel economy improvements. Together, these standards would cut $CO_2$ emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012–2016). The EPA and the National Highway Safety Administration issued final rules on a second-phase joint rulemaking, establishing national standards for light-duty vehicles for model years 2017 through 2025 in August 2012 (EPA 2012b). The new standards for model years

2017 through 2025 apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles. The final standards are projected to result in an average industry fleetwide level of 163 grams/mile of $CO_2$ in model year 2025, which is equivalent to 54.5 miles per gallon (mpg) if achieved exclusively through fuel economy improvements.

The EPA and the U.S. Department of Transportation issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses on September 15, 2011, which became effective November 14, 2011. For combination tractors, the agencies are proposing engine and vehicle standards that began in the 2014 model year and achieve up to a 20-percent reduction in $CO_2$ emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10-percent reduction for gasoline vehicles, and a 15-percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10-percent reduction in fuel consumption and $CO_2$ emissions from the 2014 to 2018 model years.

**Mandatory Reporting of Greenhouse Gases.** The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule, which became effective January 1, 2010. The rule requires reporting of GHG emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the EPA.

**New Source Review.** The EPA issued a final rule on May 13, 2010 that establishes thresholds for GHGs, which will define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule “tailors” the requirements of these Clean Air Act permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the federal code of regulations, the EPA states:

> This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the Clean Air Act, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to greenhouse gas sources, starting with the largest greenhouse gas emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources, but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for greenhouse gas emissions until at least April 30, 2016.

The EPA estimates that facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest GHG emitters—power plants, refineries, and cement production facilities.

**Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units.** As required by a settlement agreement, the EPA proposed new performance standards for emissions of $CO_2$ for new, affected, fossil fuel-fired electric utility generating units on March 27, 2012. New sources greater than 25 megawatts would be required to meet an output-based standard of 1,000 pounds of $CO_2$ per megawatt-hour, based on the performance of widely used natural gas combined cycle technology. President Trump signed the Executive Order on Energy Independence (Executive Order 13783), which calls for a review of the Clean Power Plan. On October 16, 2017, the EPA issued the proposed rule Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (EPA 2017).

**Cap-and-Trade.** Cap-and-Trade refers to a policy tool where emissions are limited to a certain amount and can be traded, or provides flexibility on how the emitter can comply. There is no federal GHG Cap-and-Trade Program currently; however, some states have joined to create initiatives to provide a mechanism for Cap-and-Trade.

The Regional Greenhouse Gas Initiative is an effort to reduce GHGs among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Each state caps $CO_2$ emissions from power plants, auctions $CO_2$ emission allowances, and invests the proceeds in strategic energy programs that further reduce emissions, save consumers money, create jobs, and build a clean energy economy. The Initiative began in 2008.

The Western Climate Initiative partner jurisdictions have developed a comprehensive initiative to reduce regional GHG emissions to 15 percent below 2005 levels by 2020. The partners are California, British Columbia, Manitoba, Ontario, and Quebec. Currently only California and Quebec are participating in the Cap-and-Trade Program (C2ES 2015).

## 3.3.3 - California

### Legislative Actions to Reduce GHGs

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation such as the landmark AB 32 California Global Warming Solutions Act of 2006 was specifically enacted to address GHG emissions. Other legislation such as Title 24 and Title 20 energy standards were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major provisions of the legislation.

**AB 32.** The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include $CO_2$, methane, $NO_X$, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs. The ARB is the state agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The ARB approved the 1990 GHG emissions level of 427 $MMTCO_2e$ on December 6, 2007 (ARB 2007). Therefore, to meet the State's target, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$. Emissions in 2020 in a BAU scenario were estimated to be 596 $MMTCO_2e$, which do not account for reductions from AB 32 regulations (ARB 2008a). At that rate, a 28 percent reduction was required to achieve the 427 $MMTCO_2e$ 1990 inventory. In October 2010, ARB prepared an updated 2020 forecast to account for the effects of the 2008 recession and slower forecasted growth. The 2020 inventory without the benefits of adopted regulation is now estimated at 545 $MMTCO_2e$. Therefore, under the updated forecast, a 21.7 percent reduction from BAU is required to achieve 1990 levels (ARB 2010).

### *Progress in Achieving AB 32 Targets and Remaining Reductions Required*

The State has made steady progress in implementing AB 32 and achieving targets included in Executive Order S-3-05. The progress is evident in updated emission inventories prepared by ARB, which showed that the State inventory dropped below 1990 levels for the first time in 2016 (ARB 2018a). The 2017 Scoping Plan Update includes projections indicating that the State will meet or exceed the 2020 target with adopted regulations (ARB 2017c).

**ARB Scoping Plan**. The ARB's Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the State's emissions to 1990 levels by the year 2020 to comply with AB 32 (ARB 2008). The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 GHG target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;

- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

In addition, the Scoping Plan differentiates between "capped" and "uncapped" strategies. Capped strategies are subject to the proposed Cap-and-Trade Program. The Scoping Plan states that the inclusion of these emissions within the Cap-and-Trade Program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. Uncapped strategies that will not be subject to the Cap-and-Trade emissions caps and requirements are provided as a margin of safety by accounting for additional GHG emission reductions (ARB 2008).

The Scoping Plan included no measures that would apply to pistachio processing operations. Scoping Plan Measure No. A-1—Methane Capture at Large Dairies is the only agricultural measure that was assigned an emission reduction target (1.0 $MMTCO_2e$ in 2020). Emissions of nitrous oxide ($N_2O$) from nitrogen fertilizers was expected to be the subject of research to understand the variables affecting fertilizer $N_2O$ emissions and based on the findings, the ARB would explore opportunities for reductions.

The ARB approved the First Update to the Scoping Plan (Update) on May 22, 2014. The Update identifies the next steps for California's climate change strategy. The Update shows how California continues on its path to meet the near-term 2020 GHG limit, but also sets a path toward long-term, deep GHG emission reductions. The report establishes a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050. The Update identifies progress made to meet the near-term objectives of AB 32 and defines California's climate change priorities and activities Climate for the next several years. The Update does not set new targets for the State, but describes a path that would achieve the long term 2050 goal of Executive Order S-05-03 for emissions to decline to 80 percent below 1990 levels by 2050. The Update includes an estimate that reductions averaging 5.2 percent per year would be required after 2020 to achieve the 2050 goal.

**Cap-and-Trade Program**. The Cap-and-Trade Program is a key element of the Scoping Plan. It sets a statewide limit on sources responsible for 85 percent of California's greenhouse gas emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The program is designed to provide covered entities the flexibility to seek out and implement the lowest cost options to reduce emissions. The program conducted its first auction in November 2012. Compliance obligations began for power plants and large industrial sources in January 2013. Other significant milestones include linkage to Quebec's Cap-and-Trade system in January 2014 and starting the compliance obligation for distributors of transportation fuels, natural gas, and other fuels in January 2015 (ARB 2015c).

The Cap-and-Trade Program provides a firm cap, ensuring that the 2020 statewide emission limit will not be exceeded. An inherent feature of the Cap-and-Trade Program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are guaranteed only on an accumulative basis. As summarized by ARB in the First Update:

> The Cap-and-Trade Regulation gives companies the flexibility to trade allowances with others or take steps to cost-effectively reduce emissions at their own facilities. Companies that emit more have to turn in more allowances or other compliance instruments. Companies that can cut their GHG emissions have to turn in fewer allowances. But as the cap declines, aggregate emissions must be reduced. In other words, a covered entity theoretically could increase its GHG emissions every year and still comply with the Cap-and-Trade Program if there is a reduction in GHG emissions from other covered entities. Such a focus on aggregate GHG emissions is considered appropriate because climate change is a global phenomenon, and the effects of GHG emissions are considered cumulative (ARB 2015c).

The Cap-and-Trade Program works with other direct regulatory measures and provides an economic incentive to reduce emissions. If California's direct regulatory measures reduce GHG emissions more than expected, then the Cap-and-Trade Program will be responsible for relatively fewer emissions reductions. If California's direct regulatory measures reduce GHG emissions less than expected, then the Cap-and-Trade Program will be responsible for relatively more emissions reductions. Thus, the Cap-and-Trade Program assures that California will meet its 2020 GHG emissions reduction mandate:

> The Cap-and-Trade Program establishes an overall limit on GHG emissions from most of the California economy—the "capped sectors." Within the capped sectors, some of the reductions are being accomplished through direct regulations, such as improved building and appliance efficiency standards, the [Low Carbon Fuel Standard] LCFS, and the 33 percent [Renewables Portfolio Standard] RPS. Whatever additional reductions are needed to bring emissions within the cap is accomplished through price incentives posed by emissions allowance prices. Together, direct regulation and price incentives assure that emissions are brought down cost-effectively to the level of the overall cap. The Cap-and-Trade Regulation provides assurance that California's 2020 limit will be met because the regulation sets a firm limit on 85 percent of California's GHG emissions. In sum, the Cap-and-Trade Program will achieve aggregate, rather than site specific or project-level, GHG emissions reductions. Also, due to the regulatory architecture adopted by ARB in AB 32, the reductions attributed to the Cap-and-Trade Program can change over time depending on the State's emissions forecasts and the effectiveness of direct regulatory measures (ARB 2014b).

**AB 398.** The Governor signed AB 398 on July 25, 2017 to extend the Cap-and-Trade Program to 2030. The legislation includes provisions to ensure that offsets used by sources are limited to 4 percent of their compliance obligation from 2021 through 2025 and 6 percent from 2026 through 2030. AB 398 also prevents Air Districts from adopting or implementing emission reduction rules from stationary sources that are also subject to the Cap-and-Trade Program (CAR 2017).

**SB 32.** The Governor signed SB 32 on September 8, 2016. SB 32 gives ARB the statutory responsibility to include the 2030 target previously contained in Executive Order B-30-15 in the next Scoping Plan update. SB 32 states that "In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state [air resources] board shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030." The 2017 Climate Change Scoping Plan Update addressing the SB 32 targets was adopted on December 14, 2017. The major elements of the framework proposed to achieve the 2030 target are as follows:

ARB approved the 2017 Scoping Plan Update in December 2017. The Scoping Plan Update provides the emission inventories and strategies that will enable cities and counties to develop local greenhouse gas targets and CEQA thresholds based on consistency with the 2030 State mandate.

1. SB 350
   - Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030.
   - Doubling of energy efficiency savings by 2030.
2. Low Carbon Fuel Standard (LCFS)
   - Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020).
3. Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
   - Maintaining existing GHG standards for light- and heavy-duty vehicles.
   - Put 4.2 million zero-emission vehicles (ZEVs) on the roads.
   - Increase ZEV buses, delivery and other trucks.
4. Sustainable Freight Action Plan
   - Improve freight system efficiency.
   - Maximize use of near-zero emission vehicles and equipment powered by renewable energy.
   - Deploy over 100,000 zero-emission trucks and equipment by 2030.
5. Short-Lived Climate Pollutant (SLCP) Reduction Strategy
   - Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
   - Reduce emissions of black carbon 50 percent below 2013 levels by 2030.
6. SB 375 Sustainable Communities Strategies
   - Increased stringency of 2035 targets.
7. Post-2020 Cap-and-Trade Program
   - Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
   - ARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, ARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.

8. 20 percent reduction in greenhouse gas emissions from the refinery sector.
9. By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink (ARB 2017c).

**SB 375—The Sustainable Communities and Climate Protection Act of 2008.** SB 375 was signed into law on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

Concerning CEQA, SB 375—as codified in Public Resources Code Section 21159.28—states that CEQA findings determinations for certain projects are not required to reference, describe, or discuss (1) growth-inducing impacts or (2) any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network if the project:

1. Is in an area with an approved Sustainable Communities Strategy or an alternative planning strategy that the ARB accepts as achieving the greenhouse gas emission reduction targets;
2. Is consistent with that strategy (in designation, density, building intensity, and applicable policies); and
3. Incorporates the mitigation measures required by an applicable prior environmental document.

The 2018 RTP/SCS was adopted by Fresno COG on July 26, 2018 and reflects its latest regional vehicle miles traveled (VMT) targets (Fresno COG 2018).

**AB 1493 Pavley Regulations and Fuel Efficiency Standards.** California AB 1493, enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011 (ARB 2013d).

The standards are to be phased in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards will result in an approximately 22 percent reduction compared with the 2002 fleet, and the mid-term (2013–2016) standards will result in about a 30 percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation, rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant (ARB 2013e).

The second phase of the implementation for the Pavley bill was incorporated into Amendments to the Low-Emission Vehicle Program referred to as LEV III or the Advanced Clean Cars program. The Advanced Clean Car program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation will reduce GHGs from new cars by 34 percent from 2016 levels by 2025. The new rules will reduce pollutants from gasoline and diesel-powered cars, and deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid electric vehicles, and hydrogen fuel cell cars. The regulations will also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California (ARB 2013e).

**SB 1368—Emission Performance Standards.** In 2006, the State Legislature adopted SB 1368, which was subsequently signed into law by the governor. SB 1368 directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. The California Public Utilities Commission adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 lbs $CO_2$ per megawatt-hour (MWh).

**SB 1078—Renewable Electricity Standards.** On September 12, 2002, Governor Gray Davis signed SB 1078, requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Governor Schwarzenegger also directed the ARB (Executive Order S-21-09) to adopt a regulation by July 31, 2010, requiring the State's load serving entities to meet a 33 percent renewable energy target by 2020. The ARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. In 2011, the state legislature adopted this higher standard in SB X1-2. Renewable sources of electricity subject to the legislation include wind, small hydropower, solar, geothermal, biomass, and biogas.

**SB 350—Clean Energy and Pollution Reduction Act of 2015.** The legislature recently approved and the governor signed SB 350, which reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include: an increase in the renewables portfolio standard (RPS), higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle charging stations. Provisions for a 50 percent reduction in the use of petroleum statewide were removed from the Bill because of opposition and concern that it would prevent the Bill's passage. Specifically, SB 350 requires the following to reduce statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33 percent to 50 percent by 2030, with interim targets of 40 percent by 2024, and 25 percent by 2027.
- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the California Public Utility Commission (CPUC), the California Energy Commission (CEC), and local publicly owned utilities.
- Reorganize the Independent System Operator (ISO) to develop more regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States (California Leginfo 2015).

**SBX 7-7—The Water Conservation Act of 2009**. The legislation directs urban retail water suppliers to set individual 2020 per capita water use targets and begin implementing conservation measures to achieve those goals. Meeting this statewide goal of 20 percent decrease in demand will result in a reduction of almost 2 million acre-feet in urban water use in 2020.

**SB 100 California Renewable Portfolio Standard (2018).** The goal of the program is to achieve that 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. The bill approved by Governor Brown on September 10, 2018 would require that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030 (California Leginfo 2018).

### Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs through the use of executive orders. Although not regulatory, they set the tone for the State and guide the actions of state agencies.

**Executive Order S-3-05.** On June 1, 2005, former California Governor Arnold Schwarzenegger announced through Executive Order S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce greenhouse gas emissions to 2000 levels.
- By 2020, reduce greenhouse gas emissions to 1990 levels.
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

**Executive Order B-30-15**. On April 29, 2015, Governor Edmund G. Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments ahead of the United Nations Climate Change Conference in Paris late 2015. The executive order sets a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050, and directs the ARB to update

the Climate Change Scoping Plan to express the 2030 target in terms of $MMCO_2e$. The executive order also requires the State's climate adaptation plan to be updated every three years and for the State to continue its climate change research program, among other provisions. As with Executive Order S-3-05, this executive order is not legally enforceable against local governments and the private sector. Legislation that would update AB 32 to make post 2020 targets and requirements a mandate is in process in the State Legislature.

**Executive Order S-01-07—Low Carbon Fuel Standard.** The governor signed Executive Order S 01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, the ARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by California Energy Commission on December 24, 2007) and was submitted to ARB for consideration as an "early action" item under AB 32. The ARB adopted the Low Carbon Fuel Standard on April 23, 2009.

The Low Carbon Fuel Standard was subject to legal challenge in 2011. Ultimately, ARB was required to bring a new LCFS regulation to the Board for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS as well as new provisions designed to foster investments in the production of the low-carbon fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. The Office of Administrative Law (OAL) approved the regulation on November 16, 2015 (ARB 2015d).

**Executive Order S-13-08.** Executive Order S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy (California Natural Resources Agency 2009) was adopted, which is the ". . . first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

**Executive Orders B-55-18 Carbon Neutrality by 2045 (2018).** This Executive Order signed on September 10, 2018 sets a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is in addition to the statewide targets of reducing greenhouse gas emissions (Brown 2018).

## California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

**Title 20 Appliance Efficiency Regulations.** California Code of Regulations, Title 20: Division 2, Chapter 4, Article 4, Sections 1601–1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. Twenty-three categories of appliances are included in the scope of these regulations. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the State and those designed and sold exclusively for use in recreational vehicles or other mobile equipment (CEC 2018a).

**Title 24 Energy Efficiency Standards.** California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The most current 2016 Building Energy Efficiency Standards approved on January 19, 2016 went into effect on January 1, 2017 (CEC 2016). The CEC adopted the 2019 Building Energy Efficiency Standards on May 9, 2018. The updated standards are effective as of January 1, 2020 (CEC 2018b).

**Title 24 California Green Building Standards Code** (California Code of Regulations Title 24, Part 11 code) is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect January 1, 2011. The code is updated on a regular basis, with the most recent update consisting of the 2016 California Green Building Code Standards that became effective January 1, 2017. Local jurisdictions are permitted to adopt more stringent requirements, as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided the ordinances include a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings need to meet in order to be certified for occupancy, which is generally enforced by the local building official.

The California Green Building Standards Code (California Code of Regulations Title 24, Part 11 code) requires:

- **Short-term bicycle parking**. If a commercial project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for five percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- **Long-term bicycle parking**. For buildings with over 10 tenant-occupants, provide secure bicycle parking for five percent of tenant-occupied motorized vehicle parking capacity, with a minimum of one space (5.106.4.1.2).
- **Designated parking**. Provide designated parking in commercial projects for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2 (5.106.5.2).

- **Recycling by Occupants**. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of nonhazardous materials for recycling. (5.410.1).
- **Construction waste**. A minimum 50-percent diversion of construction and demolition waste from landfills, increasing voluntarily to 65 and 80 percent for new homes and 80-percent for commercial projects. (5.408.1, A5.408.3.1 [nonresidential], A5.408.3.1 [residential]). All (100 percent) of trees, stumps, rocks and associated vegetation and soils resulting from land clearing shall be reused or recycled (5.408.3).
- **Wastewater reduction**. Each building shall reduce the generation of wastewater by one of the following methods:
  1. The installation of water-conserving fixtures or
  2. Using nonpotable water systems (5.303.4).
- **Water use savings**. Twenty percent mandatory reduction in indoor water use with voluntary goal standards for 30, 35, and 40 percent reductions (5.303.2, A5303.2.3 [nonresidential]).
- **Water meters**. Separate water meters for buildings in excess of 50,000 square feet or buildings projected to consume more than 1,000 gallons per day (5.303.1).
- **Irrigation efficiency**. Moisture-sensing irrigation systems for larger landscaped areas (5.304.3).
- **Materials pollution control**. Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particleboard (5.404).
- **Building commissioning**. Mandatory inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies (5.410.2).

**Model Water Efficient Landscape Ordinance**. The Model Water Efficient Landscape Ordinance (Ordinance) was required by AB 1881 Water Conservation Act. The bill required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Model Ordinance by January 1, 2010. Reductions in water use of 20 percent consistent with (SBX-7-7) 2020 mandate are expected for the ordinance. Governor Brown's Drought Executive Order of April 1, 2015 (EO B-29-15) directed DWR to update the ordinance through expedited regulation. The California Water Commission approved the revised ordinance on July 15, 2015, which became effective on December 15, 2015. New development projects that include landscaped areas of 500 square feet or more are subject to the ordinance. The update requires:

- More efficient irrigation systems
- Incentives for graywater usage
- Improvements in on-site stormwater capture
- Limiting the portion of landscapes that can be planted with high water use plants
- Reporting requirements for local agencies.

**SB 97 and the CEQA Guidelines Update.** Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. The code states: "(a) On or before July 1, 2009, the Office of Planning and

Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)."

Section 21097 was also added to the Public Resources Code. This provided an exemption until January 1, 2010 for transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006—in stating that the failure to analyze adequately the effects of GHGs would not violate CEQA. The Natural Resources Agency completed the approval process and the Amendments became effective on March 18, 2010. The Natural Resources Agency adopted additional amendments related to greenhouse gases in the 2018 CEQA Guidelines Update adopted on December 28, 2018.

The 2010 CEQA Amendments along with the 2018 CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change.

Section 15064.4(b) of the CEQA Guidelines provides direction for lead agencies for assessing the significance of impacts of GHG emissions:

- The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; or
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

Section 15064.4(c) states that a lead agency may use a model or methodology to estimate greenhouse gas emissions resulting from a project. The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change. The lead agency must support

its selection of a model or methodology with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use.

The 2018 CEQA Guidelines include the following discussion regarding thresholds of significance.

> (d) Using environmental standards as thresholds of significance promotes consistency in significance determinations and integrates environmental review with other environmental program planning and regulation. Any public agency may adopt or use an environmental standard as a threshold of significance. In adopting or using an environmental standard as a threshold of significance, a public agency shall explain how the particular requirements of that environmental standard reduce project impacts, including cumulative impacts, to a level that is less than significant, and why the environmental standard is relevant to the analysis of the project under consideration. For the purposes of this subdivision, an "environmental standard" is a rule of general application that is adopted by a public agency through a public review process and that is all of the following:
>
> (1) a quantitative, qualitative or performance requirement found in an ordinance, resolution, rule, regulation, order, plan or other environmental requirement;
> (2) adopted for the purpose of environmental protection;
> (3) addresses the environmental effect caused by the project; and,
> (4) applies to the project under review.

In addition, the 2018 amendments revised Appendix G Checklist questions to include a new question specifically on energy conservation.

CEQA emphasizes that the effects of GHG emissions are cumulative, and should be analyzed in the context of CEQA's requirements for cumulative impacts analysis (see CEQA Guidelines Section 15130(f)).

### California Supreme Court GHG Ruling

In a November 30, 2015 ruling, the *California Supreme Court in Center for Biological Diversity (CBD) v. California Department of Fish and Wildlife (CDFW)* on the Newhall Ranch project, concluded that whether the project was consistent with meeting statewide emission reduction goals is a legally permissible criterion of significance, but the significance finding for the project was not supported by a reasoned explanation based on substantial evidence. The Court offered potential solutions on pages 25 to 27 of the ruling to address this issue summarized below.

Specifically, the Court advised that:

- **Substantiation of Project Reductions from BAU**. A lead agency may use a BAU comparison based on the Scoping Plan's methodology if it also substantiates the reduction a particular project must achieve to comply with statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location (p. 25).

- **Compliance with Regulatory Programs or Performance Based Standards**. "A lead agency might assess consistency with A.B. 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities. (See Final Statement of Reasons, supra, at p. 64 [greenhouse gas emissions 'may be best analyzed and mitigated at a programmatic level.']. ) To the extent a project's design features comply with or exceed the regulations outlined in the Scoping Plan and adopted by the Air Resources Board or other state agencies, a lead agency could appropriately rely on their use as showing compliance with 'performance based standards' adopted to fulfill 'a statewide . . . plan for the reduction or mitigation of greenhouse gas emissions.' (CEQA Guidelines § 15064.4(a)(2), (b)(3); see also id., § 15064(h)(3) [determination that impact is not cumulatively considerable may rest on compliance with previously adopted plans or regulations, including 'plans or regulations for the reduction of greenhouse gas emissions']. )" (p. 26).
- **Compliance with GHG Reduction Plans or Climate Action Plans (CAPs)**. A lead agency may utilize "geographically specific GHG emission reduction plans" such as climate action plans or greenhouse gas emission reduction plans to provide a basis for the tiering or streamlining of project-level CEQA analysis (p. 26).
- **Compliance with Local Air District Thresholds**. A lead agency may rely on "existing numerical thresholds of significance for greenhouse gas emissions" adopted by, for example, local air districts (p. 27).

Therefore, consistent with CEQA Guidelines Appendix G, the three factors identified in CEQA Guidelines Section 15064.4 and the recently issued Newhall Ranch opinion, the GHG impacts would be considered significant if the project would:

- Conflict with a compliant GHG Reduction Plan if adopted by the lead agency;
- Exceed the SJVAPCD GHG Reduction Threshold; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs.

## 3.3.4 - San Joaquin Valley Air Pollution Control District

### Climate Change Action Plan

On August 21, 2008, the SJVAPCD Governing Board approved a proposal called the Climate Change Action Plan (CCAP) (SJVAPCD 2008). The CCAP began with a public process bringing together stakeholders, land use agencies, environmental groups, and business groups to conduct public workshops to develop comprehensive policies for CEQA guidelines, a carbon exchange bank, and voluntary GHG emissions mitigation agreements for the Board's consideration. The CCAP contains the following goals and actions:

- Develop GHG significance thresholds to address CEQA projects with GHG emission increases.
- Develop the San Joaquin Valley Carbon Exchange for banking and trading GHG reductions.
- Authorize use of the SJVAPCD's existing inventory reporting system to allow use for GHG reporting required by AB 32 regulations.

- Develop and administer GHG reduction agreements to mitigate proposed emission increases from new projects.
- Support climate protection measures that reduce greenhouse gas emissions as well as toxic and criteria pollutants. Oppose measures that result in a significant increase in toxic or criteria pollutant emissions in already impacted areas.

On December 17, 2009, the SJVAPCD Governing Board adopted "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA," and the policy "District Policy—Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency." The SJVAPCD concluded that the existing science is inadequate to support quantification of the impacts that project-specific GHG emissions have on global climatic change. The SJVAPCD found the effects of project-specific emissions to be cumulative, and without mitigation, their incremental contribution to global climatic change could be considered cumulatively considerable. The SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their GHG emissions, whether through project design elements or mitigation (SJVAPCD 2009a).

The SJVAPCD's approach is intended to streamline the process of determining if project-specific GHG emissions would have a significant effect. Projects exempt from the requirements of CEQA, and projects complying with an approved plan or mitigation program would be determined to have a less than significant cumulative impact. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources, and must have a certified final CEQA document.

For non-exempt projects, those projects for which there is no applicable approved plan or program, or those projects not complying with an approved plan or program, the lead agency must evaluate the project against performance-based standards and would require the adoption of design elements, known as Best Performance Standards (BPS), to reduce GHG emissions. The BPS have not yet fully been established, though they must be designed to achieve a 29 percent reduction when compared with the BAU projections identified in ARB's AB 32 Scoping Plan.

BAU represents the emissions that would occur in 2020 if the average baseline emissions during the 2002–2004 period were grown to 2020 levels, without control. Thus, these standards would carry with them pre-quantified emissions reductions, eliminating the need for project-specific quantification. Therefore, projects incorporating BPS would not require specific quantification of GHG emissions, and automatically would be determined to have a less than significant cumulative impact for GHG emissions.

For stationary source permitting projects, BPS means, "The most stringent of the identified alternatives for control of GHG emissions, including type of equipment, design of equipment and operational and maintenance practices, which are achieved-in-practice for the identified service, operation, or emissions unit class." The SJVAPCD has identified BPS for the following sources: boilers; dryers and dehydrators; oil and gas extraction; storage, transportation, and refining operations; cogeneration; gasoline dispensing facilities; volatile organic compound control technology; and steam generators.

For development projects, BPS means, "Any combination of identified GHG emission reduction measures, including project design elements and land use decisions that reduce project-specific GHG emission reductions by at least 29 percent compared with business as usual."

Projects not incorporating BPS would require quantification of GHG emissions and demonstration that BAU GHG emissions have been reduced or mitigated by 29 percent. As stated earlier, ARB's adjusted inventory reduced the amount required by the State to achieve 1990 emission levels from 29 percent to 21.7 percent to account for slower growth experienced since the 2008 recession. According to SJVAPCD guidance, quantification of GHG emissions would be required for all projects for which the lead agency has determined that an environmental impact report is required, regardless of whether the project incorporates BPS. The SJVAPCD has not yet adopted BPS for development projects, so quantification of project emissions is required (SJVAPCD 2009b).

### San Joaquin Valley Carbon Exchange

The SJVAPCD initiated work on the San Joaquin Valley Carbon Exchange in November 2008. The purpose of the carbon exchange is to quantify, verify, and track voluntary GHG emissions reductions generated within the San Joaquin Valley. However, the SJVAPCD has pursued an alternative strategy that incorporates the GHG emissions into its existing Rule 2301—Emission Reduction Credit Offset Banking that formerly only addressed criteria pollutants. The SJVAPCD is also participating with the California Air Pollution Control Officers Association (CAPCOA), of which it is a member, in the CAPCOA Greenhouse Gas Reduction Exchange (GHG Rx). The GHG Rx is operated cooperatively by air districts that have elected to participate. Participating districts have signed a Memorandum of Understanding (MOU) with CAPCOA and agree to post only those credits that meet the Rx standards for quality. The objective is to provide a secure, low-cost, high-quality greenhouse gas exchange for credits created in California. The GHG Rx is intended to help fulfill compliance obligations or mitigation needs of local projects subject to environmental review, reducing the uncertainty of using credits generated in distant locations. The SJVAPCD currently has no credits posted to the GHG Rx as of this writing (CAPCOA 2018).

#### *Rule 2301*

While the Climate Change Action Plan indicated that the GHG emission reduction program would be called the San Joaquin Valley Carbon Exchange, the District incorporated a method to register voluntary GHG emission reductions into its existing Rule 2301—Emission Reduction Credit Banking through amendments of the rule. Amendments to the rule were adopted on January 19, 2012. The purposes of the amendments to the rule include the following:

- Provide an administrative mechanism for sources to bank voluntary GHG emission reductions for later use.
- Provide an administrative mechanism for sources to transfer banked GHG emission reductions to others for any use.
- Define eligibility standards, quantitative procedures, and administrative practices to ensure that banked GHG emission reductions are real, permanent, quantifiable, surplus, and enforceable.

### Fresno Council of Governments

#### *Regional Transportation Plan*

The Fresno Council of Governments (Fresno COG) is the Regional Transportation Planning Agency (RTPA) for the Fresno County region. The Fresno COG adopted the 2014 Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS) that included the County's first Sustainable Community Strategy to comply with SB 375. The RTP is a planning document prepared in cooperation with the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the California Department of Transportation (Caltrans), and other stakeholders, including transportation system users. The SCS is intended to show how integrated land use and transportation planning can lead to lower greenhouse gas (GHG) emissions from autos and light trucks. SB 375 includes the following four primary findings related to the RTP/SCS development process:

- SB 375 required the ARB to develop regional GHG emission reduction targets for cars and light trucks for each of the 18 MPOs in California, including Fresno COG. ARB approved targets for the San Joaquin Valley in January 2013. The target for Fresno is a per capita reduction in GHG emissions from passenger vehicle travel of five percent by 2020 and 10 percent by 2035 relative to 2005 levels. However, the 2014 RTP/SCS includes a target of nine percent per capita reduction by 2020 and an 11 percent reduction by 2035 relative to 2005 levels (ARB 2015e). The 2018 RTP indicates that the County continues to pursue the 5 percent reduction by 2020 and 10 percent reduction by 2035 (Fresno COG 2018).
- SB 375 required the preparation of an SCS. Fresno COG included an SCS that specifies how the GHG emission reduction target set by ARB will be achieved in the RTP. If the target cannot be met through the SCS, then an Alternative Planning Strategy (APS) shall be prepared by Fresno COG. Chapter 4 of the 2014 RTP includes the SCS for Fresno COG. Chapter 3 of the 2018 RTP includes the updated SCS.
- SB 375 streamlines CEQA requirements for specific residential and mixed-use developments that are consistent with the Fresno County SCS or APS (as determined by ARB) to achieve regional GHG emissions reduction target.

The 2018 RTP/SCS was adopted by Fresno COG on July 26, 2018 and reflects the latest regional VMT targets for Fresno COG of 5 percent by 2020, 10 percent by 2035 and 12 percent by 2042 (Fresno COG 2018).

## 3.3.5 - Local

The County of Fresno does not currently have formal GHG emissions reduction plans or recommended emissions thresholds for determining significance associated with GHG emissions from development projects.

### General Plan

The Fresno County General Plan has no goals or policies that directly address GHG emissions or climate change. However, policies aimed at reducing vehicle miles traveled listed in the Air Quality Section would also reduce climate change impacts.

### Waste Diversion

With the passage of SB 1016, the Per Capita Disposal Measurement System, only per capita disposal rates are measured. Targets are based on the per capita disposal rates. For 2019, the target rate was 5.0 pounds per person and 14.2 pounds per employee. The County's disposal rates were well below the target rate at 4.8 pounds per person and 12 pounds per employee per day in 2019 (CalRecycle 2020).

# SECTION 4: MODELING PARAMETERS AND ASSUMPTIONS

## 4.1—Model Selection and Guidance

Air pollutant emissions can be estimated by using emission factors and a level of activity. Emission factors are the emission rate of a pollutant given the activity over time; for example, grams of $NO_X$ per horsepower-hour. The ARB has published emission factors for on-road mobile vehicles/trucks in the EMFAC mobile source emissions model and emission factors for off-road equipment and vehicles in the OFFROAD emissions model. An air emissions model (or calculator) combines the emission factors and the various levels of activity and outputs the emissions for the various pieces of equipment.

The California Emissions Estimator Model (CalEEMod) version 2016.3.2 was developed by the South Coast Air Quality Management District in cooperation with other air districts throughout the State. CalEEMod is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with construction and operation from a variety of land uses.

The modeling follows District guidance where applicable from its GAMAQI. The models used in this analysis are summarized as follows:

- Construction emissions: CalEEMod, version 2016.3.2
- Operational emissions: CalEEMod, version 2016.3.2
- SJVAPCD Health Risk Prioritization Tool
- EMFAC 2017

## 4.2—Air Pollutants and GHGs Assessed

### 4.2.1 - Criteria Pollutants Assessed

The following air pollutants are assessed in this analysis:

- Reactive organic gases (ROG)
- Nitrogen oxides ($NO_X$)
- Carbon monoxide (CO)
- Sulfur dioxide ($SO_2$)
- Particulate matter less than 10 microns in diameter ($PM_{10}$)
- Particulate matter less than 2.5 microns in diameter ($PM_{2.5}$)

Note that the project would emit ozone precursors ROG and $NO_X$. However, the project would not directly emit ozone, since it is formed in the atmosphere during the photochemical reaction of ozone precursors.

As noted previously, the project would emit ultrafine particles. However, there is currently no standard separate from the $PM_{2.5}$ standards for ultrafine particles and there is no accepted methodology to quantify or assess the significance of such particles.

### 4.2.2 - Greenhouse Gases Assessed

This analysis is restricted to GHGs identified by AB 32, which include: $CO_2$, methane, $N_2O$, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The project would generate a variety of GHGs, including several defined by AB 32 such as $CO_2$, methane, and $NO_X$.

The project may emit GHGs that are not defined by AB 32. For example, the project may generate aerosols through emissions of DPM from the vehicles and trucks that would access the project site. Aerosols are short-lived particles, as they remain in the atmosphere for about one week. Black carbon is a component of aerosol. Studies have indicated that black carbon has a high global warming potential; however, the Intergovernmental Panel on Climate Change states that it has a low level of scientific certainty (IPCC 2007a).

Water vapor could be emitted from evaporated water used for landscaping, but this is not a significant impact because water vapor concentrations in the upper atmosphere are primarily due to climate feedbacks rather than emissions from project-related activities.

The project would emit $NO_X$ and VOC, which are ozone precursors. Ozone is a GHG; however, unlike the other GHGs, ozone in the troposphere is relatively short-lived and can be reduced in the troposphere on a daily basis. Stratospheric ozone can be reduced through reactions with other pollutants.

Certain GHGs defined by AB 32 would not be emitted by the project. Perfluorocarbons and sulfur hexafluoride are typically used in industrial applications, none of which would be used by the project. Therefore, it is not anticipated that the project would emit perfluorocarbons or sulfur hexafluoride.

## 4.3—Construction Modeling Assumptions

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from on-site and off-site activities. On-site emissions principally consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly $PM_{10}$) from disturbed soil. Additionally, paving operations and application of architectural coatings would release VOC emissions. Off-site emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust ($PM_{10}$ and $PM_{2.5}$).

The project was assumed to begin construction in January 2021 with buildout completed in August 2021. CalEEMod includes default equipment lists and construction schedules for industrial projects, but not specifically for nut processing facilities. The facility includes large areas devoted to storage silos, water tanks, and nut dryers that are not occupied structures. The silos and tanks can be assembled rapidly, unlike industrial or commercial building construction, which requires more equipment and many more workers to build structures of similar size.

The analysis primarily used default construction equipment assumptions, but it added equipment used for silo assembly identified by the applicant. The detailed modeling assumptions can be reviewed in Appendix A of this report.

### 4.3.1 - Construction Equipment Emission Factors

CalEEMod contains an inventory of construction equipment that incorporates estimates of the number of equipment, age, horsepower (hp), and equipment tier from which rates of emissions are developed. The CalEEMod default equipment assumptions were used in this analysis for the estimation of emissions from on-site construction equipment used in paving, building construction, and architectural coatings. The equipment types used for site preparation and grading are CalEEMod defaults, but the number of equipment was adjusted as described below. CalEEMod's off-road emission factors and load factors are from the ARB OFFROAD model.

### 4.3.2 - Grading

During grading activities, fugitive dust can be generated from the movement of dirt on the project site. CalEEMod estimates dust from dozers moving dirt around, dust from graders or scrapers leveling the land, and loading or unloading dirt into haul trucks. Each activity is calculated differently in CalEEMod, based on the number of acres traversed by the grading equipment.

Only some pieces of equipment generate fugitive dust in CalEEMod. The CalEEMod manual identifies various equipment and the acreage disturbed in an 8-hour day:

- Crawler tractors, graders, and rubber-tired dozers: 0.5 acre per 8-hour day
- Scrapers: 1 acre per 8-hour day

Because of the flat terrain and previous use of the site for agriculture, the project site requires limited site preparation and grading. The site preparation and grading are assumed to take 40 workdays to complete. The number of days was reduced from the default; however, the number of pieces of equipment was increased to ensure that the area to be graded could be completed within the schedule. Some site grading has already occurred at the project site; however, this analysis assumes the full site requires grading as a conservative assumption.

It was assumed that soil would be balanced on-site, and, therefore, there would be no material imported or exported from the project site for site leveling.

### 4.3.3 - Building Construction, and Paving

The analysis uses project specific modeling assumptions in CalEEMod for construction equipment during building construction, and paving. As previously discussed, the equipment hours for the building construction phases were adjusted to reflect the developer's schedule and equipment. Three aerial lifts were added for use in constructing storage silos and install equipment. Other equipment is based on CalEEMod default assumptions adjusted to reflect a shorter construction schedule.

### 4.3.4 - Construction Off-site Trips

Worker trips are accounted for during the construction phases. The default trips are based on 1.25 trips per piece of equipment; however, the numbers of employee trips were overstated using this method, due to the size of the site and type of work being accomplished. The numbers of trips were decreased to a more realistic amount. The CalEEMod default worker trip length of 16.8 miles was retained. The CalEEMod default vehicle fleet (LD Mix) was used for employee trips.

Vendor trips for the building construction phase are calculated from a study performed by the Sacramento Metropolitan Air Quality Management District based on land use and size. The CalEEMod defaults for vendor trip length, and vehicle fleet (Heavy Duty Truck Vehicle Fleet Mix) were used. The number of vendor truck trips was increased by 50 trips per day and haul trips were increased by 778 trips to account for truck trips for hauling cement and road base materials for building foundations, staging areas, and internal roads.

## 4.4—Operation

Operational emissions are those emissions that occur when the project is occupied by the proposed pistachio processing plant. The major sources of emissions are summarized below.

### 4.4.1 - Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles and trucks that would travel to and from the project site. The project operational statement includes detailed trip generation rates for employees and trucks that were used in the analysis. The number of trips varies by season, with peak rates occurring during the harvest season. The numbers of employee trips are estimated at 208 trips per day during the peak harvest season with average annual daily trips at 92 trips per day. Truck trips in are expected to total 24 per day in the off season and 342 per day in the peak harvest season. The truck trips include trucks used for harvest, shipping outgoing product, supply deliveries, solid waste hauling, and recycled waste. A complete breakdown of truck trips and employee trips by season is provided in Appendix A.

The vehicle fleet mix is defined as the mix of motor vehicle classes active during the operation of the project. Emission factors are assigned to the expected vehicle mix as a function of vehicle class, speed, and fuel use (gasoline and diesel-powered vehicles). The CalEEMod default vehicle fleet mix was adjusted to include only light-duty and medium-duty cars and trucks for employee trips. Trips by haul trucks were assumed to be heavy-duty trucks. Deliveries to the site from package delivery services were assumed to be made by light heavy-duty trucks. For detailed modeling assumptions see Appendix A.

During the first year of operation, pending connection to the PG&E natural gas pipeline, LNG will be transported to the project site by diesel-powered trucks for use during pistachio processing. LNG is required for the six-week harvest season. The LNG hauling is expected to require a total of 84 trips from the LNG provider in Boron, California to the project site.

### 4.4.2 - Architectural Coatings (Painting)

Paints release VOC emissions during application and drying. The buildings in the project would be repainted on occasion. The project is required to comply with the SJVAPCD Rule 4601—Architectural Coatings. The rule required flat paints to meet a standard of 50 grams per liter (g/l) and gloss paints 100 g/l by 2012 for an average rate of 65 g/l. Most of the coatings used for industrial building painting are flat paints or are prefinished.

### 4.4.3 - Consumer Products

Consumer products are various solvents used in non-industrial applications, which emit VOCs during their product use. “Consumer Product” means a chemically formulated product used by household and institutional consumers, including but not limited to detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. It does not include other paint products, furniture coatings, or architectural coatings (ARB 2015f). The default emission factor developed for CalEEMod was used.

### 4.4.4 - Landscape Equipment

CalEEMod estimated the landscaping equipment using the default assumptions in the model.

### 4.4.5 - Electricity

Electricity used by the project (for lighting, ventilation fans, etc.) would result in emissions from the on-site generators that would be used to produce the power. Electricity usage is based on estimates provided by the project energy consultant based on actual consumption from a similar facility.

#### Electricity Emission Factors

The default CalEEMod emission factors for Pacific Gas & Electric (from the CEC’s year 2006 data) are as follows:

- Carbon dioxide: 641.35 pounds per megawatt hour (lbs/MWh)
- Methane: 0.029 lb/MWh
- Nitrous oxide: 0.006 lb/MWh

It is assumed that the Renewable Electricity Standards would have taken effect by 2020. The Renewable Electricity Standard requires that electricity providers include a minimum of 33 percent renewable energy in their portfolios by the year 2020. Pacific Gas & Electric provides estimates of its emission factor per megawatt hour of electricity delivered to its customers. The Pacific Gas and Electric Company (PG&E) emissions factor for 2020 for $CO_2$ is provided below. No projections have been made by PG&E for later years, so the rate is assumed to remain constant through 2030. The rates for methane and nitrous oxide are based on compliance with the Renewable Portfolio Standard.

- Carbon dioxide: 290 lbs/MWh
- Methane: 0.022 lb/MWh
- Nitrous oxide: 0.005 lb/MWh

### 4.4.6 - Stationary Equipment

The project will require SJVAPCD permits for stationary emission sources. The project includes 13 natural gas column dryers that are rated at 27 thousand British thermal units (MBtu) per hour; thus, the project is expected to use 290.79 million cubic feet (CF) of natural gas per year for this purpose. The dryers are used to dry the pistachios during processing. The project also includes a natural gas warmer and a roaster to further process the pistachios for packaging. The warmer will have a capacity of 1.2 million Btu per hour, and the roaster will have a capacity of 4.3 million Btu per hour. The warmer and roaster would consume approximately 26.20 million CF of natural gas per year. The project will include a 175 hp emergency diesel generator. The generator was assumed to operate up to 100 hours per year for maintenance and testing. The equipment will meet SJVAPCD emission limits for regulated pollutants pursuant to Rule 2201. The equipment will also meet SJVAPCD BPS for GHG emissions.

### 4.4.7 - Offroad Equipment

The project will use the following off-road equipment:

- Propane forklifts: four during harvest and one during the remainder of the year. Emission factors for propane are from EPA AP-42, section 1.5.
- Diesel tractor: one tractor will we used onsite during the year. The emissions are estimated using emission factors from CalEEMod.
- Yard trucks: eight during the harvest season and one during the remainder of the year. The yard trucks were modeled with EMFAC 2017 as T7 Tractors with speed of 5 to 15 miles per hour.
- Golf carts: One zero emission electric golf cart will be used.
- Electric forklifts: All forklifts used inside the processing building will be zero emission electric models.

### 4.4.8 - Water and Wastewater

The project will use surface water from the San Luis Canal for process water. The project will construct and operate on-site water treatment facilities to produce water that meets domestic use standards for periodic process equipment, bin, and silo washing and employee consumption. GHG emissions are emitted from the use of electricity to pump water to the project. The project will use septic systems for domestic wastewater and storage basins for process water that do not use electricity. Total water use is estimated at 68.1 million gallons per year.

### 4.4.9 - Solid Waste

The project would emit GHGs from the decomposition of solid waste generated by the project. CalEEMod was used to estimate the GHG emissions from this source based on an increase the number of employees and CalRecycle average waste generation per employee. The CalEEMod default for the mix of landfill types is as follows:

- Landfill no gas capture: 6%
- Landfill capture gas flare: 94%
- Landfill capture gas energy recovery: 0%

Organic solids will be produced from project operations, primarily during the harvest period. These materials include pretreatment twigs, stems and other solids extracted prior to hulling, dewatered hull material, and pistachio shell blanks. Organic materials will also be generated by periodic cleaning of the process water settlement and cleaning ponds. The project will market solids generated by the facility for beneficial reuse as soil amendments, cement filler (e.g., pistachio blanks), livestock feed, or mulch. The project will be served by Mid Valley Disposal, a private disposal service to collect and convey recycled and other waste generated from daily operations. The mobile source analysis includes truck trips for hauling the process waste and for recycling purposes.

### 4.4.10 - Vegetation

There is currently no carbon sequestration occurring on-site. The project includes screening vegetation around the perimeter of the site; however, no emission reductions due to carbon sequestration were included.

### 4.4.11 - Refrigerants

The project processing buildings are cooled using evaporative coolers that do not use refrigerants. The project includes a 15,000-square-foot cold storage building that uses chlorofluorocarbon refrigerants such as Freon to cool the building. Systems with coolant charge exceeding 50 pounds of refrigerant are subject to the ARB Refrigeration Management Program.

# SECTION 5: AIR QUALITY IMPACT ANALYSIS

This section presents the expected emissions from construction and operation of the project as a necessary requisite for assessing the regulatory significance of project emissions on a regional and localized level.

## 5.1—CEQA Guidelines

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on air quality, the type, level, and impact of emissions generated by the project must be evaluated.

The following air quality significance thresholds are contained in Appendix G of the CEQA Guidelines effective December 28, 2018. A significant impact would occur if the project would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard;

c) Expose sensitive receptors to substantial pollutant concentrations; or

d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people.

While the final determination of whether a project is significant is within the purview of the lead agency pursuant to Section 15064(b) of the CEQA Guidelines, the District recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If the lead agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts. The applicable District thresholds and methodologies are contained under each impact statement below.

## 5.2—Impact Analysis

### 5.2.1 - Consistency with Air Quality Plan

**Impact AIR-1: The project would not conflict with or obstruct implementation of the applicable air quality plan.**

#### Impact Analysis

The CEQA Guidelines indicate that a significant impact would occur if the project would conflict with or obstruct implementation of the applicable air quality plan. The GAMAQI indicates that projects that do not exceed SJVAPCD regional criteria pollutant emissions quantitative thresholds would not conflict with or obstruct the applicable air quality plan (AQP). An additional criterion regarding the project's implementation of control measures was assessed to provide further evidence of the

project's consistency with current AQPs. This document proposes the following criteria for determining project consistency with the current AQPs:

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs? This measure is determined by comparison to the regional and localized thresholds identified by the District for Regional and Local Air Pollutants.
2. Will the project comply with applicable control measures in the AQPs?

The use of the criteria listed above is a standard approach for CEQA analysis of projects in the District's jurisdiction, as well as within other air districts, for the following reasons:

- Significant contribution to existing or new exceedances of the air quality standards would be inconsistent with the goal of attaining the air quality standards.
- AQP emissions inventories and attainment modeling are based on growth assumptions for the area within the air district's jurisdiction.
- AQPs rely on a set of air district-initiated control measures as well as implementation of federal and state measures to reduce emissions within their jurisdictions, with the goal of attaining the air quality standards.

AQPs are plans for reaching attainment of air quality standards. The growth assumptions, emission inventory, and control measures to reduce emissions are analyzed to determine if the Air Basin can reach attainment for the ambient air quality standards by the schedule required by the federal Clean Air Act. In order to show attainment of the standards, the District analyzes the growth projections in the valley, contributing factors in air pollutant emissions and formations, and existing and adopted emissions controls. The District then formulates a control strategy to reach attainment that includes both State and District regulations and other local programs and measures. For projects that include large stationary sources of emissions, the District relies on project compliance with Rule 2201—New and Modified Stationary Source Review to ensure that growth in stationary source emissions would not interfere with the applicable AQP. Projects exceeding the offset thresholds included in the rule are required to purchase offsets in the form of Emission Reduction Credits (ERCs).

The project uses trucks to haul incoming harvested pistachios and outgoing finished products. The applicant currently farms pistachios and utilizes an existing processing plant in Lost Hills to process the nuts. Once the project is operational, haul trucks during harvest will travel a shorter distance than under existing conditions and outgoing shipments of finished products will travel to similar destinations as currently takes place. The overall acres of pistachios in the region may or may not increase in the future, so the project may process some pistachios not currently processed at an existing processing plant. Therefore, although a large portion of the emissions generated by the project currently occurs at an existing facility, this analysis conservatively assumes that the emissions are new.

### *Contribution to Air Quality Violations*

A measure for determining if the project is consistent with the air quality plans is if the project would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plans. Regional air quality impacts and attainment of standards are the result of the cumulative impacts of all emission sources within the air basin. Individual projects are generally not large enough to contribute measurably to an existing violation of air quality standards. Therefore, the cumulative impact of the project is based on its cumulative contribution. Because of the region's nonattainment status for ozone, $PM_{2.5}$, and $PM_{10}$—if project-generated emissions of either of the ozone precursor pollutants (ROG and $NO_X$), $PM_{10}$, or $PM_{2.5}$ would exceed the District's significance thresholds—then the project would be considered to contribute to violations of the applicable standards and conflict with the attainment plans.

As discussed in Impact AIR-2 below, emissions of ROG, $NO_X$, $PM_{10}$, and $PM_{2.5}$ associated with the construction and operation of the project would not exceed the District's significance thresholds. As shown in Impact AIR-2, the project would not result in CO hotspots that would violate CO standards. Therefore, the project would not contribute to air quality violations.

### *Air Quality Plan Control Measures*

The AQP contains a number of control measures that are enforceable requirements through the adoption of rules and regulations. The following rules and regulations apply to the project:

**Rule 2201—New and Modified Stationary Source Review Rule.** The review of new and modified Stationary Sources of air pollution and to provide mechanisms including emission trade-offs by which Authorities to Construct such sources may be granted, without interfering with the attainment or maintenance of Ambient Air Quality Standards

**Rule 4201—Particulate Matter Concentration**. This rule shall apply to any source operation which emits or may emit dust, fumes, or total suspended particulate matter.

**Rule 4309—Dryers, Dehydrators, and Ovens**. The purpose of this rule is to limit emissions of oxides of nitrogen ($NO_X$) and carbon monoxide (CO) from dryers, dehydrators, and ovens. This rule applies to any dryer, dehydrator, or oven that is fired on gaseous fuel, liquid fuel, or is fired on gaseous and liquid fuel sequentially, and the total rated heat input for the unit is 5.0 million British thermal units per hour (5.0 MMBtu/hr) or greater.

**Rule 4601—Architectural Coatings.** The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling. Only compliant components are available for purchase in the San Joaquin Valley.

**Rule 4641—Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations.** The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641. This regulation is enforced on the asphalt provider.

**Rule 4702—Internal Combustion Engines.** The purpose of this rule is to limit the emissions of $NO_X$, carbon monoxide (CO), VOC, and sulfur oxides ($SO_X$) from internal combustion engines. If the project includes emergency generators, the equipment is required to comply with Rule 4702.

**Regulation VIII—Fugitive $PM_{10}$ Prohibitions.** This regulation is a control measure that is one main strategies from the 2006 $PM_{10}$ for reducing the $PM_{10}$ emissions that are part of fugitive dust. Projects over 10 acres are required to file a Dust Control Plan (DCP) containing dust control practices sufficient to comply with Regulation VIII. Rule 8021 regulates construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and trackout, etc. All development projects that involve soil disturbance are subject to at least one provision of the Regulation VIII series of rules.

The project would comply with all applicable ARB and SJVAPCD rules and regulations. Therefore, the project complies with this criterion and would not conflict with or obstruct implementation of the applicable air quality attainment plan.

***Conclusion***

The project's emissions would be less than significant for all criteria pollutants and would not result in inconsistency with the AQP for this criterion. The project is consistent with its land use designation and with the land use policies of the Fresno County General Plan. The project complies with all applicable rules and regulations from the applicable air quality plans; therefore, the project is not considered inconsistent with the AQP, and the impact would be less than significant.

### Level of Significance Before Mitigation

Less than significant impact.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance After Mitigation

Less than significant impact.

## 5.2.2 - Cumulative Criteria Pollutant Impacts

**Impact AIR-2:** **The project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors).**

### Impact Analysis

To result in a less than significant impact, the following criteria must be true:

1. Regional analysis: emissions of nonattainment pollutants must be below the District's regional significance thresholds. This is an approach recommended by the District in its GAMAQI.

2. Summary of projections: the project must be consistent with current air quality attainment plans including control measures and regulations. This is an approach consistent with Section 15130(b) of the CEQA Guidelines.

3. Cumulative health impacts: the project must result in less than significant cumulative health effects from the nonattainment pollutants. This approach correlates the significance of the regional analysis with health effects, consistent with the court decision, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219-20.

***Regional Emissions***

Air pollutant emissions have both regional and localized effects. This analysis assesses the regional effects of the project's criteria pollutant emissions in comparison to SJVAPCD thresholds of significance for short-term construction activities and long-term operation of the project. Localized emissions from project construction and operation are addressed under Impact AIR-3 using concentration-based SJVAPCD pound-per-day thresholds that determine if the project would result in a localized exceedance of any ambient air quality standards or would make a cumulatively considerable contribution to an existing exceedance at the nearest sensitive receptor location. The SJVAPCD AQP includes a summary of projections of all growth anticipated in the San Joaquin Valley Air Basin and controls required to meet air quality standards. This criterion is met through the AQP consistency analysis included under Impact AIR-1.

The primary pollutants of concern during project construction and operation are ROG, $NO_X$, $PM_{10}$, and $PM_{2.5}$. The SJVAPCD GAMAQI adopted in 2015 contains thresholds for CO, $NO_X$, ROG, $SO_X$, $PM_{10}$, and $PM_{2.5}$.

Ozone is a secondary pollutant that can be formed miles from the source of emissions, through reactions of ROG and $NO_X$ emissions in the presence of sunlight. Therefore, ROG and $NO_X$ are termed ozone precursors. The Air Basin often exceeds the state and national ozone standards. Therefore, if the project emits a substantial quantity of ozone precursors, the project may contribute to an exceedance of the ozone standard. The Air Basin also exceeds air quality standards for $PM_{10}$, and $PM_{2.5}$; therefore, substantial project emissions may contribute to an exceedance for these pollutants. The District's annual emission significance thresholds used for the project define the substantial contribution for both operational and construction emissions as follows:

- 100 tons per year CO
- 10 tons per year $NO_X$
- 10 tons per year ROG
- 27 tons per year $SO_X$
- 15 tons per year $PM_{10}$
- 15 tons per year $PM_{2.5}$

The project does not contain sources that would produce substantial quantities of $SO_2$ emissions during construction and operation. Modeling conducted for the project show that $SO_2$ emissions are well below the SJVAPCD GAMAQI thresholds, as shown in the modeling results contained in Appendix A. No further analysis of $SO_2$ is required.

*Construction Emissions*

Construction emissions associated with the project are shown in Table 7. The emissions from construction activities were compared with the significance threshold. For assumptions in estimating the emissions, please refer to Section 4, Modeling Parameters and Assumptions. As shown in Table

7, the emissions are below the significance thresholds. Therefore, the emissions would be less than significant on a project basis. Although the project does not exceed the threshold, a mitigation measure has been added to ensure that the project complies with SJVAPCD Regulation VIII Fugitive PM10 Prohibitions provisions that apply to the project including, but not limited to, preparing a Dust Control Plan (DCP).

**Table 7: Construction Air Pollutant Emissions (Annual)**

| Year | Emissions (tons per year) | | | | |
|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| 2021 | 1.00 | 2.77 | 2.43 | 0.96 | 0.29 |
| Highest Year of Project Construction Emissions | **1.00** | **2.77** | **2.43** | **0.96** | **0.29** |
| Significance threshold (tons/year) | 10 | 10 | 100 | 15 | 15 |
| Exceed threshold—significant impact? | No | No | No | No | No |

Notes:
$PM_{10}$ and $PM_{2.5}$ emissions are from the mitigated output to reflect compliance with Regulation VIII—Fugitive $PM_{10}$ Prohibitions.
ROG = reactive organic gases $NO_X$ = nitrogen oxides $PM_{10}$ and $PM_{2.5}$ = particulate matter
Calculations use unrounded numbers.
Source: CalEEMod output (Appendix A).

*Operational Emissions (Non-Permitted)*

Operational emissions occur over the lifetime of the project and are primarily from onroad and off-road mobile sources. The largest source is truck emissions. The project is expected to be completed in 2021 and would commence operations during the 2021 harvest season. The SJVAPCD considers permitted and non-permitted emission sources separately when making significance determinations. In addition, the annual operational emissions are also considered separately from construction emissions.

For assumptions in estimating the emissions, please refer to Section 4, Modeling Parameters and Assumptions and Appendix A. The emissions modeling results for project operation are summarized in Table 8. Modeling results are provided in Appendix A. As shown in Table 8, the operational emissions do not exceed the SJVAPCD significance thresholds for any criteria pollutant and, therefore, would result in a less than significant impact.

**Table 8: Operational Air Pollutant Emissions (2021)**

| Source | Emissions (tons per year) | | | | |
|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Area | 1.30 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy (Natural Gas) | 0.02 | 0.18 | 0.15 | 0.01 | 0.01 |
| Mobile (employee and visitor) | 0.04 | 0.12 | 1.15 | 0.47 | 0.13 |
| Mobile (Maintenance/Delivery Trucks) | 0.01 | 0.15 | 0.10 | 0.03 | 0.01 |
| Mobile (Truck) | 0.11 | 3.58 | 0.54 | 0.29 | 0.09 |

## Table 8 (cont.): Operational Air Pollutant Emissions (2021)

| Source | Emissions (tons per year) | | | | |
|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Mobile (LNG Haul Trucks—First Year Only) | 0.01 | 0.06 | 0.01 | 0.01 | 0.00 |
| Mobile (Propane Forklifts, Tractors, and Yard Trucks) | 0.06 | 0.28 | 3.27 | 0.04 | 0.01 |
| **Total** | **1.56** | **4.50** | **5.24** | **0.86** | **0.26** |
| Significance threshold | 10 | 10 | 100 | 15 | 15 |
| Exceed threshold—significant impact? | No | No | No | No | No |

Notes:
ROG = reactive organic gases $NO_X$ = nitrogen oxides $PM_{10}$ and $PM_{2.5}$ = particulate matter
Area source emissions include emissions from natural gas, and landscape.
Source: CalEEMod output (Appendix A).

*Operational Permitted Emissions*

The SJVAPCD GAMAQI recommends assessing the emissions from permitted sources of emissions separate from non-permitted sources. The District's permitting process ensures that emissions of criteria pollutants from permitted equipment and activities at stationary sources are reduced or mitigated to below the District's thresholds of significance. District implementation of New Source Review (NSR) ensures that there is no net increase in emissions above specified thresholds from new and modified Stationary Sources for all nonattainment pollutants and their precursors. Permitted sources emitting more than the NSR Offset Thresholds for any criteria pollutant must, in general, offset all emission increases in excess of the thresholds.

The project will include stationary sources that require SJVAPCD permits. The project includes 13 natural gas column dryers used to dry the pistachios. Nut warming and roasting equipment will be installed in the processing building to prepare finished products for sale. Based on the analysis prepared for the equipment, the emissions exceed the Rule 2201 NSR offset thresholds for NOx and will be required to provide offsets to reduce emissions below the threshold or implement additional emission controls to reduce emissions. The SJVAPCD will prepare an engineering evaluation of all permitted equipment to determine the controls required to achieve BACT requirements. The permitted emissions and the quantity of offsets required are dependent on the control technology selected and any process limits included in the permit conditions.

The project will also include processes that generate fugitive dust during the handling of the pistachios. Fugitive dust will be controlled by venting dusty processes to bag houses and fabric filters. Sufficient detail regarding the process were not available to estimate the amount of fugitive dust emissions, but the project will be required to comply with BACT requirements.

Operational permitted emissions at full operation are presented in Table 9. The project stationary sources would exceed SJVAPCD thresholds of significance for $NO_X$; therefore, the project's estimated permitted emissions would be potentially significant prior to compliance with SJVAPCD NSR offset requirements.

**Table 9: Operational Permitted Air Pollutant Emissions (2021)**

| Source | Emissions (tons per year) | | | | |
|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Natural Gas Fueled Column Dryers | 0.55 | 12.10 | 3.05 | 0.41 | 0.41 |
| Natural Gas Warmer and Roaster | 0.05 | 1.09 | 0.28 | 0.04 | 0.04 |
| Diesel Emergency Generator (170 hp) | 0.002 | 0.037 | 0.010 | 0.0003 | 0.0003 |
| **Total** | **0.60** | **13.22** | **3.34** | **0.44** | **0.44** |
| Significance threshold | 10 | 10 | 100 | 15 | 15 |
| Exceed threshold—potentially significant impact? | No | Yes | No | No | No |
| NSR offsets required | — | **3.22** | — | — | — |
| Significant after applying offsets? | No | No | — | — | — |

Notes:
ROG = reactive organic gases $NO_X$ = nitrogen oxides $PM_{10}$ and $PM_{2.5}$ = particulate matter
Source: CalEEMod output (Appendix A).

Compliance with Rule 2201 permitting and offset provisions is required; therefore, project stationary source emissions would be reduced to less than significant levels; however, a mitigation measure has been included to help ensure rule compliance. The final amount of offsets required will be determined during the Rule 2201 permitting process by the SJVAPCD.

### *Project Health Impacts*

In the 5th District Court of Appeal case *Sierra Club v. County of Fresno (Friant Ranch, L.P.)*, the Court found the project EIR deficient because it did not identify specific health related effects resulting from the estimated amount of pollutants generated by the project. The ruling stated that the EIR should give a "sense of the nature and magnitude of the 'health and safety problems' caused by a project's air pollution. The EIR should translate the emission numbers into adverse impacts or to understand why such translation is not possible at this time (and what limited translation is, in fact, possible)."

The standard measure of the severity of impact is the concentration of pollutant in the atmosphere compared to the ambient air quality standard for the pollutant for a specified period of time. The severity of the impact increases with the concentration and the amount of time that people are exposed to the pollutant. The change in health impacts with concentration is described in Table 3 and Table 4. The pollutants of concern in the Friant Ranch ruling were regional criteria pollutants ozone, and $PM_{10}$. It is important to note that the potential for localized impacts can be addressed through dispersion modeling. The SJVAPCD includes screening criteria that if exceeded would require dispersion modeling to determine if project emissions would result in a significant health impact. For this project, no significant localized health impacts would occur. Regional pollutants require more complex modeling as described below.

Ozone concentrations are estimated using regional photochemical models because ozone formation is subject to temperature, inversion strength, sunlight, emissions transport over long distances, dispersion, and the regional nature of the precursor emissions. The emissions from individual projects are too small to produce a measurable change in ozone concentrations—it is the cumulative contribution of emissions from existing and new development that is accounted for in the photochemical model. Ozone concentrations vary widely throughout the day and year even with the same amount of daily emissions. The SJVAPCD indicated in an Amicus Brief on Friant Ranch that running the photochemical model with just Friant Ranch emissions (109.5 tons/year $NO_X$) is not likely to yield valid information given the relative scale involved. A copy of the SJVAPCD brief is included in Appendix B. The $NO_X$ inventory for the San Joaquin Valley is 224 tons per day in 2019 or 81,760 tons per year. Friant Ranch would result in 0.13 percent increase in $NO_X$ emissions. A project emitting at the SJVAPCD CEQA threshold of 10 tons per year would result in a 0.01 percent increase in $NO_X$ emissions. Most project emissions are generated by motor vehicle travel distributed on regional roadways miles from the project site, and these emissions are not conducive to project-level modeling.

Emissions throughout the San Joaquin Valley are projected to markedly decline in the coming decade. The SJVAPCD 2016 Ozone Plan predicts $NO_X$ emissions will decline to 103 tons per day by 2029 or 54 percent from 2019 levels through implementation of control measures included in the plan. This means that ozone health impacts to residents of the San Joaquin Valley will be lower than currently experienced and most areas of the San Joaquin Valley will have attained ozone air quality standards. The plan accounts for growth in population at rates projected by the State of California for the San Joaquin Valley, so only cumulative projects that would exceed regional growth projections would potentially delay attainment and prolong the time and the number of people would experience health impacts. It is unlikely that anyone would experience greater impacts from regional emissions than currently occur. The federal transportation conformity regulation provides a means of ensuring growth in emissions does not exceed emission budgets for each County. Regional Transportation Plans and Regional Transportation Improvement Plans must provide a conformity analysis based on the latest planning assumptions that demonstrates that budgets will be not be exceeded. If budgets are exceeded, the San Joaquin Valley may be subject to Clean Air Act sanctions until the deficiency is addressed.

Particulate emission impacts can be localized and regional. Particulates can be directly emitted and can be formed in the atmosphere with chemical reactions. Small directly emitted particles such as diesel emissions and other combustion emissions can remain in the atmosphere for a long time and can be transported over long distances. Large particles such as fugitive dust tend to be deposited a short distance from where emitted but can also travel long distances during periods of high winds. Particulates can be washed out of the atmosphere by rain and deposited on surfaces. Secondary particulates formed in the atmosphere such as ammonium nitrate require $NO_X$ and ammonia, and they require low inversion levels and certain ranges of temperature and humidity to result in substantial concentrations. These complications make modeling project particulate emissions to determine concentration feasible only for directly emitted particles at receptor locations close to the project site. Regional particulate concentrations are modeled using a gridded inventory (emissions in tons/day are placed a 4-kilometer, three-dimensional grid to spatially allocate the emissions geographically and vertically in the atmosphere) and an atmospheric chemistry component to

simulate the chemical reactions. The model uses relative reduction factors to determine the amount of reductions of each PM component will be needed to attain the air quality standards on the days with the conditions most favorable to high particulate concentrations. Projects with emissions below the SJVAPCD thresholds of significance would not produce sufficient emissions to determine a project's individual contribution to the particulate concentration.

### *Cumulative Health Impacts*

The Air Basin is in nonattainment for ozone, $PM_{10}$ (State only), and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as children, the elderly, and the infirm). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects that were described in Table 1. However, the health effects are a factor of the dose-response curve. Concentration of the pollutant in the air (dose), the length of time exposed, and the response of the individual are factors involved in the severity and nature of health impacts. If a significant health impact results from project emissions, it does not mean that 100 percent of the population would experience health effects.

Since the Basin is nonattainment for ozone, $PM_{10}$, and $PM_{2.5}$, it is considered to have an existing significant cumulative health impact without the project. When this occurs, the analysis considers whether the project's contribution to the existing violation of air quality standards is cumulatively considerable. The SJVAPCD regional thresholds for $NO_X$, VOC, $PM_{10}$, or $PM_{2.5}$ are applied as cumulative contribution thresholds. Projects that exceed the regional thresholds would have a cumulatively considerable health impact. As shown in Table 7 and Table 8, the regional analysis of construction and operational emissions indicates that the project would not exceed the District's significance thresholds and the project is consistent with the applicable Air Quality Attainment Plan. Therefore, the project would not result in significant cumulative health impacts.

The SJVAPCD Air Quality Attainment Plans predict that nonattainment pollutant emissions will continue to decline each year as regulations adopted to reduce these emissions are implemented, accounting for growth projected for the region. Therefore, the cumulative health impact will also decline even with the project's emission contribution.

The project does not exceed SJVAPCD quantitative thresholds of significance for any pollutant: however, mitigation measures have been included to help ensure compliance with SJVAPCD regulations that reduce project emissions during construction and operation.

## Level of Significance Before Mitigation

Potentially significant impact.

## Mitigation Measures

**MM AIR-2a** Prior to commencing construction activities, the project shall prepare a Dust Control Plan as required by San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 8021 to control fugitive dust sufficiently to limit visible dust emissions to 20 percent opacity during construction, excavation, or earthmoving activities.

**MM AIR-2b** Prior to installing equipment requiring an SJVAPCD permit to operate, the applicant shall file an Authority to Construct application with the SJVAPCD that complies with the requirements of Rule 2201 New and Modified Stationary Source Review. Emissions of any criteria pollutant that exceed the SJVAPCD offset thresholds after the implementation of best available control technology (BACT) shall provide emission offsets in amounts required by the rule.

### Level of Significance After Mitigation

Less than significant impact.

## 5.2.3 - Sensitive Receptors

**Impact AIR-3: The project could expose sensitive receptors to substantial pollutant concentrations.**

### Impact Analysis

#### *Sensitive Receptors*

Those who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. The District considers a sensitive receptor a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools. The closest sensitive receptors are at residences located 1 mile west of the project site on W. Kamm Avenue.

#### *Localized Pollutant Analysis*

Emissions occurring at or near the project have the potential to create a localized impact, also referred to as an air pollutant hotspot. Localized emissions are considered significant if when combined with background emissions, they would result in exceedance of any health-based air quality standard. In locations that already exceed standards for these pollutants, significance is based on a significant impact level (SIL) that represents the amount that is considered a cumulatively considerable contribution to an existing violation of an air quality standard.

The SJVAPCD's GAMAQI includes screening thresholds for identifying projects that need detailed analysis for localized impacts. Projects with on-site emission increases from construction activities or operational activities that exceed the 100 pounds per day screening level of any criteria pollutant after implementation of all enforceable mitigation measures would require additional analysis to determine if the preparation of an ambient air quality analysis is needed. The criteria pollutants of concern for localized impact in the SJVAB are $PM_{10}$, $PM_{2.5}$, $NO_X$, and CO. There is no localized emission standard for ROG and most types of ROG are not toxic and have no health-based standard; however, ROG was included for informational purposes only.

An analysis of maximum daily emissions during construction and operation was conducted to determine if emissions would exceed 100 pounds per day for any pollutant of concern. The maximum daily construction emissions would occur in 2021. The maximum daily operational emissions would occur at project buildout, which was assumed to occur in 2021. Operational emissions include those generated on-site by area sources such as consumer products, and

landscape maintenance, energy use from natural gas combustion, and motor vehicles operation at the project site. Motor vehicle emissions are estimated for the entire trip as a conservative assumption. The results of the construction screening analysis are presented in Table 10.

### Table 10: Maximum Daily Air Pollutant Emissions during Construction (Unmitigated)

| Maximum Daily Emissions | Emissions (pounds per day) | | | | |
|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Maximum Daily Construction Emissions (2021) | 93.40 | 46.47 | 37.17 | 14.59 | 4.88 |
| Screening threshold | 100 | 100 | 100 | 100 | 100 |
| Exceed screening threshold? | NA | No | No | No | No |

Notes:
$NO_X$ = nitrogen oxides CO = carbon monoxide $PM_{10}$ and $PM_{2.5}$ = particulate matter N/A = Not applicable
Summer emissions were used except for $NO_X$, which are higher in winter. PM is from the mitigated run, which accounts for compliance with Regulation VIII dust control measures. There is no ambient air quality standard for ROG.
Source: CalEEMod output (Appendix A).

The project would not exceed the emission screening thresholds during project construction. Therefore, no dispersion modeling is required to ensure that localized construction impacts would be less than significant.

The maximum daily operational emissions are shown in Table 11. The largest source of daily emissions is diesel trucks accessing the site, yard trucks and tractors used to position the trailers once on-site.

### Table 11: Maximum Daily Air Pollutant Emissions during Operations (2021)

| Maximum Daily Emissions | Emissions (pounds per day) | | | | |
|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Area | 7.15 | 0.00 | 0.03 | 0.00 | 0.00 |
| Energy (natural gas) | 0.11 | 1.00 | 0.83 | 0.08 | 0.08 |
| Mobile (Emp. and Visitor) | 0.32 | 0.08 | 0.98 | 0.08 | 0.02 |
| Mobile (Maintenance and Delivery Trucks) | 0.01 | 0.02 | 0.03 | 0.00 | 0.00 |
| Mobile (Truck) | 0.65 | 35.53 | 2.39 | 0.17 | 0.06 |
| Mobile (LNG Trucks Year 1 Only) | 0.01 | 0.29 | 0.05 | 0.03 | 0.01 |
| Off-Road Forklifts and Yard Trucks | 6.70 | 41.06 | 77.45 | 3.14 | 3.14 |
| **Maximum Daily Operational Emissions** | **14.94** | **77.98** | **81.76** | **3.50** | **3.31** |
| Screening threshold | — | 100 | 100 | 100 | 100 |
| Exceed screening threshold? | N/A | No | No | No | No |

**Table 11 (cont.): Maximum Daily Air Pollutant Emissions during Operations (2021)**

| Maximum Daily Emissions | Emissions (pounds per day) | | | | |
|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |

Notes:
$NO_X$ = nitrogen oxides CO = carbon monoxide $PM_{10}$ and $PM_{2.5}$ = particulate matter N/A = Not applicable
Summer emissions were higher for ROG. Winter emissions were higher for $NO_X$, CO, $PM_{10}$, and $PM_{2.5}$. There is no ambient air quality standard for ROG.
Source: CalEEMod output (Appendix A).

The project would not exceed SJVAPCD screening thresholds for localized criteria pollutant impacts; therefore, the project's localized criteria pollutant impacts would be less than significant.

### *Carbon Monoxide Hot Spot Analysis*

Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. The SJVAPCD provides screening criteria to determine when to quantify local CO concentrations based on impacts to the level of service (LOS) of intersections in the project vicinity.

Construction of the project would result in minor increases in traffic for the surrounding road network during the duration of construction. Motor vehicles accessing the site when it becomes operational would result in a minor increase in daily trips that would not substantially reduce the LOS. The project is located in a rural location with very low traffic volumes. No congested conditions that would result in a CO hotspot are possible. In addition, the highest background 8-hour average of carbon monoxide during the latest year CO was monitored is 2.06 ppm, which is 78 percent lower than the state ambient air quality standard of 9.0 ppm. Therefore, the project would not significantly contribute to an exceedance of state or federal CO standards.

### *Construction: Toxic Air Contaminants*

Project construction would involve the use of diesel-fueled vehicles and equipment that emit DPM, which is considered a TAC. The SJVAPCD's latest threshold of significance for TAC emissions is an increase in cancer risk for the maximally exposed individual of 20 in a million (formerly 10 in a million). The SJVAPCD's 2015 GAMAQI does not currently recommend analysis of TAC emissions from project construction activities, but instead focuses on projects with operational emissions that would expose sensitive receptors over a typical lifetime of 70 years. In addition, most of the project's construction emissions would occur during site preparation and grading phases over a 40-day period. Building construction, silo assembly, and equipment installation require limited amounts of diesel equipment. The site is located 1,656 meters (5,433 feet) from the nearest sensitive receptor, a distance at which no significant impact from the construction activities is possible.

### *Operation: Toxic Air Contaminants*

The SJVAPCD recommends preparation of a screening analysis using its health risk prioritization tool to estimate the impacts of TAC emissions on sensitive receptors. The project will generate TAC emissions from truck travel and idling on the project site for incoming pistachios during the harvest season and delivery of finished products during the remainder of the year. The project will use LNG hauled to the project by trucks in the first year of operations only. Cancer risk is based on a 70-year

impact; therefore, the emissions from the LNG haul trucks for one year would not add significantly to the risk screening score. The project uses natural gas for its dryers. Natural gas has a relatively low level of toxicity. The nearest sensitive receptor is located 1,656 meters (5,433 feet) from the project site. At this distance, the TAC emissions have dispersed to the point that concentrations and health risk are low.

The results of the screening analysis presented in Table 12 show that the total risk score is well below the SJVAPCD threshold for requiring a health risk assessment using dispersion modeling. The screening tool provides results at incremental distances from the source of emissions to the receptor. The risk from each source was added together to determine the total risk for the entire project. The screening tool spreadsheets and the modeling assumptions used in the analysis are provided in Appendix A.

**Table 12: Prioritization Tool Health Risk Screening Results**

| Impact Source | Risk Screening Score | Chronic Risk Score | Acute Risk Score |
|---|---|---|---|
| Diesel Truck and Tractors | 0.1310 | 0.0004 | 0 |
| Emergency Diesel Generator (170 hp) | 0.0024 | 0.0003 | 0 |
| Natural Gas Column Dryers | 0.0015 | 0.0001 | 0.0001 |
| Natural Gas Warmer and Roaster | 0.0002 | 0.0000 | 0.0001 |
| **Total Risk from Project** | **0.1351** | **0.0009** | **0.0001** |
| Screening Risk Score Threshold | 10 | 1 | 1 |
| Significance Threshold (Cancer Risk) | 20 | 1 | 1 |
| Source: Appendix A: Modeling Results. | | | |

The project would not exceed the cancer risk, chronic risk, and acute risk screening threshold levels. The primary source of the emissions responsible for chronic risk are from diesel trucks. The primary source of acute risk is from natural gas combustion in the dryers and roaster. DPM does not have an acute risk factor. Since the project does not exceed SJVAPCD screening thresholds for cancer risk, acute risk, or chronic risk, this impact would be less than significant.

### *Valley Fever*

Valley fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, *Coccidioides immitis* (*C. immitis*). The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and they include dust storms, grading, and recreational off-road activities.

The San Joaquin Valley is considered an endemic area for Valley fever. By geographic region, hospitalizations for Valley fever in the San Joaquin Valley increased from 230 (6.9 per 100,000 population) in 2000 to 701 (17.7 per 100,000 population) in 2007. Within the region, Kern County reported the highest hospitalization rates, increasing from 121 (18.2 per 100,000 population) in 2000 to 285 (34.9 per 100,000 population) in 2007, and peaking in 2005 at 353 hospitalizations (45.8 per 100,000 population). The Centers for Disease Control and Prevention indicates that 752 of the 8,657

persons (8.7 percent) hospitalized in California between 2000 and 2007 for Valley fever died (CDC 2009). California experienced 7,466 new cases of Valley fever in 2017. A total of 275 Valley fever cases were reported in Fresno County in 2017 for a rate of 82.4 per 100,000 people (CDPH 2018).

The distribution of *C. immitis* within endemic areas is not uniform and growth sites are commonly small (a few tens of meters) and widely scattered. Known sites appear to have some ecological factors in common suggesting that certain physical, chemical, and biological conditions are more favorable for *C. immitis* growth. Avoidance, when possible, of sites favorable for the occurrence of *C. immitis* is a prudent risk management strategy. Listed below are ecologic factors and sites favorable for the occurrence of *C. immitis*:

1) Rodent burrows (often a favorable site for *C. immitis*, perhaps because temperatures are more moderate and humidity higher than on the ground surface)
2) Old (prehistoric) Indian campsites near fire pits
3) Areas with sparse vegetation and alkaline soils
4) Areas with high salinity soils
5) Areas adjacent to arroyos (where residual moisture may be available)
6) Packrat middens
7) Upper 30 centimeters of the soil horizon, especially in virgin undisturbed soils
8) Sandy, well-aerated soil with relatively high water-holding capacities

Sites within endemic areas less favorable for the occurrence of *C. immitis* include:

1) Cultivated fields
2) Heavily vegetated areas (e.g. grassy lawns)
3) Higher elevations (above 7,000 feet)
4) Areas where commercial fertilizers (e.g. ammonium sulfate) have been applied
5) Areas that are continually wet
6) Paved (asphalt or concrete) or oiled areas
7) Soils containing abundant microorganisms
8) Heavily urbanized areas where there is little undisturbed virgin soil (USGS 2000).

The project site is situated on previously disturbed farmland that does not provide suitable habitat for the spores. Therefore, implementation of the project would have a low probability of the site having *C. immitis* growth sites and exposure to the spores from disturbed soil.

Although conditions are not favorable, construction activities could generate fugitive dust that contain *C. immitis* spores. The project will minimize the generation of fugitive dust during construction activities by complying with the District's Regulation VIII. Therefore, this regulation,

combined with the relatively low probability of the presence of *C. immitis* spores would reduce Valley fever impacts to less than significant.

During operations, dust emissions are anticipated to be relatively small, because most of the project area would be occupied by buildings, gravel surfaces, and pavement. This condition would lessen the possibility of the project from providing habitat suitable for *C. immitis* spores and for generating fugitive dust that may contribute to Valley fever exposure. Impacts would be less than significant.

#### *Naturally Occurring Asbestos*

Review of the map of areas where naturally occurring asbestos in California are likely to occur (U.S. Geological Survey 2011) found no such areas in the project area. Therefore, development of the project is not anticipated to expose receptors to naturally occurring asbestos. Impacts would be less than significant.

### Level of Significance Before Mitigation

Less than significant impact.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance After Mitigation

Less than significant impact.

## 5.2.4 - Objectionable Odors

**Impact AIR-4: The project would not create objectionable odors affecting a substantial number of people.**

### Impact Analysis

#### *Thresholds of Significance*

Odor impacts on residential areas and other sensitive receptors, such as hospitals, day-care centers, schools, etc. warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, worksites, and commercial areas. The project is over 1 mile from the nearest residences and is situated in an agricultural area where similar odors are common.

Two situations create a potential for odor impact. The first occurs when a new odor source is located near an existing sensitive receptor. The second occurs when a new sensitive receptor locates near an existing source of odor. The project is of the first type, since it involves a new odor source.

Although the project is a food processing facility, pistachio plants are not likely to generate objectionable odors. The nearest sensitive receptors are over 1 mile from the project site and are beyond the 1-mile screening distance recommended for food processing facilities. The screening levels for these land use types are shown in Table 13.

**Table 13: Screening Levels for Potential Odor Sources**

| Odor Generator | Screening Distance |
|---|---|
| Wastewater Treatment Facilities | 2 miles |
| Sanitary Landfill | 1 mile |
| Transfer Station | 1 mile |
| Composting Facility | 1 mile |
| Petroleum Refinery | 2 miles |
| Asphalt Batch Plant | 1 mile |
| Chemical Manufacturing | 1 mile |
| Fiberglass Manufacturing | 1 mile |
| Painting/Coating Operations (e.g., auto body shop) | 1 mile |
| Food Processing Facility | 1 mile |
| Feed Lot/Dairy | 1 mile |
| Rendering Plant | 1 mile |
| Source: SJVAPCD 2015a. | |

***Project Analysis***

The project is not likely to produce objectionable odors during pistachio drying and processing. The project could generate odors from operation of diesel trucks and equipment on the project site; however, the site is over 1 mile from the nearest sensitive receptor. The project is within an agricultural area where the use of diesel equipment is common and accepted as part of the existing environment. The area surrounding the project site is sparsely populated. Therefore, the project would not expose substantial numbers of people to objectionable odors.

During construction, various diesel-powered vehicles and equipment in use on-site would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the project's site boundaries. The potential for diesel odor impacts would therefore be less than significant.

### Level of Significance Before Mitigation

Less than significant impact.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance After Mitigation

Less than significant impact.

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# SECTION 6: GREENHOUSE GAS IMPACT ANALYSIS

## 6.1—CEQA Guidelines

CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on GHGs, the type, level, and impact of emissions generated by the project must be evaluated.

The following GHG significance thresholds are contained in Appendix G of the CEQA Guidelines, which were amendments adopted into the Guidelines on March 18, 2010, pursuant to SB 9797 and further clarified in amendments approved on December 28, 2018. A significant impact would occur if the project would:

(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

(b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

## 6.2—Impact Analysis

### 6.2.1 - Greenhouse Gas Inventory

**Impact GHG-1: The project would generate direct and indirect greenhouse gas emissions; however, these emissions would not result in a significant impact on the environment.**

#### Impact Analysis

***Threshold of Significance***

Section 15064.4(b) of the CEQA Guidelines' amendments for GHG emissions states that a lead agency may take into account the following three considerations in assessing the significance of impacts from GHG emissions.

- **Consideration #1**: The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
- **Consideration #2**: Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- **Consideration #3**: The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

Fresno County has not adopted its own GHG thresholds or prepared a Climate Action Plan that can be used as a basis for determining project significance; however, the SJVAPCD has adopted its Policy—Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as a Lead Agency. The SJVAPCD will approve discretionary permits for the project and is considered a Responsible Agency under CEQA. Under the SJVAPCD policy, the District would require stationary source projects with increased GHG emissions to implement performance-based standards, or otherwise demonstrate that project specific GHG emissions have been reduced or mitigated by at least 29 percent, as compared to Business-as-Usual. The SJVAPCD has identified best performance standards for a number of sources that have been pre-determined to meet the standard. In addition, the SJVAPCD's *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* includes thresholds based on whether the project will reduce or mitigate GHG levels by 29 percent from BAU levels compared with 2005 levels (SJVAPCD 2009b). This level of GHG reduction is based on the target established by ARB's AB 32 Scoping Plan, approved in 2008.

The First Update to the Climate Change Scoping Plan adopted in May 2014 provided revised inventory projections to reflect slower growth in emissions during the recession and lower future year projections. The State's 2020 BAU inventory was reduced from 596 $MMTCO_2e$ to 545 $MMTCO_2e$ (ARB 2014b). The new GHG reduction level for the State to reach 1990 emission levels by 2020 is 21.7 percent from BAU in 2020. The First Update to the Climate Change Scoping Plan also confirmed that the State is on track to achieve the 2020 target and to maintain and continue reductions beyond 2020 as required by AB 32 (ARB 2014b). Therefore, the analysis uses a threshold based achieving a 21.7 percent reduction from BAU to demonstrate consistency with AB 32 and the approach recommended by the SJVAPCD. The analysis prepared for the project also includes a qualitative assessment of compliance with Scoping Plan measures to support GHG significance findings under Impact GHG-2. The SJVAPCD defines BAU as the total baseline emissions for all emissions sources within the development type, projected for the year 2020, assuming no change in GHG emissions per unit of activity as established for the baseline period.

The State adopted the 2017 Scoping Plan Update on December 14, 2017 that provides the State's strategy to achieve the SB 32 2030 target of a 40 percent reduction in emissions compared to 1990 levels. The plan includes existing and new measures that when implemented are expected to achieve the SB 32 2030 target. The 2017 Scoping Plan includes substantial reductions beyond 2020 through continued implementation of existing regulations. Other regulations will be adopted to implement recently enacted legislation including SB 350, which requires an increase in renewable energy from 33 percent to 50 percent and doubling the efficiency of existing buildings by 2030. The Legislature extended the Cap-and-Trade Program through 2030. Cap-and-Trade provides a mechanism to make up shortfalls in other strategies if they occur (ARB 2017c). In addition, the strategy relies on reductions achieved in implementing the ARB Short-Lived Climate Pollutant (SLCP) Reduction Strategy to reduce pollutants not previously controlled for climate change such as black carbon, methane, and hydrofluorocarbons (HFCs) (ARB 2017b).

The project will commence operations after the 2020 AB 32 target year; however, no new quantitative target based on a reduction from BAU has been developed for the 2030 SB 32 target year. The 2017 Scoping Plan provides ranges of reductions for each plan strategy but does not provide readily accessible reduction estimates and assumptions for each measure that are needed to determine reductions attributable to each region and project. To address this issue, the analysis shows the amount of continued progress after 2020 by comparing 2021 and 2030 emissions with

BAU emissions. A qualitative assessment of compliance with the 2008 and the 2017 Scoping Plan measures is provided under Impact GHG-2.

### Newhall Ranch

On November 30, 2015, the California Supreme Court issued its decision in *Newhall Ranch,* invalidating the GHG analysis for a large master planned residential development in Los Angeles County consisting of over 20,000 residential dwelling units and other uses. In particular, the Court upheld: (1) use of the statewide emissions reduction goal in AB 32 as a significance criterion (pp. 15–19), (2) use of the Scoping Plan's BAU model "as a comparative tool for evaluating efficiency and conservation efforts" of the Project (pp. 18–19), and (3) a comparison of the project's expected emissions to a BAU model rather than a baseline of pre-project conditions (pp. 15–19). The Court invalidated the GHG analysis on the grounds that the "administrative record discloses no substantial evidence that the Newhall Ranch's project-level reduction of 31 percent in comparison to [BAU] is consistent with achieving AB 32's statewide goal of a 29 percent reduction from [BAU]." The Court indicated that a lead agency may use a BAU comparison based on the Scoping Plan's methodology if it also substantiates the reduction a particular project must achieve to comply with statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location (p. 25.) A lead agency "might assess consistency with A.B. 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities."

The substantial evidence needed to support a project BAU threshold can be derived from data used to develop the Scoping Plan inventory and control strategy, and from analysis conducted by the ARB to track progress in achieving the AB 32 2020 target. The critical factor in determining the appropriate project threshold is whether the State requires additional reductions beyond those achieved by existing regulations in order to achieve its target. If no additional reductions are required from individual projects, no nexus exists to require a project to mitigate its emissions. In that case, the percentage reductions achieved by projects through compliance with regulations is the amount needed to reach the AB 32 target.

The State's regulatory program implementing the 2008 Scoping Plan is now fully mature. All regulations envisioned in the Scoping Plan have been adopted by the responsible agencies and the effectiveness of those regulations have been estimated by the agencies during the adoption process and then are tracked to verify their effectiveness after implementation. The combined effect of this successful effort is that the State now projects that it will meet the 2020 target and achieve continued progress toward meeting post-2020 targets. Governor Brown, in the introduction to Executive Order B-30-15, states "California is on track to meet or exceed the current target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32)."

The Supreme Court was concerned that new development may need to do more than existing development to reduce greenhouse gases to demonstrate that it is doing its fair share of reductions. As will be shown below, new development does do more than existing development and, due to the nature of the sources of GHG emissions related to development, existing development is equally responsible for reducing emissions from the most important sources of emissions. It is important to note that most of the State's regulatory program applies to new and existing development.

The Scoping Plan reduction from BAU accounts for growth projected in the State and assumes that existing development would continue to emit GHGs at the same rate that occurred in the base year (2002–2004 average). The California Department of Finance Report E-5 predicts that population growth in California from 2005 to 2020 will be 13.2 percent. This means that development that existed in 2005 will produce nearly 87 percent of the State's emissions in 2020. Conversely, new development is only responsible for about 13 percent of the emissions generated during this timeframe. If measures to reduce emissions from existing development were not available, new development could not provide sufficient reductions to reach the 2020 target even if their emissions were reduced to net zero.

The State's regulatory program is able to target both new and existing development because the two most important strategies—motor vehicle fuel efficiency and emissions from electricity generation—obtain reductions equally from existing and new sources. This is because all vehicle operators use cleaner low carbon fuels and buy vehicles subject to the fuel efficiency regulations, and all building owners or operators purchase cleaner energy from the grid that is produced by increasing percentages of renewable fuels. This includes regulations on mobile sources, such as the Pavley standards, that apply to all vehicles purchased in California; the LCFS that applies to all fuel used in California; and the Renewable Portfolio Standard and Renewable Energy Standard that apply to utilities providing electricity to all California homes and businesses.

As described above, the State requires an average reduction from all sources of the emission inventory of about 22 percent. The Scoping Plan strategy will achieve more than average reductions from energy and mobile source sectors that are the primary sources related to development projects, and lower than average reductions from other sources such as agriculture. The amount of reduction estimated by the ARB for each sector was based on technical feasibility and cost effectiveness. The Scoping Plan did not include any control strategies targeting the agricultural sector except for the voluntary use of anaerobic digesters on dairies.

As suggested by the Court, a project BAU analysis was prepared for this project that assesses "consistency with AB 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities." The analysis shows the extent to which the project complies with adopted regulations and the additional amount that will be achieved through project design features. At this point in time, no additional reductions are required from new development beyond regulations for the State to achieve its target. Therefore, this analysis meets the consistency test described by the Supreme Court.

The project analyzes land use-related sources separately from permitted stationary sources of emissions. The stationary source measures are evaluated to determine if BPS will be applied to the project and if no BPS has been identified for a source, the reductions from BAU are assessed. The land use-related sources such as motor vehicles, off-road equipment, and area sources are evaluated using a reduction from BAU approach. The analysis prepared for the project also includes a qualitative assessment of compliance with Scoping Plan measures to support GHG significance findings under Impact GHG-2. There are no measures that identify specific requirements on agricultural industrial development projects, but the analysis shows how the applicable measures affect project emission sources.

### *Impact Analysis*

*Stationary Source Best Performance Standards Analysis*

The project includes stationary source emission units that will be required to obtain SJVAPCD permits and to comply with the GHG BPS policy. The project includes thirteen 27-MMBtu/hr natural gas-fueled column dryers that would utilize approximately 290.79 million CF of natural gas per year. The SJVAPCD identified draft BPS for pistachio dryers in 2010. Use of dryers meeting BPS was estimated to 8.1 percent relative to baseline emissions. The project includes natural gas warming and roasting equipment that is expected to use 26.20 million cubic feet of natural gas per year. The project includes a 170 hp diesel emergency generator that is assumed to operate 100 hours per year for maintenance and testing. The stationary source GHG emissions are shown in Table 14.

**Table 14: Stationary Source Greenhouse Gas Emissions**

| Source | $MTCO_2e$ per year |
|---|---|
| Natural Gas Column Dryers | 15,446.8 |
| Natural Gas Warmer and Roaster | 1,391.5 |
| Diesel Emergency Generator (170 hp) | 8.6 |
| **Total** | **16,846.9** |

Notes:
Calculation totals use unrounded numbers from CalEEMod output.
$MTCO_2e$ = metric tons of carbon dioxide equivalents
Source: CalEEMod output (Appendix A).

The facility is not subject to EPA Mandatory Reporting of Greenhouse Gases Rule. Only facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the EPA.

*Construction*

Total GHG emissions generated during all phases of construction were combined and are presented in Table 15. The SJVAPCD does not recommend assessing the significance of construction-related emissions. However, other jurisdictions, such as the SCAQMD and the SMAQMD, have concluded that construction emissions should be included since they may remain in the atmosphere for years after construction is complete. In order to account for the construction emissions, amortization of the total emissions generated during construction were based on the life of the development (non-residential—30 years) and added to the operational emissions. The project will use LNG hauled by trucks during the first year of operation. The emissions from the haul trucks are temporary; therefore, the emissions were amortized and added to the construction emissions for accounting purposes.

**Table 15: Construction Greenhouse Gas Emissions**

| Year | $MTCO_2e$ per year |
|---|---|
| Construction 2021 | 502.2 |
| Temporary LNG Truck Trips 2021 | 18.5 |
| **Total** | **520.8** |
| **Amortized over 30 years** | **17.4** |

**Table 15 (cont.): Construction Greenhouse Gas Emissions**

| Year | $MTCO_2e$ per year |
|---|---|
| Notes:<br>Calculation totals use unrounded numbers from CalEEMod output.<br>$MTCO_2e$ = metric tons of carbon dioxide equivalents<br>Source: CalEEMod output (Appendix A). | |

*Operation*

Operational or long-term emissions occur over the life of the project. Sources of emissions may include motor vehicles and trucks, energy usage, water usage, and waste generation, and area sources such as consumer products and landscaping activities.

### *Business-As-Usual Operational Emissions*

Operational emissions under the BAU scenario were modeled using CalEEMod 2016.3.2 and EMFAC 2017. Modeling assumptions for the year 2005 were used to represent 2021 and 2030 BAU conditions (without the benefit of regulations adopted to reduce GHG emissions). The SJVAPCD guidance recommends using emissions in 2002–2004 in the baseline scenario to represent conditions—as if regulations had not been adopted—to allow the effect of projected growth on achieving reduction targets to be clearly defined. The vehicle fleet mix was revised to reflect the project's trip generation and vehicle types. The year 2021 was chosen because it is the first year of project operations and is close to the AB 32 target year. The year 2030 was also modeled because it is the SB 32 target year. Full assumptions and CalEEMod model outputs are provided in Appendix A.

### *2021 and 2030 Operational Emissions*

Operational emissions for the year 2021 and 2030 were modeled using CalEEMod and off-model calculations using EPA, ARB, and SJVAPCD emission factors. CalEEMod assumes compliance with some, but not all, applicable rules and regulations regarding energy efficiency, vehicle fuel efficiency, renewable energy usage, and other GHG reduction policies, as described in the CalEEMod User's Guide (SCAQMD 2017). The analysis uses PG&E energy intensity rates that reflect the utility's renewable portfolio.

The reductions obtained from each regulation and the source of the reduction amount used in the analysis are described below.

The following regulations are incorporated into the CalEEMod emission factors:

- Pavley I motor vehicle emission standards
- Pavley II (LEV III) Advanced Clean Cars Program
- 2005, 2008, 2013, and 2016 Title 24 Energy Efficiency Standards

The following regulations have not been incorporated into the CalEEMod emission factors and require alternative methods to account for emission reductions provided by the regulations:

- Low Carbon Fuel Standard (LCFS)
- Renewable Portfolio Standard (RPS)

Pavley II/LEV III standards have been incorporated in the latest version of CalEEMod. ARB estimates a 3 percent reduction in 2020 and a 19 percent reduction from the vehicle categories subject to the regulation by 2030 (ARB 2010b and ARB 2013d).

The ARB GHG Regulation for Medium and Heavy-Duty Engines and Vehicles applies to trucks that will be accessing the project site. The benefits of the regulation were incorporated into CalEEMod 2016.3.2. The ARB estimates that this regulation will reduce GHG emissions from the affected vehicles by 7.2 percent (ARB 2013f).

The Low Carbon Fuel Standard (LCFS) is estimated to achieve a 10 percent reduction in emissions by 2020 and a 20 percent reduction by 2030 (ARB 2018b). CalEEMod does not include credit for the LCFS, so the reduction is calculated off-model.

RPS is not included in CalEEMod, so the benefits of compliance with the RPS is accounted for using the individual energy intensity of the electric utility.

Reductions in emissions from solid waste are based on the County achieving the CalRecycle 75 Percent Initiative by 2020 compared with a 50 percent baseline for 2005. Reductions are taken using the CalEEMod mitigation component.

Regulations applicable to project sources and the percent reduction anticipated from each source are shown in Table 16. The percentage reductions are only applied to the specific sources subject to the regulations. For example, the Pavley Low Emission Vehicle Standards apply only to light-duty cars and trucks.

**Table 16: Reductions from Greenhouse Gas Regulations**

| Regulation | Project Applicability | Reduction Source | Percent Reduction in 2020 and 2030 |
|---|---|---|---|
| Pavley Low Emission Vehicle Standards | Light-duty cars and trucks accessing the site are subject to the regulation | CalEEMod defaults (Pavley I) | 25.1[1] |
| | | CalEEMod defaults. | 3% 2020<br>19.5% 2030[2] |
| ARB Truck and Bus Regulation | Heavy Duty Trucks serving the project are subject to the regulation | Adjusted GHG Emission Factors for HD Trucks in CalEEMod | 7.16%[3] |
| Low Carbon Fuel Standard (LCFS) | Vehicles accessing the site will use fuel subject to the LCFS | Off model adjustment of results | 10% 2020<br>18% 2030[1] |
| Green Building Code Standards | The project will include water conservation features required by the standard. | CalEEMod mitigation component | 20%[6] |
| Water Efficient Land Use Ordinance | The project landscaping will comply with the regulation. | CalEEMod mitigation component | 20%[7] |
| Renewable Portfolio Standard (RPS) | Electricity purchased for use at the project site is subject to the 33 percent RPS mandate. | CalEEMod adjusted energy intensity factors with PG&E emission factors that show the company will exceed the 33 percent mandate. | 54.5%[8] |

## Table 16 (cont.): Reductions from Greenhouse Gas Regulations

| Regulation | Project Applicability | Reduction Source | Percent Reduction in 2020 and 2030 |
|---|---|---|---|
| Solid waste | The solid waste service provider will need to provide programs to increase diversion and recycling to meet the 75 percent mandate. | CalEEMod mitigation component | 25%[9] |

Notes:
Regulations are described in Section 2.3 Regulatory Environment. The source of the percentage reductions from each measure are from the following sources:
[1] Pavley 1 + Low Carbon Fuel Standard Postprocessor Version 1.0 User's Guide (ARB 2010 and ARB 2018b)
[2] ARB Staff Report for LEV III Amendments (ARB 2013e)
[3] ARB Truck and Bus Regulation (ARB 2013f)
[5] California Energy Commission Adoption Hearing Presentation: 2016 Buildings Energy Efficiency Standards (CEC 2015)
[6] 2013 California Green Building Standards Code Section 5.303.2
[7] California Water Plan Update 2013 (CDWR 2013)
[8] Based on CalEEMod default PG&E rate for 2005 and PG&E projected emission factor for 2020
[9] CalRecycle 75 Percent Initiative: Defining the Future (2016).

Full assumptions and model outputs are provided in Appendix A and results of this analysis for the 2021 modeling year are presented in Table 17.

## Table 17: Project Operational Greenhouse Gases (2021)

| Source | Emissions ($MTCO_2e$ per year) | | |
|---|---|---|---|
| | Business as Usual | 2021 (with Regulation) | Percent Reduction |
| Area | 0.01 | 0.01 | 4.6% |
| Energy | 1,065.19 | 592.02 | 44.4% |
| Mobile Employee | 501.67 | 364.21 | 27.4% |
| Mobile Maintenance and Delivery Trucks | 48.34 | 40.83 | 15.5% |
| Mobile Truck | 1,323.12 | 1,078.62 | 18.5% |
| Off Road Equip. and Yard Trucks | 132.15 | 117.90 | 10.8% |
| Waste | 110.79 | 83.10 | 25.0% |
| Water | 74.87 | 34.67 | 53.7% |
| Refrigerants | 115.00 | 58.00 | 49.6% |
| Amortized Construction Emissions | 17.36 | 17.36 | 0.0% |
| **Total** | **3,388.50** | **2,386.71** | **29.6%** |
| Reduction from BAU | | **1,001.79** | — |
| Percent Reduction | | **29.6%** | — |
| Significance Threshold | | 21.7% | — |
| Are emissions significant? | | No | |

### Table 17 (cont.): Project Operational Greenhouse Gases (2021)

| Source | Emissions ($MTCO_2e$ per year) | | |
|---|---|---|---|
| | Business as Usual | 2021 (with Regulation) | Percent Reduction |

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
The project achieves the 21.7 percent required to show consistency with AB 32 targets.
Source: CalEEMod output using 2005 modeling year to represent emissions in 2021 without regulations (Appendix A).
Source of 2021 emissions: CalEEMod output for the year 2021 (Appendix A).

As shown in Table 17, the project would achieve a reduction of 29.6 percent from BAU by the year 2021 with regulations incorporated. This is 7.9 percent above the 21.7 percent average reduction from all sources of GHG emissions now required to achieve AB 32 targets. The ARB originally identified a reduction of 29 percent from BAU as needed to achieve AB 32 targets and used to develop the SJVAPCD BAU threshold. The 2008 recession and slower growth in the years since 2008 have reduced the growth forecasted for 2020, and the amount needed to be reduced to achieve 1990 levels as required by AB 32.

Table 18 shows progress toward achieving 2030 targets with implementation of adopted regulations and on-site reductions from efficiency measures. The results show that the project would achieve a 39.9 percent reduction from BAU by 2030. This is 18.2 percent beyond the average reduction required by the State from all sources to achieve the AB 32 target.

### Table 18: Project Operational Greenhouse Gases (2030)

| Source | Emissions ($MTCO_2e$ per year) | | |
|---|---|---|---|
| | Business as Usual | 2030 (with Regulation) | Percent Reduction |
| Area | 0.01 | 0.01 | 4.7% |
| Energy | 1,065.19 | 592.01 | 44.4% |
| Mobile Employee | 501.67 | 236.96 | 52.8% |
| Mobile Maintenance and Delivery Trucks | 48.34 | 33.88 | 29.9% |
| Mobile Truck | 1,323.12 | 883.14 | 33.3% |
| Off Road Equip. and Yard Trucks | 132.15 | 103.28 | 21.8% |
| Waste | 110.79 | 83.10 | 25.0% |
| Water | 74.87 | 28.79 | 61.5% |
| Refrigerants | 115.00 | 58.00 | 49.6% |
| Amortized Construction Emissions | 17.36 | 17.36 | 0.0% |
| **Total** | **3,388.50** | **2,036.53** | **39.9%** |
| Reduction from BAU | | **1,351.96** | — |
| Percent Reduction | | **39.9%** | — |
| Significance Threshold | | 21.7% | — |

### Table 18 (cont.): Project Operational Greenhouse Gases (2030)

| Source | Emissions ($MTCO_2e$ per year) | | |
|---|---|---|---|
| | Business as Usual | 2030 (with Regulation) | Percent Reduction |
| Are emissions significant? | | No | |

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
The project achieves the 21.7 percent required to show consistency with AB 32 targets.
Source: CalEEMod output using 2005 modeling year to represent emissions in 2030 without regulations (Appendix A).
Source of 2030 emissions: CalEEMod output for the year 2030 (Appendix A).

The analysis presented above does not include new strategies included in the 2017 Scoping Plan Update. The update was adopted in December 2017. The update provides alternatives in terms of their likelihood of implementation and ranges of reduction from the strategies. Measures already authorized by legislation are highly likely to be implemented, while measures requiring new legislation are less likely to go forward. The State is highly likely to incorporate zero net energy buildings in future updates to Title 24. A new round of motor vehicle fuel efficiency standards beyond 2025 when LEV III standards are at their maximum reduction level is highly likely. Changing heavy-duty trucks and off-road equipment to alternative fuels face greater technological hurdles and are less likely to provide dramatic reductions by 2030; however, ARB adopted the Advanced Truck Regulation on June 25, 2020. The new regulation applies to vehicles sold between 2024 and 2035 and is expected to provide substantial reductions toward California's GHG reduction goals.

The 2030 emission limit is 260 $MMTCO_2e$. The ARB estimates that the 2030 BAU (reference) Inventory will be 392 $MMTCO_2e$—a reduction of 132 $MMCO_2e$, including existing policies and programs but not including known commitments that are already underway. The 2017 Scoping Plan Update includes the estimated GHG emissions by sector compared with 1990 levels that is presented in Table 19. The proposed plan would achieve the bulk of the reductions from Electric Power, Industrial fuel combustion, and Transportation. Cap-and-Trade would provide between 10 and 20 percent of the required reductions depending on the amounts achieved by the other reduction measures.

### Table 19: 2017 Scoping Plan Update Estimated Change in GHG Emissions by Sector

| Scoping Plan Sector | Emissions ($MMTCO_2e$ per year) | | |
|---|---|---|---|
| | 1990 | 2030 Proposed Plan Ranges | Percent Change form 1990 |
| Agriculture | 26 | 24–25 | -4 to -8 |
| Residential and Commercial | 44 | 38–40 | -9 to -14 |
| Electric Power | 108 | 42–62 | -43 to -61 |
| High GWP | 3 | 8–11 | 167 to 267 |
| Industrial | 98 | 77–87 | -11 to -21 |
| Recycling and Waste | 7 | 8–9 | 14 to 29 |

**Table 19 (cont.): 2017 Scoping Plan Update Estimated Change in GHG Emissions by Sector**

| Scoping Plan Sector | Emissions ($MMTCO_2e$ per year) | | |
|---|---|---|---|
| | 1990 | 2030 Proposed Plan Ranges | Percent Change form 1990 |
| Transportation (including TCU) | 152 | 103–111 | -27 to -32 |
| Net Sink | -7 | TBD | TBD |
| Subtotal | 431 | 300–345 | -20 to -30 |
| Cap-and-Trade Program | N/A | 40–85 | N/A |
| Total | 431 | 260 | -40 |
| Source: ARB 2017 Scoping Plan Update (ARB 2017c). | | | |

Although 2017 Scoping Plan Update focuses on state agency actions necessary to achieve the 2030 GHG limit, the ARB considers local governments essential partners in achieving California's goals to reduce GHG emissions. The 2030 target will require an increase in the rate of emission reductions compared with what was needed to achieve the 2020 limit, and this will require action and collaboration at all levels, including local government action to complement and support State-level actions. For individual projects, the 2017 Scoping Plan Update suggests that all new land use development implement all feasible measures to reduce GHG emissions. The Scoping Plan does not define all feasible measures or attribute an amount of reductions required from new development beyond compliance with regulations. When requiring mitigation of a project's fair share of a cumulative impact, the Lead Agency must show the nexus between the project contribution and its fair share of mitigation to reduce the impact to less than cumulatively considerable. A threshold based on local support and collaboration with state actions as described in the 2017 Scoping Plan Update does not lend itself to a quantitative determination of fair share. Requiring developers and future business operators to fully mitigate emissions without accounting for compliance with regulations would result in double mitigation, first by the developer and then by the business operator purchasing electricity, fuel, and vehicles compliant with regulations in effect at the time of purchase and beyond that would violate constitutional nexus requirements.

In conclusion, the project would achieve reductions 7.9 percent beyond the ARB 2020 21.7 percent target reduction from BAU requirements from adopted regulations. No new threshold has been adopted by the County or the SJVAPCD for the SB 32 2030 target. However, the project would achieve reductions of 39.9 percent from BAU by 2030 through compliance with existing regulations. Project stationary sources would meet the latest BPS identified for by the SJVAPCD and will be required to perform mandatory emission reporting if reporting thresholds are exceeded. Based on this progress and the strong likelihood that the measures included in the 2017 Scoping Plan Update will be implemented, it is reasonable to conclude that the project is consistent with the 2017 Scoping Plan and will contribute a reasonable fair-share contribution to achieving the 2030 target. Fair share may very well be achieved through compliance with increasingly stringent state regulations that apply to new development, such as Title 24 and CALGreen; regulations on energy production, fuels, and motor vehicles that apply to both new and existing development; and voluntary actions to improve energy efficiency in existing development. In addition, compliance with

the VMT targets adopted to comply with SB 375 and implemented through the RTP/SCS may be considered to adequately address GHG emissions from passenger cars and light-duty trucks. As shown in Table 19, the state strategy relies on the Cap-and-Trade Program to make up any shortfalls that may occur from the other regulatory strategies. The costs of Cap-and-Trade emission reductions will ultimately be passed on to consumers of fuels, electricity, and products produced by regulated industries, such as future businesses and residents and other purchasers of products and services. Therefore, the impact in terms of Considerations #1 and #2 would be less than significant.

### Level of Significance Before Mitigation

Less than significant impact.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance After Mitigation

Less than significant impact.

## 6.2.2 - Greenhouse Gas Reduction Plans

**Impact GHG-2: The project would not conflict with any applicable plan, policy, or regulation of an agency adopted to reduce the emissions of greenhouse gases.**

### Impact Analysis

The following analysis assesses the project's compliance with Consideration #3 regarding consistency with adopted plans to reduce GHG emissions. Fresno County has not adopted a GHG reduction plan. In addition, the County has not completed the GHG inventory, benchmarking, or goal-setting process required to identify a reduction target and take advantage of the streamlining provisions contained in the CEQA Guidelines amendments adopted for SB 97 and clarifications provided in the CEQA Guidelines amendments adopted on December 28, 2018. The SJVAPCD has adopted a Climate Action Plan, but it does not contain measures that are applicable to the project. Therefore, the SJVAPCD Climate Action Plan cannot be applied to the project. Since no other local or regional Climate Action Plan is in place, the project is assessed for its consistency with ARB's adopted 2008 and 2017 Scoping Plans. This would be achieved with an assessment of the project's compliance with Scoping Plan measures.

#### *AB 32 Scoping Plan*

The California State Legislature adopted AB 32 in 2006. AB 32 focuses on reducing GHGs ($CO_2$, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, the ARB adopted the Climate Change Scoping Plan (Scoping Plan) in 2008, which outlines actions recommended to obtain that goal. The Scoping Plan calls for an "ambitious but achievable" reduction in California's GHG emissions, cutting approximately 30 percent (currently 21.7 percent) from BAU emission levels projected for 2020, or about 10 percent from 2008 levels. On a per-capita basis, that means reducing annual emissions of 14 tons of $CO_2$ for every man, woman, and child in California down to about 10 tons per person by 2020. As stated earlier, the ARB has updated its emission inventory forecasts and now estimates a reduction of 21.7 percent is required from BAU in 2020 to achieve AB 32 targets. In addition, ARB

announced on July 18, 2018 that 2016 greenhouse gas inventory for California fell below 1990 levels for the first time since emissions peaked in 2004 (ARB 2018a).

The Scoping Plan contains a variety of strategies to reduce the State's emissions. As shown in Table 20, the project is consistent with most of the strategies, while others are not applicable to the project.

## Table 20: Project Consistency with Scoping Plan

| Scoping Plan Sector | Scoping Plan Measure | Implementing Regulations | Project Consistency |
|---|---|---|---|
| Transportation | California Cap-and-Trade Program Linked to Western Climate Initiative | Regulation for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800) | **Consistent.** The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period. |
| | California Light-Duty Vehicle Greenhouse Gas Standards | Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles | **Consistent**. This measure applies to all new vehicles starting with model year 2012. The project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with construction and operation of the project would be required to comply with the Pavley emissions standards. |
| | | 2012 LEV III Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards | |
| | Low Carbon Fuel Standard. | 2009 readopted in 2015. Regulations to Achieve Greenhouse Gas Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480 | **Consistent.** This measure applies to transportation fuels utilized by vehicles in California. The project would not conflict with implementation of this measure. Motor vehicles associated with construction and operation of the project would utilize low carbon transportation fuels as required under this measure. |

## Table 20 (cont.): Project Consistency with Scoping Plan

| Scoping Plan Sector | Scoping Plan Measure | Implementing Regulations | Project Consistency |
|---|---|---|---|
| | Regional Transportation-Related Greenhouse Gas Targets. | SB 375. Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28 | **Consistent**. The project will provide a small increase in employment in the region that is consistent with the growth projections in the 2018 Regional Transportation Plan/Sustainable Communities Strategy (SCS). The project is not within an SCS priority area and so is not subject to requirements applicable to those areas. |
| | Goods Movement | Goods Movement Action Plan January 2007. | **Not applicable**. The project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation. |
| | Medium/Heavy-Duty Vehicles | 2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer Greenhouse Gas Regulation | **Consistent**. This measure applies to medium and heavy-duty vehicles that operate in the State. The project would not conflict with implementation of this measure. Medium and heavy-duty vehicles associated with construction and operation of the project would be required to comply with the requirements of this regulation. |
| | High Speed Rail | Funded under SB 862 | **Not applicable**. This is a statewide measure that cannot be implemented by a project applicant or lead agency. |
| Electricity and Natural Gas | Energy Efficiency | Title 20 Appliance Efficiency Regulation | **Consistent.** The project would not conflict with implementation of this measure. The project will comply with the latest energy efficiency standards and incorporate applicable energy efficiency features designed to reduce project energy consumption. |
| | | Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Building | |
| | | Title 24 Part 11 California Green Building Code Standards | |

## Table 20 (cont.): Project Consistency with Scoping Plan

| Scoping Plan Sector | Scoping Plan Measure | Implementing Regulations | Project Consistency |
|---|---|---|---|
| | Renewable Portfolio Standard/ Renewable Electricity Standard. | 2010 Regulation to Implement the Renewable Electricity Standard (33% 2020) | **Consistent**. PG&E obtained 33 percent of its power supply from renewable sources such as solar and geothermal in 2017, and about 70 percent of the electricity it delivers is carbon-free, including nuclear and large hydroelectric facilities. The owners of residences within the project would purchase power that consists of a greater percentage of renewable sources and could install renewable solar power systems that will assist the utility in achieving exceeding the renewable mandate. |
| | | SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030) | |
| | Million Solar Roofs Program | Tax incentive program | **Consistent.** This measure is to increase solar throughout California, which is being done by various electricity providers and existing solar programs. The program does not target agricultural facilities; however, the project could install solar panels voluntarily in the future. |
| Water | Water | Title 24 Part 11 California Green Building Code Standards | **Not applicable.** The project is not subject to the California Green Building Standards Code, which requires a 20 percent reduction in indoor water use for residential and commercial development, but not agricultural industrial uses. The project will install limited landscaping that will be consistent with provisions of the subject to a Model Water Efficient Landscape Ordinance (MWELO). |
| | | SBX 7-7—The Water Conservation Act of 2009 | |
| | | Model Water Efficient Landscape Ordinance [MWELO] | |
| Green Buildings | Green Building Strategy | Title 24 Part 11 California Green Building Code Standards | **Consistent.** The project will comply with the California Green Building Standards Code, which requires a 20 percent reduction in indoor water use and solar ready roofs. |
| Industry | Industrial Emissions | 2010 ARB Mandatory Reporting Regulation | **Consistent.** The project will be required to participate in the Mandatory Reporting Program. |

## Table 20 (cont.): Project Consistency with Scoping Plan

| Scoping Plan Sector | Scoping Plan Measure | Implementing Regulations | Project Consistency |
|---|---|---|---|
| Recycling and Waste Management | Recycling and Waste | Title 24 Part 11 California Green Building Code Standards | **Consistent.** The project would not conflict with implementation of these measures. The project is would participate in any recycling program operated by its Solid waste hauler and would use waste products of the pistachio processing for beneficial uses. |
| | | AB 341 Statewide 75 Percent Diversion Goal | |
| Forests | Sustainable Forests | Cap-and-Trade Offset Projects | **Not applicable.** The project site is in an area designated for agricultural uses. No forested lands exist on-site. |
| High Global Warming Potential | High Global Warming Potential Gases | ARB Refrigerant Management Program CCR 95380 | **Consistent**. The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage system. The project includes a small cold storage building that will be subject to the refrigerant management regulations adopted by ARB. Other buildings are cooled with evaporative cooling and fans. |
| Agriculture | Agriculture | Cap-and-Trade Offset Projects for Livestock and Rice Cultivation | **Not applicable.** The project is a food processing operation that is not subject to Cap-and-Trade. The only Agricultural Scoping Plan measure is one that encourages dairies to install anaerobic digesters. |
| Source of ARB Scoping Plan Reduction Measures: California Air Resources Board 2008 | | | |

*Consistency with California's Post-2020 Targets*

The State's executive branch adopted several Executive Orders related to GHG emissions. Executive Orders S-3-05 and B-30-15 are two examples. Executive Order S-3-05 sets goals to reduce emissions to 1990 levels by 2020 and 80 percent below 1990 levels by 2050. The goal of Executive Order S-3-05 to reduce GHG emissions to 1990 levels by 2020 was codified by AB 32. The project, as analyzed above, is consistent with AB 32. Therefore, the project does not conflict with this component of Executive Order S-3-05. Executive Order B-30-15 establishes an interim goal to reduce GHG emissions to 40 percent below 1990 levels by 2030.

The 2030 goal of Executive Order B-30-15 was codified under SB 32 and is now addressed by the 2017 Scoping Plan Update. The 2017 Scoping Plan update provides a strategy that is capable of reaching the SB 32 target if the measures included in the plan are implemented and achieve reductions within the ranges expected. Under the Scoping Plan Update, local government plays a supporting role through its land use authority and control over local transportation infrastructure. The Plan Update includes reductions from implementation of SB 375 that applies to VMT from passenger vehicles. Fresno County targets for SB 375 are a 5 percent reduction by 2020 and a 10 percent reduction by 2035. SB 375 is implemented with the Fresno COG RTP/SCS. The RTP/SCS envisions an increase in development density that would encourage fewer and shorter trips and more trips by transit, walking, and bicycling.

Now that the 2017 Scoping Plan has been adopted, new methodologies and threshold approaches are required to determine the fair-share contributions County development projects would need to make to achieve the 2030 target. In the meantime, however, the discussion under "Consistency with SB 32" below addresses the consistency of the proposed project with SB 32, which provides the statutory underpinning of the 2017 Scoping Plan. The SB 32 target requires GHG emissions to be reduced by 40 percent from 1990 levels. No consensus has been reached around the State on a new quantitative target for new development based on consistency with the SB 32 target.

The Executive Order S-3-05 2050 target has not been codified by legislation. Studies have shown that, in order to meet the 2050 target, aggressive pursuit of technologies in the transportation and energy sectors, including electrification and the decarbonization of fuel, will be required. Because of the technological shifts required and the unknown parameters of the regulatory framework in 2050, quantitatively analyzing the project's impacts further relative to the 2050 goal is speculative for purposes of CEQA (ARB 2014b).

Executive Orders B-55-18 Carbon Neutrality by 2045 (2018) signed on September 10, 2018 set a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter (Brown 2018). This goal has also not been codified by legislation and will require the same technological shifts and unknown regulatory framework to achieve; therefore, its relationship to the project is speculative for CEQA purposes.

Carbon neutrality means that all GHG emissions emitted into the atmosphere are balanced in equal measure by GHGs that are removed from the atmosphere, either through carbon sinks or carbon capture and storage. The ARB commissioned an evaluation of scenarios that could achieve carbon neutrality by 2045. The scenarios rely on different levels of carbon dioxide removal (CDR). All scenarios include high levels of energy efficiency across all sectors, high levels of renewable

electricity generation, high levels of electrification in the transportation and buildings sector, and deep reductions in non-energy, non-combustion greenhouse gas emissions like methane and HFCs. The scenarios differ in their level of adoption of advanced mitigation measures that result in over 80 percent reduction in GHG emissions by 2045 and their degree of their reliance on carbon dioxide removal (CDR) to achieve carbon neutrality by 2045 (E&EE 2020).

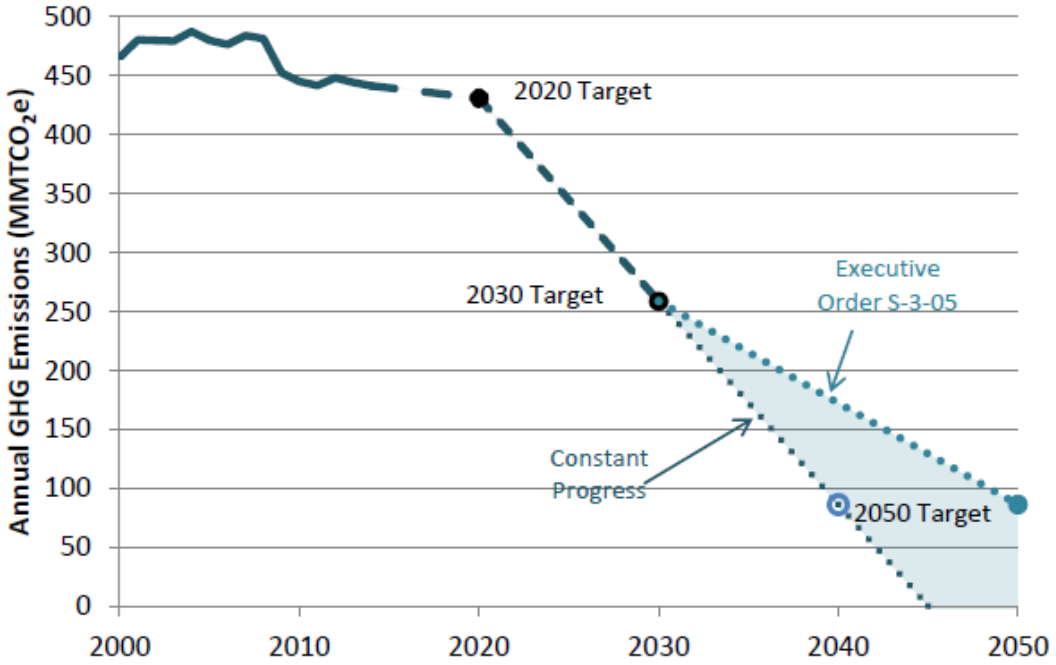
For industrial uses requiring process heat such as the project, the evaluation considered continued use of natural gas with carbon capture and storage, and electrification. For boilers, the evaluation considered use of hydrogen fuel. Biogas can also be used as a carbon neutral substitute for natural gas (E&EE 2020). The project uses specialized nut dryers and roasters for approximately two months per year. Once the State determines the appropriate control technology for this type of operation through a public regulatory process, the project could achieve carbon neutrality either by the natural gas utility providing carbon capture and storage to offset the emissions and passing the costs to the end users, or the direct use of pipeline quality biogas, or by technological retrofits to electric or hydrogen dryers and roasters when replacement is required. Commercial availability of equipment capable of performing the processes is also necessary.

The 2008 Scoping Plan recognized that AB 32 established an emissions reduction trajectory that will allow California to achieve the more stringent 2050 target: “These [greenhouse gas emission reduction] measures also put the State on a path to meet the long-term 2050 goal of reducing California’s GHG emissions to 80 percent below 1990 levels. This trajectory is consistent with the reductions that are needed globally to stabilize the climate.” In addition, ARB’s First Update “lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050,” and many of the emission reduction strategies recommended by ARB would serve to reduce the proposed project’s post-2020 emissions level to the extent applicable by law:

- **Energy Sector:** Continued improvements in California’s appliance and building energy efficiency programs and initiatives, such as the State’s zero net energy building goals, would serve to reduce the proposed project’s emissions level. Additionally, further additions to California’s renewable resource portfolio would favorably influence the proposed project’s emissions level.
- **Transportation Sector:** Anticipated deployment of improved vehicle efficiency, zero emission technologies, lower carbon fuels, and improvement of existing transportation systems all will serve to reduce the proposed project’s emissions level.
- **Water Sector:** The proposed project’s emissions level will be reduced as a result of further desired enhancements to water conservation technologies.
- **Waste Management Sector:** Plans to further improve recycling, reuse and reduction of solid waste will beneficially reduce the proposed project’s emissions level.

For the reasons described above, the project’s post-2020 emissions trajectory is expected to follow a declining trend, consistent with the 2030 and 2050 targets. The trajectory required to achieve the post-2020 targets is shown in Figure 8.

**Figure 8: California's Path to Achieving the 2050 Target**




Source: ARB 2017 Scoping Plan Update (ARB 2017c).

In his January 2015 inaugural address, Governor Brown expressed a commitment to achieve "three ambitious goals" that he would like to see accomplished by 2030 to reduce the State's GHG emissions:

- Increasing the State's Renewable Portfolio Standard from 33 percent in 2020 to 50 percent in 2030;
- Cutting the petroleum use in cars and trucks in half; and
- Doubling the efficiency of existing buildings and making heating fuels cleaner.

*Consistency with SB 32*

The 2017 Scoping Plan includes the strategy that the State intends to pursue to achieve the 2030 targets of Executive Order S-3-05 and SB 32. The 2017 Scoping Plan includes the following summary of its overall strategy for reaching the 2030 target:

- SB 350
  - Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030 (Now 60 percent per SB 100).
  - Doubling of energy efficiency savings by 2030.
- Low Carbon Fuel Standard (LCFS)
  - Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020) (Now 20 percent in 2030).
- Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
  - Maintaining existing GHG standards for light- and heavy-duty vehicles.

  - Put 4.2 million zero-emission vehicles (ZEVs) on the roads.
  - Increase ZEV buses, delivery and other trucks.

- Sustainable Freight Action Plan
  - Improve freight system efficiency.
  - Maximize use of near-zero emission vehicles and equipment powered by renewable energy.
  - Deploy over 100,000 zero-emission trucks and equipment by 2030.

- Short-Lived Climate Pollutant (SLCP) Reduction Strategy
  - Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
  - Reduce emissions of black carbon 50 percent below 2013 levels by 2030.

- SB 375 Sustainable Communities Strategies
  - Increased stringency of 2035 targets.

- Post-2020 Cap-and-Trade Program
  - Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
  - ARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, ARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.

- By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Table 21 provides an analysis of the project's consistency with the 2017 Scoping Plan Update measures.

**Table 21: Consistency with SB 32 2017 Scoping Plan Update**

| Scoping Plan Measure | Project Consistency |
|---|---|
| **SB 350 50% Renewable Mandate.** Utilities subject to the legislation will be required to increase their renewable energy mix from 33% in 2020 to 50% in 2030. | **Consistent**: The project will purchase electricity from a utility subject to the SB 350 Renewable Mandate. |
| **SB 350 Double Building Energy Efficiency by 2030.** This is equivalent to a 20 percent reduction from 2014 building energy usage compared to current projected 2030 levels | **Not Applicable.** This measure applies to existing buildings. |
| **Low Carbon Fuel Standard.** This measure requires fuel providers to meet an 18 percent reduction in carbon content by 2030. | **Consistent.** Vehicles accessing the project site will use fuel containing lower carbon content as the fuel standard is implemented. |
| **Mobile Source Strategy (Cleaner Technology and Fuels Scenario).** Vehicle manufacturers will be required to meet existing regulations mandated by the LEV III and Heavy-Duty Vehicle programs. | **Consistent.** Future employees can be expected to purchase increasing numbers of more fuel-efficient and zero emission cars and trucks each year. |

## Table 21 (cont.): Consistency with SB 32 2017 Scoping Plan Update

| Scoping Plan Measure | Project Consistency |
|---|---|
| The strategy includes a goal of having 4.2 million ZEVs on the road by 2030 and increasing numbers of ZEV trucks and buses. | |
| **Sustainable Freight Action Plan** The plan's target is to improve freight system efficiency 25 percent by increasing the value of goods and services produced from the freight sector, relative to the amount of carbon that it produces by 2030. This would be achieved by deploying over 100,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030. | **Not Applicable.** The measure applies to owners and operators of trucks and freight operations. |
| **Short-Lived Climate Pollutant (SLCP) Reduction Strategy.** The strategy requires the reduction of SLCPs by 40 percent from 2013 levels by 2030 and the reduction of black carbon by 50 percent from 2013 levels by 2030. | **Not Applicable.** The project does not include sources that produce significant quantities of methane or black carbon. Diesel trucks accessing the site will achieve significant reductions in $PM_{2.5}$ with adopted regulations that will reduce this source of black carbon. |
| **SB 375 Sustainable Communities Strategies.** Requires Regional Transportation Plans to include a sustainable communities strategy for reduction of per capita vehicle miles traveled. | **Not Applicable.** The project is a food processing operation in a rural area. The project is expected to have high rates of carpooling because of the distance to the nearest urban areas. |
| **Post-2020 Cap-and-Trade Program.** The Post 2020 Cap-and-Trade Program continues the existing program for another 10 years. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. | **Consistent.** The post-2020 Cap-and-Trade Program indirectly affects people who use the products and services produced by the regulated industrial sources when increased costs of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the program's first compliance period. |
| **Natural and Working Lands Action Plan.** The ARB is working in coordination with several other agencies at the federal, state, and local levels, stakeholders, and with the public, to develop measures as outlined in the Scoping Plan Update and the governor's Executive Order B-30-15 to reduce GHG emissions and to cultivate net carbon sequestration potential for California's natural and working land. | **Not Applicable.** The project site is vacant agricultural land that will be developed with an industrial use and would not be considered natural or working lands suitable for sequestration. |
| Source: ARB 2017c—2017 Scoping Plan Update. | |

Regarding goals for 2050 under Executive Order S-3-05 and carbon neutrality by 2045 under Executive Order B-55-18, it is not possible at this time to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that operation of the project would comply with applicable measures enacted by state lawmakers to achieve an 80 percent reduction below 1990 levels by 2050 or carbon neutrality by 2045. In its 2008 Scoping Plan, ARB acknowledged that the "measures needed to meet the 2050 are too far in the future to define in detail." The 2017 Scoping Plan provides an intermediate target that is intended to achieve reasonable progress toward the 2050 target.

Accordingly, taking into account the proposed project's emissions, consistency with Scoping Plan measures, and the progress being made by the State towards reducing emissions in key sectors such as transportation, industry, and electricity, the project would further the State's goals of reducing GHG emissions to 1990 levels by 2020, a 40 percent reduction from 1990 levels by 2030, and an 80 percent reduction below 1990 levels by 2050 and carbon neutrality by 2045, and would not obstruct their attainment.

### Level of Significance Before Mitigation

Less than significant impact.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance After Mitigation

Less than significant impact.

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# Appendix A:
# Modeling Assumptions and Results

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# Appendix B: San Joaquin Valley Air Pollution Control District Amicus Brief on Friant Ranch Supreme Court Decision

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# Appendix A: Modeling Assumptions and Results

# Appendix A: Modeling Assumptions

## Kamm Avenue Pistachio Processing Plant

**34411 Kamm Avenue, Cantua Creek, CA 93608**

| | | | | | |
|---|---|---|---|---|---|
| Parcel Size | 315.8 | Acres | | | |
| Disturbed Area | 134.6 | Acres | | | |
| Parking (Acres) | 1.60 | | | | |
| Buildings (Acres) | 4.08 | | | | |
| | | | | | |
| Non Asphalt Surfaces (Acres) | 128.92 | | | | |
| AC Grindings for Road Base Sf | 1,894,336 | 43.49 | | | |
| Cubic Yard of AC Grindings | 35,080 | | | | |
| Truck Loads | | | | | |
| | **SF** | **Acres** | | | |
| Building Foundation Concrete | 177,665 | 4.08 | | | |
| Concrete Under Silos | 265,730 | 6.10 | | | |
| Concrete Under Driers | 125,813 | 2.89 | | | |
| Concrete Under Canopies | 25,430 | 0.58 | | | |
| **Total Concrete Area** | **594,638** | 13.65 | | | |
| Concrete In CY (6" depth) | 11,012 | | | | |
| Cubic Yards per Cement Truck | 10 | | | | |
| Concrete Truck Loads | 1,101.18 | 100.00 | 11.01181481 | | |
| | | | | | |
| **APN** | 038-300-17S | 155.76 | | | |
| | 038-300-30S | 160.00 | | | |
| | | | | | |
| Construction Start Date | 1/1/2021 | | | | |
| Construction End Date | 8/14/2021 | 40 Weeks | | | |
| Earliest Operation Date | 8/15/2021 | | | | |
| | | | | | |
| | **Storage** | **2 Ponds (SF)** | **450x450x18 Ft** | **Acres/Basin** | **Acres for Both** |
| Process Water Basin (acres) | 50 acre feet | **405,000.00** | 202,500 | 4.65 | 9.30 |
| | | | | | |
| Power from Grid Connection | | | | | |
| | | | | | |
| **Facility Throughput** | | | | | |
| Peak Daily During Harvest (lbs) | 1,428,571 | 42 | Day Harvest Period | | |
| Annual Throughput (lbs) | | 60,000,000 | | | |
| | | | | | |
| **Structure Construction** | | | **Acres** | | |
| Processing/Packing Building | 130,000 | | 1.08 | WH | |
| Cold Storage Bldg | 15,000 | | 0.52 | Parking Lot | Coolant is Freon |
| MCC Buildings (2) 1,200 SF | 1,200 | | | | |
| Air Compressor Building | 1,200 | | | | |
| Admin Office Bldg | 12,156 | | | | |
| Breakroom Supv Office Bldg | 8,818 | | | | |
| Main Scale House/Guard Shack/Truck Scale | 1,000 | | | | |
| Scale House/Truck Scale | 200 | | | | |
| Shop Building | 6,570 | 2920 | Canopy | | |
| Fire Pump House | 324 | | | | |
| Storage Warehouse | 972 | | | | |
| Domestic Water Treatment Control Bldg | 225 | | | | |
| Square Feet of Building Floor Space | 177,665 | 4.079 | | | |
| Building KSF | 177.665 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Storage Silos | 49 | 48' dia | 65' tall | | |
| Huller Canopy | 21,600 | | | | |
| Water Storage Tank (gal) | 353,000 | | | | |
| Equipment Canopies | 510 | | | | |
| Domestic water Tank (gal) | 70,000 | gal | | | |
| Domestic water treament filters | 3 | | | | |
| Fumigation area (fenced) | 50,000 | SF | | | |
| Chemical Storage Area | 400 | SF | | | |
| 18 inch water pipeline | | | | | |
| Hulling process water and agitators, separators, screen systems | | | | | |
| 2 Process water storage ponds (lined) | 450 | SF | | | |
| 5 Septic systems | | | | | |
| Stormwater retention basin | 310 x 400 | 14 acre feet | | 2.85 | Acres Surface Area |

Assuming these items are prefabricated with installation only

## HHD Truck Trip Calculation

| | Harvest Trucks | Shipping Trucks | Delivery Vehicles | Solid Waste | Recycled Waste | Total | Work Days/ Week | Weeks/Year | Annual Trips (2 way) | Average Daily Trips | Daily Trucks Trips | Peak Daily Truck Trips | Harvest Trips/Year | Other Trips/Year | Delivery Trips |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **January - August** | 0 | 8 | 2 | 1 | 1 | 12 | 5 | 36 | 4,320 | | 24 | | | 4,320 | 720 |
| **September - October** | 150 | 8 | 2 | 9 | 2 | 171 | 7 | 6 | 14,364 | | 342 | 342 | **12,600** | 1,764 | 168 |
| **November - December** | 0 | 8 | 2 | 1 | 1 | 12 | 5 | 10 | 1,200 | | 24 | | | 1,200 | 200 |
| | | | | | | | | **52** | **19,884** | **54.48** | **390** | | | **7,284** | **1,088** |
| Other trips includes shipping, solid waste, and recycled waste trips. | | | | | | | | | | | 0.6337 | | **trips/ksf** | 0.3663 | |

## Employee Trips

Rideshare Rate 23%

| | Employees | AVR | Employee Vehicles | Employee Trips/Day | Visitors | Visitor Trips/Day | Work Days/ Week | Weeks/Year | Annual Trips | Average Daily Trips | Peak Daily Trips |
|---|---|---|---|---|---|---|---|---|---|---|---|
| January - August | 60 | 1.15 | 52 | 104.0 | 2.0 | 4.0 | 5 | 36 | 19,440 | | |
| September - October | 120 | | 104 | 208.0 | 2.0 | 4.0 | 7 | 6 | 8,904 | | **212.0** |
| November - December | 60 | | 52 | 104.0 | 2.0 | 4.0 | 5 | 10 | 5,400 | | |
| | | | | | | | | **52** | **33,744** | **92.45** | |

Passenger Vehicle Trips

| | |
|---|---|
| **Average Daily Trips** | 92.45 |
| **Trips/KSF** | 0.520 |
| **KSF** | 177.67 |
| **Trips/KSF Peak Daily** | 1.19 |

Trip generation data from project TIS

## Maintenance Vehicle Trips

| | Vehicles | Trips/Day | Days/Week | Weeks/Year | Trips/Year | Average Daily Trips | Peak Daily Trips |
|---|---|---|---|---|---|---|---|
| LDT1 Maintenance Trucks | 2.00 | 4 | 5 | 52 | 1,040 | **2.85** | **4.00** |

| | |
|---|---|
| Maintenance Trip Length (miles) | 50.00 |
| Trips/KSF | 0.016 |
| Peak Daily Trips/KSF | 0.023 |

## Kamm Avenue Pistachio

### Project Construction Schedule

| PhaseNumber | PhaseName | PhaseType | PhaseStartDate | PhaseEndDate | NumDays\ | NumDays |
|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 2021/01/01 | 2021/01/14 | 5 | 10 |
| 2 | Grading | Grading | 2021/01/15 | 2021/02/25 | 5 | 30 |
| 3 | Building Constructio | Building Constructi | 2021/02/26 | 2021/07/15 | 5 | 100 |
| 4 | Paving | Paving | 2021/07/16 | 2021/07/22 | 5 | 5 |
| 5 | Architectural Coatin | Architectural Coati | 2021/07/23 | 2021/08/12 | 5 | 15 |

## Construction Equipment List

| Phase Name | Offroad Equipment | No. of Equip. | Usage Hours/da | Work Days Used | Hours/Pha | Horsepow | Load Fact | Fuel Use (gal) |
|---|---|---|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 6 | 8 | 10 | 480 | 247 | 0.4 | 5,928 |
| Site Preparation | Tractors/Loaders/Ba | 8 | 8 | 10 | 640 | 97 | 0.37 | 3,104 |
| Grading | Excavators | 4 | 8 | 30 | 960 | 158 | 0.38 | 7,584 |
| Grading | Graders | 2 | 8 | 30 | 480 | 187 | 0.41 | 4,488 |
| Grading | Rubber Tired Dozers | 2 | 8 | 30 | 480 | 247 | 0.4 | 5,928 |
| Grading | Scrapers | 4 | 8 | 30 | 960 | 367 | 0.48 | 17,616 |
| Grading | Tractors/Loaders/Ba | 4 | 8 | 30 | 960 | 97 | 0.37 | 4,656 |
| Building Construction | Cranes | 2 | 7 | 100 | 1400 | 231 | 0.29 | 16,170 |
| Building Construction | Forklifts | 6 | 8 | 100 | 4800 | 89 | 0.2 | 21,360 |
| Building Construction | Generator Sets | 2 | 8 | 100 | 1600 | 84 | 0.74 | 6,720 |
| Building Construction | Tractors/Loaders/Ba | 6 | 7 | 100 | 4200 | 97 | 0.37 | 20,370 |
| Building Construction | Welders | 1 | 8 | 100 | 800 | 46 | 0.45 | 1,840 |
| Paving | Pavers | 1 | 8 | 5 | 40 | 130 | 0.42 | 260 |
| Paving | Paving Equipment | 1 | 8 | 5 | 40 | 132 | 0.36 | 264 |
| Paving | Rollers | 1 | 8 | 5 | 40 | 80 | 0.38 | 160 |
| Architectural Coating | Air Compressors | 2 | 6 | 15 | 180 | 78 | 0.48 | 702 |
| | | | | | | | | **117,150** |
| Fuel Use Factor (SCAQMD | 0.05 gal/bhp-hr | | | | **18060** | | | |

# Appendix A: Onsite Truck Emissions and Fleet Mix

**Yard Truck Emission Factors**

EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: FRESNO
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

| Region | Calendar Year | Vehicle Category | Model Year | Speed | Fuel | VMT | ROG_RUNEX | CO_RUNEX | NOx_RUNEX | CO2_RUNEX | CH4_RUNEX | PM10_RUNEX | PM2_5_RUNN | N2O_RUNEX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FRESNO | 2021 | T7 tractor | Aggregated | 5 | DSL | 2,765 | 1.40328 | 3.97155 | 15.81766 | 3,572.91 | 0.06518 | 0.14919 | 0.14274 | 0.56161 |
| FRESNO | 2021 | T7 tractor | Aggregated | 10 | DSL | 5,906 | 1.05496 | 2.86624 | 12.59776 | 3,000.96 | 0.04900 | 0.12660 | 0.12113 | 0.47171 |
| FRESNO | 2021 | T7 tractor | Aggregated | 15 | DSL | 7,530 | 0.58388 | 1.78416 | 9.21318 | 2,391.15 | 0.02712 | 0.09072 | 0.08679 | 0.37586 |
| Total | | | | | | | 3.04212 | 8.62195 | 37.62859 | 8,965.03 | 0.14130 | 0.36651 | 0.35065 | 1.40918 |
| Average 5-15 MPH | | | | | | | **1.01404** | **2.87398** | **12.54286** | **2,988.34** | **0.04710** | **0.12217** | **0.11688** | **0.46973** |

| Region | Calendar Year | Vehicle Category | Model Year | Speed | Fuel | VMT | CO2_RUNEX | CH4_RUNEX | N2O_RUNEX |
|---|---|---|---|---|---|---|---|---|---|
| FRESNO | 2005 | T7 tractor | Aggregated | 5 | DSL | 2,144 | 3753.39 | 0.72502 | 0.58843 |
| FRESNO | 2005 | T7 tractor | Aggregated | 10 | DSL | 4,578 | 3399.93 | 0.55747 | 0.53302 |
| FRESNO | 2005 | T7 tractor | Aggregated | 15 | DSL | 5,837 | 2786.27 | 0.29569 | 0.43681 |
| Total | | | | | | | 9,939.59 | 1.57818 | 1.55826 |
| Average 5-15 MPH | | | | | | | **3,313.20** | **0.52606** | **0.51942** |

| Region | Calendar Year | Vehicle Category | Model Year | Speed | Fuel | VMT | CO2_RUNEX | CH4_RUNEX | N2O_RUNEX |
|---|---|---|---|---|---|---|---|---|---|
| FRESNO | 2030 | T7 tractor | Aggregated | 5 | DSL | 3,242 | 2946.11 | 0.00594 | 0.46309 |
| FRESNO | 2030 | T7 tractor | Aggregated | 10 | DSL | 6,925 | 2435.80 | 0.00373 | 0.38287 |
| FRESNO | 2030 | T7 tractor | Aggregated | 15 | DSL | 8,829 | 1916.77 | 0.00207 | 0.30129 |
| Total | | | | | | | 7,298.68 | 0.01174 | 1.14725 |
| Average 5-15 MPH | | | | | | | **2,432.89** | **0.00391** | **0.38242** |

Offseason Ops 5 days/week for 46 weeks 230

**Yard Truck VMT and Idling Hours**

| | Truck Amount | Idling Hrs/Truck/Day | Idling Hrs/Day | Days/Year | Idling Hrs/Year | Miles/Truck/Day | Miles/Day | Miles/Year 2021 |
|---|---|---|---|---|---|---|---|---|
| Harvest Operations | 8 | 1 | 8 | 42 | 336 | 9.4 | 75 | 3,150 |
| Off Season Operations | 1 | 1 | 1 | 230 | 230 | 3 | 3 | 115 |
| Totals | | | | | **566** | | | **3,265** |

**Running Emissions Calculations 2021**

| | ROG | Nox | CO | PM10 | PM2.5 | CO2 | CH4 | N2O |
|---|---|---|---|---|---|---|---|---|
| Max Daily Emissions g/day | 76.05 | 940.71 | 215.55 | 9.16 | 8.77 | 224,125.65 | 3.53 | 35.23 |
| Max Daily Emissions lbs/day | 0.17 | 2.07 | 0.48 | 0.02 | 0.02 | 494.11 | 0.01 | 0.08 |
| | | | | | | | | |
| g/lb conversion factor | 0.00220 | | | | | | | |
| | **ROG** | **Nox** | **CO** | **PM10** | **PM2.5** | **CO2** | **CH4** | **N2O** |
| Annual Emissions lbs/Year | 7.30 | 90.28 | 20.69 | 0.88 | 0.84 | 21,510.34 | 0.34 | 3.38 |
| Annual Running Emissions tons/year | 0.004 | 0.045 | 0.010 | 0.000 | 0.000 | 10.755 | 0.000 | 0.002 |
| Annual Idling Emission lbs/Year | | | | 0.025 | | | | |
| Annual Idling Emission tons/yr | 0.002 | 0.021 | 0.020 | 0.000 | 0.000 | 3.838 | 0 | 0 |
| Total Yard Truck Emissions tons/yr | **0.005** | **0.066** | **0.030** | **0.025** | **0.000** | **14.593** | **0.000** | **0.002** |
| Total Yard Truck Emissions lbs/year | | | | 0.904 | | | | |
| | | | | | | | | |
| g/lb conversion factor | 0.00220 | | | | | | | |

**Truck Trip Length**

| Harvest | Fraction at Distance | Avg Distance (miles) | Weighted Avg Trip Length (miles) |
|---|---|---|---|
| Within 5 Miles | 0.48 | 3 | 1.44 |
| 10-20 Miles | 0.08 | 15 | 1.2 |
| 30-35 Miles | 0.27 | 32 | 8.64 |
| 70-90 Miles | 0.17 | 80 | 13.6 |
| | 1.00 | | **24.88** |
| 0.1783 | | | |
| Outgoing Product Truck Trips | | **50** | |

Distance estimates provided by applicant

| | |
|---|---|
| Harvest Trips/Year | 12,600 |
| Other Truck Trips | 7,284 |
| Total Truck Trips/Year | 19,884 |
| Average Daily Truck Trips | **54.48** |

| | Weighted Avg Trip Length (miles) |
|---|---|
| Weighted Average Truck Trip Length All Pur | **34.1** |

| | |
|---|---|
| Project Square Feet (KSF) | 177.67 |
| Truck Trips/KSF | 0.31 |
| Peak Truck Trips/KSF | 1.92 |

**Other Equipment During Operations**

| | |
|---|---|
| Electric Forklifts | All Plant |
| Propane Forklifts | 4 |
| Golf Carts (electric) | 1 |
| **Yard Dogs (trucks)** | |
| Harvest | 8 |
| Non Harvest | 1 |
| Tractors (harvest) | 4 |

**LNG Truck Hauling**

| | Trips per Day | Trip Length | VMT |
|---|---|---|---|
| Week 1: 4 deliveries/day | 8 | 152 | 1,216 |
| Week 2: 7 deliveries/day | 14 | 152 | 2,128 |
| Week 3: 11 deliveries/day | 22 | 152 | 3,344 |
| Week 4: 11 deliveries/day | 22 | 152 | 3,344 |
| Week 5: 6 deliveries/day | 12 | 152 | 1,824 |
| Week 6: 3 deliveries/day | 6 | 152 | 912 |
| Total Trips per Year | **84** | | **12,768** |

439,405 MCF/year

| | |
|---|---|
| ADT for CalEEMod Run | 0.230 |

**Onsite Truck Emissions**

EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: FRESNO
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

| Region | Calendar Year | Vehicle Categor | Model Year | Speed | Fuel | VMT | NOx_RUNEX | PM2.5_RUNEX | PM10_RUNEX | CO2_RUNEX | CH4_RUNEX | N2O_RUNEX | ROG_RUNEX | TOG_RUNEX | CO_RUNEX | SOx_RUNEX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FRESNO | 2021 | T7 tractor | Aggregated | 5 | DSL | 2,765.48 | 15.8177 | 0.1427 | 0.1492 | 3572.9115 | 0.0652 | 0.5616 | 1.4033 | 1.60 | 3.9716 | 0.033755 |
| FRESNO | 2021 | T7 tractor | Aggregated | 10 | DSL | 5,906.10 | 12.5978 | 0.1211 | 0.1266 | 3000.9601 | 0.0490 | 0.4717 | 1.0550 | 1.20 | 2.8662 | 0.028352 |
| FRESNO | 2021 | T7 tractor | Aggregated | 15 | DSL | 7,530.48 | 9.2132 | 0.0868 | 0.0907 | 2391.1545 | 0.0271 | 0.3759 | 0.5839 | 0.66 | 1.7842 | 0.02259 |
| FRESNO | 2021 | T7 tractor | Aggregated | 20 | DSL | 8,604.43 | 7.4202 | 0.0632 | 0.0661 | 2043.9793 | 0.0149 | 0.3213 | 0.3201 | 0.36 | 1.2174 | 0.019311 |
| FRESNO | 2021 | T7 tractor | Aggregated | 25 | DSL | 10,466.40 | 6.1553 | 0.0535 | 0.0560 | 1797.1612 | 0.0110 | 0.2825 | 0.2363 | 0.27 | 0.9472 | 0.016979 |
| | | | | | | | 51.2040 | 0.4674 | 0.4885 | 12806.1666 | 0.1671 | 2.0130 | 3.5986 | 4.10 | 10.7866 | |
| Running Emissions 5-25 MPH Averaged | | | | | | | **10.2408** | **0.0935** | **0.0977** | **2561.2333** | **0.0334** | **0.4026** | **0.7197** | **0.82** | **2.1573** | |

| | |
|---|---|
| Miles per trip | 0.5 |
| Max Trucks | 171 |
| Max Daily Trips | 342 |

**Onsite Truck**

| **Max Daily Emissions** | **ROG** | **NOX** | **CO** | **SO2** | **PM10** | **PM2.5** |
|---|---|---|---|---|---|---|
| g/day | 1751.1771 | 15.9845 | 16.7072 | 437970.9 | 5.7163 | 68.8429 |
| Running Emissions lbs/day | 3.8607 | 0.0352 | 0.0368 | 965.5594 | 0.0126 | 0.1518 |
| Idling Emissions Lbs/Day | 0.227 | 3.107 | 2.974 | 0 | 0.002 | 0.002 |
| Total Emissions/Day | **4.088** | **3.143** | **3.011** | **965.5594** | **0.014** | **0.154** |

| | |
|---|---|
| g/lb conversion factor | 0.00220 |

| | |
|---|---|
| Idling Minutes/Day Per Truck | 15 |
| Max Trucks | 171 |
| Idling Hours per Day | 42.75 |

| **Idling Emissions** | | | | | | **Pollutant** | **grams/hour** | **g/day** | **Max lbs/day** |
|---|---|---|---|---|---|---|---|---|---|
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | HC | 1.9057 | 81.47 | 0.180 |
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | CO | 31.5572 | 1,349.07 | 2.974 |
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | NOx | 32.9696 | 1,409.45 | 3.107 |
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | PM | 0.0199 | 0.85 | 0.002 |
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | ROG | 2.4133 | 103.17 | 0.227 |
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | CO2 | 6152.0760 | 263,001.25 | 579.818 |
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | CH4 | 0.1121 | 4.79 | 0.011 |
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | PM10 | 0.0198 | 0.85 | 0.002 |
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | PM2_5 | 0.0189 | 0.81 | 0.002 |

## Fleet Mix Allocation

### Fleet Mix Allocation

**Land Use Assumptions**

| LandUseType | LandUseSubType | LandUseUnitAmou | LandUseSizeMetric |
|---|---|---|---|
| Industrial | Heavy Industrial | 177.665 | KSF |

ITE 9th Edition/CalEEMod

**Project Trip Generation**

| VehicleTripsLandUs | VehicleTripsLandU | WD_TR | ST_TR | SU_TR | Daily Avg Tr | LU SF | Trip Gen |
|---|---|---|---|---|---|---|---|
| Industrial | Heavy Industrial | 1.5 | 1.5 | 1.5 | 1.50 | 177.67 | 266.50 |

| | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Default** | 0.01703 | 0.00473 | 0.03303 | 0.12475 | 0.00237 | 0.00159 | 0.00515 | 0.00110 | 0.00063 | |
| **Revised** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| **Diffence to Allocate** | 0.01703 | 0.00473 | 0.03303 | 0.12475 | 0.00237 | 0.00159 | 0.00515 | 0.00110 | 0.00063 | 0.19038 |

| **Adjusted Fleet Mix for No HDT Trucks** | **LDA** | **LDT1** | **LDT2** | **MDV** | **Total** | | |
|---|---|---|---|---|---|---|---|
| Default Fleet Mix | 0.487139 | 0.031901 | 0.169199 | 0.121386 | 0.809625 | | 0.190375 |
| Adjusted Fleet Mix | 0.601685 | 0.039402 | 0.208984 | 0.149929 | 1.000000 | Allocation Fraction | **0.190375** |
| | | | | | 0.190375 | | |

**2021 CalEEMod Default Fleet Mix for Fresno County**

| | EmissionType | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Default Fleet Mix | FleetMix | 0.487139 | 0.031901 | 0.169199 | 0.121386 | 0.017033 | 0.004732 | 0.033028 | 0.124746 | 0.002366 | 0.00159 | 0.005154 | 0.001097 | 0.000629 | 1 |
| Revised Fleet Mix | | **0.60168** | **0.03940** | **0.20898** | **0.14993** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | 0 | 0 | 1.000000 |

## EMFAC2017 (v1.0.2) Emissions Inventory

Region Type: County
Region: FRESNO
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

| Region | Calendar Year | Vehicle Category | Model Year | Speed | Fuel | Population | VMT | Trips | Fuel Consumption |
|---|---|---|---|---|---|---|---|---|---|
| FRESNO | 2021 | All Other Buses | Aggregated | Aggregated | DSL | 163 | 9,552 | 1,372 | 1.07 |
| FRESNO | 2021 | LDA | Aggregated | Aggregated | GAS | 360,187 | 13,826,269 | 1,691,919 | 450.58 |
| FRESNO | 2021 | LDA | Aggregated | Aggregated | DSL | 2,735 | 113,420 | 13,041 | 2.24 |
| FRESNO | 2021 | LDA | Aggregated | Aggregated | ELEC | 5,772 | 228,950 | 28,804 | 0.00 |
| FRESNO | 2021 | LDT1 | Aggregated | Aggregated | GAS | 39,100 | 1,354,857 | 175,755 | 52.13 |
| FRESNO | 2021 | LDT1 | Aggregated | Aggregated | DSL | 30 | 419 | 94 | 0.02 |
| FRESNO | 2021 | LDT1 | Aggregated | Aggregated | ELEC | 130 | 5,483 | 660 | 0.00 |
| FRESNO | 2021 | LDT2 | Aggregated | Aggregated | GAS | 129,640 | 4,712,300 | 596,970 | 198.00 |
| FRESNO | 2021 | LDT2 | Aggregated | Aggregated | DSL | 548 | 23,833 | 2,687 | 0.64 |
| FRESNO | 2021 | LDT2 | Aggregated | Aggregated | ELEC | 713 | 23,801 | 3,620 | 0.00 |
| FRESNO | 2021 | LHD1 | Aggregated | Aggregated | GAS | 10,625 | 355,805 | 158,292 | 42.96 |
| FRESNO | 2021 | LHD1 | Aggregated | Aggregated | DSL | 10,657 | 371,709 | 134,049 | 21.02 |
| FRESNO | 2021 | LHD2 | Aggregated | Aggregated | GAS | 1,825 | 59,953 | 27,197 | 8.32 |
| FRESNO | 2021 | LHD2 | Aggregated | Aggregated | DSL | 3,629 | 128,355 | 45,643 | 8.14 |
| FRESNO | 2021 | MCY | Aggregated | Aggregated | GAS | 18,423 | 148,923 | 36,847 | 3.94 |
| FRESNO | 2021 | MDV | Aggregated | Aggregated | GAS | 124,849 | 4,140,988 | 564,004 | 215.18 |
| FRESNO | 2021 | MDV | Aggregated | Aggregated | DSL | 2,106 | 86,519 | 10,154 | 3.20 |
| FRESNO | 2021 | MDV | Aggregated | Aggregated | ELEC | 312 | 10,760 | 1,602 | 0.00 |
| FRESNO | 2021 | MH | Aggregated | Aggregated | GAS | 1,760 | 15,221 | 176 | 3.21 |
| FRESNO | 2021 | MH | Aggregated | Aggregated | DSL | 723 | 6,310 | 72 | 0.65 |
| FRESNO | 2021 | Motor Coach | Aggregated | Aggregated | DSL | 60 | 7,771 | 873 | 1.24 |
| FRESNO | 2021 | OBUS | Aggregated | Aggregated | GAS | 344 | 17,738 | 6,881 | 3.81 |
| FRESNO | 2021 | PTO | Aggregated | Aggregated | DSL | 0 | 14,761 | 0 | 3.01 |
| FRESNO | 2021 | SBUS | Aggregated | Aggregated | GAS | 87 | 4,895 | 348 | 0.53 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| FRESNO | 2021 | SBUS | Aggregated | Aggregated | DSL | 1,107 | 34,722 | 12,770 | 4.37 |
| FRESNO | 2021 | T6 Ag | Aggregated | Aggregated | DSL | 71 | 987 | 311 | 0.11 |
| FRESNO | 2021 | T6 CAIRP heavy | Aggregated | Aggregated | DSL | 149 | 29,407 | 2,182 | 2.67 |
| FRESNO | 2021 | T6 CAIRP small | Aggregated | Aggregated | DSL | 78 | 4,096 | 1,142 | 0.39 |
| FRESNO | 2021 | T6 instate construct | Aggregated | Aggregated | DSL | 517 | 35,208 | 2,339 | 4.38 |
| FRESNO | 2021 | T6 instate construct | Aggregated | Aggregated | DSL | 2,198 | 113,732 | 9,937 | 14.06 |
| FRESNO | 2021 | T6 instate heavy | Aggregated | Aggregated | DSL | 1,869 | 241,522 | 21,566 | 24.86 |
| FRESNO | 2021 | T6 instate small | Aggregated | Aggregated | DSL | 4,091 | 205,725 | 47,215 | 21.86 |
| FRESNO | 2021 | T6 OOS heavy | Aggregated | Aggregated | DSL | 85 | 16,841 | 1,241 | 1.53 |
| FRESNO | 2021 | T6 OOS small | Aggregated | Aggregated | DSL | 46 | 2,383 | 670 | 0.23 |
| FRESNO | 2021 | T6 Public | Aggregated | Aggregated | DSL | 522 | 7,851 | 1,582 | 1.13 |
| FRESNO | 2021 | T6 utility | Aggregated | Aggregated | DSL | 110 | 1,853 | 1,266 | 0.21 |
| FRESNO | 2021 | T6TS | Aggregated | Aggregated | GAS | 926 | 51,880 | 18,530 | 10.96 |
| FRESNO | 2021 | T7 Ag | Aggregated | Aggregated | DSL | 54 | 831 | 238 | 0.15 |
| FRESNO | 2021 | T7 CAIRP | Aggregated | Aggregated | DSL | 2,654 | 471,356 | 38,752 | 70.77 |
| FRESNO | 2021 | T7 CAIRP constructi | Aggregated | Aggregated | DSL | 140 | 25,290 | 633 | 4.40 |
| FRESNO | 2021 | T7 NNOOS | Aggregated | Aggregated | DSL | 2,864 | 574,611 | 41,821 | 83.05 |
| FRESNO | 2021 | T7 NOOS | Aggregated | Aggregated | DSL | 1,042 | 185,194 | 15,216 | 28.46 |
| FRESNO | 2021 | T7 other port | Aggregated | Aggregated | DSL | 54 | 8,643 | 410 | 1.58 |
| FRESNO | 2021 | T7 POAK | Aggregated | Aggregated | DSL | 285 | 32,756 | 2,165 | 6.26 |
| FRESNO | 2021 | T7 POLA | Aggregated | Aggregated | DSL | 266 | 33,510 | 2,022 | 6.44 |
| FRESNO | 2021 | T7 Public | Aggregated | Aggregated | DSL | 771 | 15,576 | 2,337 | 2.85 |
| FRESNO | 2021 | T7 Single | Aggregated | Aggregated | DSL | 1,038 | 74,341 | 11,975 | 12.03 |
| FRESNO | 2021 | T7 single constructi | Aggregated | Aggregated | DSL | 892 | 62,740 | 4,034 | 11.81 |
| FRESNO | 2021 | T7 SWCV | Aggregated | Aggregated | DSL | 431 | 17,588 | 1,681 | 7.25 |
| FRESNO | 2021 | T7 SWCV | Aggregated | Aggregated | NG | 64 | 2,604 | 249 | 1.14 |
| FRESNO | 2021 | T7 tractor | Aggregated | Aggregated | DSL | 5,015 | 685,160 | 63,685 | 95.18 |
| FRESNO | 2021 | T7 tractor construct | Aggregated | Aggregated | DSL | 745 | 51,755 | 3,369 | 9.81 |
| FRESNO | 2021 | T7 utility | Aggregated | Aggregated | DSL | 36 | 722 | 409 | 0.12 |
| FRESNO | 2021 | T7IS | Aggregated | Aggregated | GAS | 4 | 473 | 72 | 0.12 |
| FRESNO | 2021 | UBUS | Aggregated | Aggregated | GAS | 78 | 6,764 | 314 | 1.52 |
| FRESNO | 2021 | UBUS | Aggregated | Aggregated | DSL | 20 | 2,068 | 80 | 0.27 |
| FRESNO | 2021 | UBUS | Aggregated | Aggregated | NG | 120 | 13,413 | 478 | 3.09 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 28,680,193 | | 1,453 |
| | | | | | | | | | 1,452,933 |
| Overall Fuel Economy All Fuels | | | | | | MPG | 19.74 | | |
| **LHDT Truck Only Fleet Average Fuel Economy** | | | | | | | | | |
| FRESNO | 2021 | LHD1 | Aggregated | Aggregated | GAS | 10,625 | 355,805 | 158,292 | 42.96 |
| FRESNO | 2021 | LHD1 | Aggregated | Aggregated | DSL | 10,657 | 371,709 | 134,049 | 21.02 |
| FRESNO | 2021 | LHD2 | Aggregated | Aggregated | GAS | 1,825 | 59,953 | 27,197 | 8 |
| FRESNO | 2021 | LHD2 | Aggregated | Aggregated | DSL | 3,629 | 128,355 | 45,643 | 8 |
| | | | | | | | 915,822 | | 80.45 |
| | | | | | | MPG | 11.4 | | 80,450 |
| FRESNO | 2021 | T7 tractor | Aggregated | Aggregated | DSL | 5,015 | 685,160 | 63,685 | 95.18 |
| Truck Fleet Fuel Efficiency | | | | | | MPG | 7.20 | | 95,183 |
| **Passenger Car and Light Truck Fleet Efficiency** | | | | | | | | | |
| FRESNO | 2021 | LDA | Aggregated | Aggregated | GAS | 360,187 | 13,826,269 | 1,691,919 | 450.58 |
| FRESNO | 2021 | LDA | Aggregated | Aggregated | DSL | 2,735 | 113,420 | 13,041 | 2.24 |
| FRESNO | 2021 | LDA | Aggregated | Aggregated | ELEC | 5,772 | 228,950 | 28,804 | 0.00 |
| FRESNO | 2021 | LDT1 | Aggregated | Aggregated | GAS | 39,100 | 1,354,857 | 175,755 | 52.13 |
| FRESNO | 2021 | LDT1 | Aggregated | Aggregated | DSL | 30 | 419 | 94 | 0.02 |
| FRESNO | 2021 | LDT1 | Aggregated | Aggregated | ELEC | 130 | 5,483 | 660 | 0.00 |
| FRESNO | 2021 | LDT2 | Aggregated | Aggregated | GAS | 129,640 | 4,712,300 | 596,970 | 198.00 |
| FRESNO | 2021 | LDT2 | Aggregated | Aggregated | DSL | 548 | 23,833 | 2,687 | 0.64 |
| FRESNO | 2021 | LDT2 | Aggregated | Aggregated | ELEC | 713 | 23,801 | 3,620 | 0.00 |
| FRESNO | 2021 | MDV | Aggregated | Aggregated | GAS | 124,849 | 4,140,988 | 564,004 | 215.18 |
| FRESNO | 2021 | MDV | Aggregated | Aggregated | DSL | 2,106 | 86,519 | 10,154 | 3.20 |
| FRESNO | 2021 | MDV | Aggregated | Aggregated | ELEC | 312 | 10,760 | 1,602 | 0.00 |
| | | | | | | | 24,527,598 | | 921.99 |
| | | | | | | | | | 921,987 |
| Passenger Car and Light Truck Fleet Efficiency | | | | | | MPG | 26.60 | | |

# Appendix A: Stationary Source Modeling

## Stationary Source Modeling Assumptions

**13 Natural Gas Dryers**

| | | | | |
|---|---|---|---|---|
| Number of Units Installed | 13 | | | |
| Fuel Rates/Unit | 27 | MMbtu/hr | | |
| Load Factor | 1 | | | |
| Natural Gas/Facility/Day | 6,923,571 | | 6.92 | |
| Days Operated/Year | 42 | | | |
| Annual Nat Gas Use | 290,790,000 | CF/Year | 290.79 | Million CF/year |
| MTCO2e/Year | 15,447 | | | |

Dryer specifications provided by the applicant.
1 cf of natural gas = 1,000 BTU

**Natural Gas Emission Factors**

| | | | Lb/MMscf | | |
|---|---|---|---|---|---|
| | **Nox** | **SOx** | **PM10** | **CO** | **VOC** |
| Emission Factors | 83.2 | 2.85 | 2.8 | 21 | 3.8 |
| | | | | | |
| Emissions (lbs/year) | 24,193.73 | 828.75 | 814.21 | 6,106.59 | 1,105.00 |
| Emissions (tons/year) | **12.10** | **0.41** | **0.41** | **3.05** | **0.55** |
| Emissions Max (lbs/hr) | 24.00 | 0.82 | 0.81 | 6.06 | 1.10 |
| Emissions (lbs/day) | 576.04 | 19.73 | 19.39 | 145.40 | 26.31 |

| | **kg/1000 cf** | **kg/MMscf** | **MTCO2/year** |
|---|---|---|---|
| CO2 Emission Factor for Natural Gas | **53.12** | **53,120.00** | **15,446.8** |

CO2 emission factor from US EIA CO2 Emission Coefficients
Emission factors from SJVAPCD permit for Paramount Farms Pistachio Plant.

**Nut Warmer and Roaster**

| | | | |
|---|---|---|---|
| Procotor Warmer (Btu/hr) | 1,200,000 | | |
| Procotor Roaster (Btu/hr | 4,350,000 | | |

1 cf of natural gas = 1,000 BTU

| | | | |
|---|---|---|---|
| Roasted Pistachio Throughput (lbs/yr) | 120,000,000 | | |
| Roasted Goods (15%) (lbs/yr | 18,000,000 | | |
| Roaster Capacity (lbs/hr) | 4,000 | | |
| Roasting Hours/Year | 4,500 | | |
| Max Daily Hours Oct-Dec 88 days | 22 | 1,936 | |
| Max Daily Hours Jan-Aug 214 days | 12 | 2,568 | |
| Hours/Year | | 4,504 | |

**Roaster and Warmer Natural Gas Usage**

| | | | |
|---|---|---|---|
| Natural Gas Used per year (CF/yr | 26,196,000 | 26.196 | MMCF |
| Natural Gas Used per Day -42 days/year | | | |

Natural gas usage provided by Project Energy Consultant

| | **kg/1000 cf** | **kg/MMscf** | **MTCO2/year** |
|---|---|---|---|
| CO2 Emission Factor for Natural Gas | **53.12** | **53,120.00** | **1,391.5** |

CO2 emission factor from US EIA CO2 Emission Coefficients

**Warmer and Roaster Emission Estimates**

| | | | Lb/MMscf | | |
|---|---|---|---|---|---|
| | **VOC** | **Nox** | **CO** | **SOx** | **PM10** |
| Emission Factors | 3.80 | 83.20 | 21.00 | 2.85 | 2.80 |
| Warmer and Roaster Pounds/Day (300 days/yr) | **0.33** | **7.27** | **1.83** | **0.25** | **0.24** |
| Warmer and Roaster (lbs/year) | **99.54** | **2179.51** | **550.12** | **74.66** | **73.35** |
| Warmer and Roaster (tons/year) | **0.05** | **1.09** | **0.28** | **0.04** | **0.04** |
| Warmer Max lbs/hour | **0.08** | **40.26** | **2.56** | **0.05** | **0.05** |

Emission factors from SJVAPCD Permit for Roasters at Paramount Farms Permit S-377-50-0

**Stationary IC Engine**

| | **HP** | **KW** | **Hours/Year** | | |
|---|---|---|---|---|---|
| Emergency Diesel Generator | 170 | 250 | 100 | | |
| Operating Hours/Year (each) | 50 | | | 0.7457 | convert g/kwh to g/hp-hr |
| HP | 170 | | | | |
| 1.3410 HP/kW | | | | | |
| | **ROG** | **Nox** | **CO** | **PM10** | **PM2.5** |
| Emission Factors (g/hp-hr) | 0.14 | 2.66 | 0.7 | 0.019 | 0.019 |
| Horsepower | 170 | | | | |
| Load Factor | 0.74 | | | | |
| Hours/Year | 100 | | | | |
| Emissions g/year | 1,761 | 33,463 | 8,806 | 235 | 235 |
| **Emissions tons/year** | **0.0019** | **0.0369** | **0.0097** | **0.0003** | **0.0003** |
| | | | | | **lbs/hr** |
| Emissions Pounds/Year | **3.8828** | **73.7728** | **19.4139** | **0.5170** | **0.5170** |
| Emissions Pounds/Day (12 days/year) | 0.3236 | 6.1477 | 1.6178 | 0.0431 | 0.0431 | 0.0018 |
| g to ton Conversion Factor | 907,185 | | | | |

Emission factors from EPA Tier 3 Emission Standards

| | | | | | |
|---|---|---|---|---|---|
| Generator GHG Emissions | Gal./Hour | | | | |
| **Fuel Consumption 175 hp Diesel** | 9.7 | | | | |
| Lbs CO2 Emissions/Gallon | **19.6** | | | | |
| Hours/year | 100 | | | | |
| CO2 emissions per year (lbs) | 19012 | | | | |
| MTCO2 | 8.62 | | | | |
| | | | | | |
| Pound to MT Conversion Factor | 0.000453592 | | | | |
| | **ROG** | **Nox** | **CO** | **PM10** | **PM2.5** |
| Natural Gas Fueled Column Dryers | 0.55 | 12.1 | 3.05 | 0.41 | 0.41 |
| Natural Gas Warmer and Roaster | 0.05 | 1.09 | 0.28 | 0.04 | 0.04 |
| Diesel Emergency Generator (170 hp) | 0.0019 | 0.0369 | 0.0097 | 0.0003 | 0.0003 |
| Total | 0.60 | 13.23 | 3.34 | 0.45 | 0.45 |
| Offsets Required | | 3.2269 | | | |

# Appendix A: Refrigerant Emission Calculations

# Air Conditioning Fugitive Emissions

Project: Kamm Avenue Pistachio Plant
Prepared by: Mitchell Air Quality Consulting
Prepared on: 8-Nov-19

| Type of Unit | Units | Capacity of Unit (pounds) | Capacity of Unit (kg) | Annual Leak Rate in percent of capacity | Emissions (kg/year) | Emissions (tons/year) | Global Warming Potential (R410a) | MTCO2e per year |
|---|---|---|---|---|---|---|---|---|
| **Without Regulations** | | | | | | | | |
| Packaged chiller air conditioning (medium) | 4.0 | 526 | 239 | 7% | 67 | 0.07 | 1725 | 115 |
| **Total** | | | | | | **0.07** | | **115** |
| | | | | | | | | |
| **With Regulation and Mitigation** | | | | | | | | |
| Packaged chiller air conditioning (medium) | 4.0 | 526 | 239 | 4% | 33 | 0.04 | 1725 | 58 |
| **Total** | | | | | | **0.04** | | **58** |
| | | | | | | | Reduction from Regulations | 50.0% |

Sources:
- U.S. Environmental Protection Agency, Climate Leaders. May 2008. Direct HFC and PFC Emissions from Use of Refrigeration and Air Conditioning Equipment. EPA430-K-03-004. http://www.epa.gov/stateply/documents/resources/mfgrfg.pdf
- California Air Resources Board. Appendix B, California Facilities and Greenhouse Gas Emissions Inventory - High-Global Warming Potential Stationary Source Refrigerant Management Program. www.arb.ca.gov/cc/reftrack/APPENDIX_B_10_22_.pdf
- With regulation refers to a change in the annual leak rate pursuant to California Air Resources Board Stationary Equipment Refrigerant Management Program. http://www.arb.ca.gov/cc/reftrack/reftrack.htm
- Source of number of units: It was assumed that there would be one HVAC unit per 5,000 square feet.
- Source of global warming potential: http://www.engineeringtoolbox.com/Refrigerants-Environment-Properties-d_1220.html and http://www.engineeringtoolbox.com/refrigerants-properties-d_145.html

# Appendix A: Offroad Equipment

## Offroad Equipment Emissions

| | Harvest | Off Season |
|---|---|---|
| Propane Forklifts | 4 | 1 |
| Golf Carts (electric) | 1 | 1 |
| Trucks per day during Non Harvest | 6 | 25 |
| Trucks Per Day during Harvest | 150 | 150 |

| Yard Dogs (trucks) | Units | Weeks/Yr | Days/Week | Trucks per Day | Trailers Moved/Yard Dog/Day | Trailer Moves/Year | RT Distance per Trip | Distance/ Day (Miles) | Total Miles/Year 2021 | Peak Miles/Day |
|---|---|---|---|---|---|---|---|---|---|---|
| Harvest | 8 | 6 | 7 | 150 | 18.75 | 6300 | 0.5 | 75 | 3,150 | 75 |
| Non Harvest | 1 | 46 | 5 | 6 | 6 | 230 | 0.5 | 3 | 115 | |
| | | | | | | | | | **3,265** | |
| Tractors (harvest) | 4 | | | | | | | | | |

**Propane Forklift Modeling Assumptions**

| Hours of Operation | Harvest | Off Season | Total |
|---|---|---|---|
| Hours per Week | 80 | 40 | |
| Number of Forkifts | 4 | 1 | |
| Total Hours/Week | 320 | 40 | |
| Hours/Year | 1920 | 1840 | 3760 |
| Hours/Gallon | 3.57 | 3.57 | |
| Gallons Per year | 6,854.4 | 6,568.8 | 13,423.2 |
| Gallons per Hour | 3.6 | | |
| 1,000 Gal/Hour | 0.00357 | | |
| | | | |
| Toyota Forklift Fuel Consumption and Efficiency | | 3.57 | |

**Forklift Emissions per Year**

| | g/bhp-hr | Hours/year | Load Factor | HP | Emissions (g/year) | Emissions lbs/year | Tons/Year | Emission lbs/day |
|---|---|---|---|---|---|---|---|---|
| ROG | 0.388 | 3,760.0 | 0.2 | 97 | 28,302.27 | 62.40 | **0.0312** | 0.1709 |
| Nox+HC | 0.6 | 3,760.0 | 0.2 | 97 | 43,766.40 | 96.49 | **0.0482** | 0.2644 |
| CO | 37 | 3,760.0 | 0.2 | 97 | 2,698,928.00 | 5,950.11 | **2.9751** | 16.3017 |

| | Tons | T/MT Conv | MTCO2 |
|---|---|---|---|
| CO2 | 83.8950 | 0.9072 | 76.109544 |

ROG from Air District Priortization Spreadsheet
Nox and HC and CO from current ARB emission standards for large spark ignited engines

**Propane Emission Calculation for PM**

| | |
|---|---|
| PM Emissions lbs/1,000 gal | 0.7 |
| Gallons/Year | 6,854.40 |
| Annual PM Emissions (lbs/year) | 4.80 |
| Annual PM Emissions (tons/year) | 0.002 |
| PM Emissions lbs/day | 0.018 |

**Propane Emission Calculations for CO2**

| | |
|---|---|
| CO2 Emissions lbs/1000 gal | 12,500 |
| Gallons/Year | 13,423.20 |
| CO2 Emissions lbs/year | 167,790.00 |
| CO2 Emissions tons/year | 83.90 |
| **MTCO2/Year** | **76.11** |

Emisson Factor Documentation for AP-42 Section 1.5 Liquefied Petroleum Gas Combustion 1993

| | | | | | CO2 tons/year | CH4 Tons/year | N2O tons/year | MTCO2e |
|---|---|---|---|---|---|---|---|---|
| **Emission Calculations BAU** | **CO2** | **CH4** | **N2O** | 2005 | 15.763 | 0.002 | 0.002 | 14.85 |
| Annual Emissions lbs/Year | 23,848.66 | 3.79 | 3.74 | 2021 | 14.593 | 0.000 | 0.002 | 13.70 |
| Annual Running Emissions tons/year | 11.924 | 0.002 | 0.002 | 2030 | 12.594 | 0.000 | 0.001 | 11.80 |
| Annual Idling Emission tons/yr | 3.838 | 0 | 0 | | | | | |
| Total Yard Truck Emissions tons/yr | **15.763** | **0.002** | **0.002** | | | | | |

| **Emission Calculations 2030** | **CO2** | **CH4** | **N2O** |
|---|---|---|---|
| Annual Emissions lbs/Year | 17,512.18 | 0.03 | 2.75 |
| Annual Running Emissions tons/year | 8.756 | 0.000 | 0.001 |
| Annual Idling Emission tons/yr | 3.838 | 0 | 0 |
| Total Yard Truck Emissions tons/yr | **12.594** | **0.000** | **0.001** |

| | | | | | | Pollutant | grams/hour | g/year | g/day | Max lbs/day | Max Lbs/hr | Tons/Year | lbs/year |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | HC | 1.905673 | 1,078.61 | 15.25 | 0.034 | | 0.001 | |
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | CO | 31.55717 | 17,861.36 | 252.46 | 0.557 | | 0.020 | |
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | NOx | 32.96962 | 18,660.80 | 263.76 | 0.581 | | 0.021 | |
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | PM | 0.019894 | 11.2600 | 0.16 | 0.000 | | 0.000 | |
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | ROG | 2.413345 | 1365.9533 | 19.31 | 0.043 | | 0.002 | |
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | CO2 | 6152.076 | 3,482,075.02 | 49,216.61 | 108.504 | | 3.838 | |
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | CH4 | 0.112094 | 63.4452 | 0.90 | 0.002 | | 0.000 | |
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | PM10 | 0.019775 | 11.1927 | 0.16 | 0.000 | 0.00001 | 0.000 | 0.024676 |
| IDLEX | 2022 | Annual | Fresno (SJV) | T7 Tractor | Dsl | PM2_5 | 0.018919 | 10.7082 | 0.15 | 0.000 | | 0.000 | |

Emission factors form EMFAC 2017

**Tractor Modeling Assumptions**

**Hours of Operation**

| | |
|---|---|
| Tractors During Harvest Season | 4 |
| Hours Use Per Day | 12 |
| Weeks/Year | 6 |
| Total Hours | **2016** |

**Tractor Emissions per Year**

| | g/bhp-hr | Hours/year | Load Factor | HP | Emissions (g/year) | Emissions lbs/year | Tons/Year | Emission lbs/day | Max Lbs/hr |
|---|---|---|---|---|---|---|---|---|---|
| ROG | 0.345 | 2016 | 0.37 | 97 | 24,962.21 | 55.03 | **0.0275** | 6.33 | |
| Nox | 2.078 | 2016 | 0.37 | 97 | 150,352.11 | 331.47 | **0.1657** | 38.14 | |
| PM2.5 | 0.169 | 2016 | 0.37 | 97 | 12,227.87 | 26.96 | **0.0135** | 3.10 | 0.129249722 |
| PM10 | 0.169 | 2016 | 0.37 | 97 | 12,227.87 | 26.96 | **0.0135** | 3.10 | 0.129249722 |
| CO | 3.275 | 2016 | 0.37 | 97 | 236,960.14 | 522.41 | **0.2612** | 60.11 | |
| CO2 | 568.29 | 2016 | 0.37 | 97 | 41,118,191.05 | 90,649.99 | **45.3250** | 10,430.96 | |
| CH4 | 0.039 | 2016 | 0.37 | 97 | 2,821.82 | 6.22 | **0.0031** | 0.72 | |

| | |
|---|---|
| Load Factor (percent) | 37 |

| | Tons | T/MT Conv |
|---|---|---|
| CO2 | 45.3250 | 0.9072 |
| CH4 (25 gwp) | 0.077762882 | |
| **MTCO2e** | **41.1894** | |

**Offroad Emission Summary 2021** Tons/Year

| | ROG | Nox | CO | PM10 | PM2.5 | CO2 | CH4 | N2O | MTCO2e 2021 | MTCO2e BAU | MTCO2e 2030 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Yard Dogs | 0.0052 | 0.0657 | 0.0300 | 0.0251 | 0.0004 | 14.59 | 0.000 | 0.002 | 13.70 | 14.85 | 11.80 |
| Tractors | 0.0275 | 0.1657 | 0.2612 | 0.0135 | 0.0135 | 45.32 | 0.0000 | 0 | 41.19 | 41.19 | 41.19 |
| Propane Forklifts | 0.0312 | 0.0482 | 2.9751 | 0.0000 | 0.0000 | 83.90 | 0 | 0 | 76.11 | 76.11 | 76.11 |
| **Total** | **0.0639** | **0.2797** | **3.2663** | **0.0386** | **0.0139** | **143.81** | **0.0002** | **0.002** | **131.00** | 132.15 | 129.10 |

**Offroad Max Daily Emissions Calculations 2021** Lbs/Day

| | ROG | Nox | CO | PM10 | PM2.5 |
|---|---|---|---|---|---|
| Yard Dogs Running Emissions | 0.17 | 2.07 | 0.48 | 0.02 | 0.02 |
| Yard Dogs Idling Emissions | 0.034 | 0.581 | 0.557 | 0.000 | 0.000 |
| Tractors | 6.33 | 38.14 | 60.11 | 3.10 | 3.10 |
| Propane Forklifts | 0.1709 | 0.2644 | 16.3017 | 0.018 | 0.018 |
| **Total** | **6.70** | **41.06** | **77.45** | **3.14** | **3.14** |

# Appendix A: Health Risk Screening Analysis

## Health Risk Priortization Screening

**Diesel Truck Trips**

| | | | |
|---|---|---|---|
| Average Daily Truck Trips | **64.07** | | |
| Trucks Onsite Per Day | 32.04 | | |
| Max Daily Trucks Onsite | 171 | 5.3 | Max Daily Ratio |
| Idling Time per Event (min.) | 15 | | |
| Average Distance Onsite (ft) | 6,608 | | |
| Idling Minutes/Day | 481 | | |

| | Miles/Trip | Trips/Year | Miles/Year | Speed (mph) |
|---|---|---|---|---|
| Offsite Miles Estimate | 0.5 | 11,693 | 5,846 | 5-25 |

| | | Distance Onsite (ft) | Idling Min/Year | Idling Emission (g/year) | Idling Emissions (lbs/year) | Running Emissions (lbs/yr) | Total Truck Emissions (lbs/year) | Grand Total (lbs/yr) | Average Lbs/Day | Max Lbs/Day* | Max Hrs/day |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Loading Area | 1 | 6608 | 175,392 | 57.81 | 0.13 | 0.33 | **0.46** | 0.46 | 0.00125 | 0.00627 | 0.00026 |
| Total Distance (feet) | | 6608 | **175,392** | | | | | | | | |

*Max daily assumed to be 5 times the daily average

| | |
|---|---|
| Total Travel Distance per day (Miles) | 40.09 |
| Total Travel Distance per year (miles) | 14,634 |
| Idling Emission Rate for Diesel (g/hr) | 0.019775 |
| g/lb conversion factor | 0.00220 |
| HDT Running Emissions 5-15 mph g/mile | 0.01025 |
| HDT Running Emissions at 5-25 mph | 0.00891 |
| EMFAC 2017 PM10 running emissions at 5-15 mph in 2021 | |
| EMFAC 2017 Idling Rate for 2021 in Fresno County | |

**Running Emission Calculations**

| | Miles/year | Emission Factor (g/mi) | Emissions (grams/year) | Emission Lbs/year | Idling Emissions lbs/year | Total Truck Emission (lbs/year) | Receptor Distance (meters) |
|---|---|---|---|---|---|---|---|
| Onsite Emissions from HDT Travel | 14,634 | 0.01025 | 149.96 | 0.3306 | 0.1274 | 0.4581 | 1656 |
| Offsite Emissions HDT within 1/2 mile | 5,846 | 0.00891 | 52.10 | 0.1149 | 0.0000 | 0.1149 | 1656 |
| Total | | | | | | **0.5729** | |

**Running Emissions**

| | | PM10_RUNEX |
|---|---|---|
| | 5 | 0.01193 |
| | 10 | 0.01049 |
| | 15 | 0.00831 |
| Average | | 0.01025 |

| | | PM10_RUNEX |
|---|---|---|
| | 5 | 0.01193 |
| | 10 | 0.01049 |
| | 15 | 0.00831 |
| | 20 | 0.00706 |
| | 25 | 0.00675 |
| Average | | 0.00891 |

| Diesel Tractor Emissions | Lbs/Year | Max Lbs/hr |
|---|---|---|
| Tractors (4 Harvest Only) | 26.96 | 0.032 |

| Yard Truck Emissions | Lbs/Year | Max Lbs/hr |
|---|---|---|
| Yard Trucks Running | 0.880 | 0.000873016 |
| Yard Trucks Idling | 0.025 | 2.44797E-05 |
| **Total for Yard Trucks** | **0.905** | **0.000897496** |
| | | |
| Total Off-Road Diesel | 27.865 | 0.032897496 |
| Total On Road Diesel | 0.573 | 0.00026 |
| **Grand Total for Screening** | **28.438** | **0.03316** |
| | | |
| Onsite Propane Forklift 250-500 M | 0.03 | 0.003 |
| Offsite Emissions 500-100 M | 0.01 | 0.000 |
| | **0.04** | **0.003** |

| | | |
|---|---|---|
| Distance to Sensitive Receptor on W. Kamm Avenue | 1,656 Meters | West |
| Distance to Sensitive Receptor in Cantua Creek | 1,887 Meters | Southeast |

| | Fuel Use MMCF/year | Fuel Use (mmscf/day) | Fuel Use Max mmscs/hr |
|---|---|---|---|
| Dryers | 290.79 | 6.923571429 | 0.2885 |
| Warmer and Roaster | 26.1960 | 0.1221 | 0.0056 |

Fuel use from project Energy Consultant
NG 10-100 MMBTU/Hr External Combustion

| | |
|---|---|
| District Toxic Profile ID | 6 |
| Description | NG 10-100 MMBTU/Hr External Combustion |
| Source | The emission factors are from the table, "Natural Gas Fired External Combustion Equipment" in the May 2001 update of VCAPCD AB 2588 Combustion Emission Factors. |

| Pollutant Name | Emission Factor | Emission Factor Units | Emissions (lbs/year) | Maximum Hourly (lbs/hr) | CAS# |
|---|---|---|---|---|---|
| Acetaldehyde | 3.10E-03 | lb/mmscf | 9.01E-01 | 8.94E-04 | 75070 |
| Acrolein | 2.70E-03 | lb/mmscf | 7.85E-01 | 7.79E-04 | 107028 |
| Benzene | 5.80E-03 | lb/mmscf | 1.69E+00 | 1.67E-03 | 71432 |
| Ethyl benzene | 6.90E-03 | lb/mmscf | 2.01E+00 | 1.99E-03 | 100414 |
| Formaldehyde | 1.23E-02 | lb/mmscf | 3.58E+00 | 3.55E-03 | 50000 |
| Hexane | 4.60E-03 | lb/mmscf | 1.34E+00 | 1.33E-03 | 110543 |
| Naphthalene | 3.00E-04 | lb/mmscf | 8.72E-02 | 8.65E-05 | 91203 |
| PAHs, total, w/o individ. components reported | 1.00E-04 | lb/mmscf | 2.91E-02 | 2.88E-05 | 1151 |
| Propylene | 5.30E-01 | lb/mmscf | 1.54E+02 | 1.53E-01 | 115071 |
| Toluene | 2.65E-02 | lb/mmscf | 7.71E+00 | 7.64E-03 | 108883 |
| Xylenes (mixed) | 1.97E-02 | lb/mmscf | 5.73E+00 | 5.68E-03 | 1330207 |

SJVAPCD AB 2588 Toxic Profiles

**Warmer and Roaster NG Emissions**

| Pollutant Name | Emission Factor | Emission Factor Units | Emissions (lbs/year) | Maximum Hourly (lbs/hr) | CAS# |
|---|---|---|---|---|---|
| Acetaldehyde | 3.10E-03 | lb/mmscf | 8.12E-02 | 1.72E-05 | 75070 |
| Acrolein | 2.70E-03 | lb/mmscf | 7.07E-02 | 1.50E-05 | 107028 |
| Benzene | 5.80E-03 | lb/mmscf | 1.52E-01 | 3.22E-05 | 71432 |
| Ethyl benzene | 6.90E-03 | lb/mmscf | 1.81E-01 | 3.83E-05 | 100414 |
| Formaldehyde | 1.23E-02 | lb/mmscf | 3.22E-01 | 6.83E-05 | 50000 |
| Hexane | 4.60E-03 | lb/mmscf | 1.21E-01 | 2.55E-05 | 110543 |
| Naphthalene | 3.00E-04 | lb/mmscf | 7.86E-03 | 1.67E-06 | 91203 |
| PAHs, total, w/o individ. components reported | 1.00E-04 | lb/mmscf | 2.62E-03 | 5.55E-07 | 1151 |
| Propylene | 5.30E-01 | lb/mmscf | 1.39E+01 | 2.94E-03 | 115071 |
| Toluene | 2.65E-02 | lb/mmscf | 6.94E-01 | 1.47E-04 | 108883 |
| Xylenes (mixed) | 1.97E-02 | lb/mmscf | 5.16E-01 | 1.09E-04 | 1330207 |

SJVAPCD AB 2588 Toxic Profiles

| Diesel Emergency Generator | Pounds/Year | Max Hourly (lbs/hr) |
|---|---|---|
| Emissions | 0.5170 | 0.0018 |

**Stationary Source Risk Score**

| | Cancer Score | Chronic Score | Acute Score |
|---|---|---|---|
| Natural Gas Dryers | 0.0015 | 0.0001 | 0.0001 |
| Natural Gas Warmer and Roaster | 0.0002 | 0.0000 | 0.0001 |
| **Total Risk from Natural Gas** | **0.0017** | **0.0002** | **0.0001** |

| | Cancer Score | Chronic Score | Acute Score |
|---|---|---|---|
| Risk from Mobile Diesel | 0.1310 | 0.0004 | 0 |
| Risk from Diesel Emergency Generat | 0.00239 | 0.00031 | 0 |
| **Total Risk All Sources** | **0.1351** | **0.0009** | **0.0001** |

**Kamm Avenue Pistachios** **Prioritization Calculator**

| | | | |
|---|---|---|---|
| **Applicability** | Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in grey areas. | | |
| *Author or updater* | Matthew Cegielski | *Last Update* | October 13, 2016 |
| **Facility:** | Kamm Ave Pistachio Plant | | |
| **ID#:** | | | |
| **Project #:** | | | |
| **Unit and Process#** | Diesel | | |
| **Operating Hours hr/yr** | 4,380.00 | | |

| Receptor Proximity and Proximity Factors | | Cancer Score | Chronic Score | Acute Score | Max Score |
|---|---|---|---|---|---|
| **0< R<100** | **1.000** | 6.57E+01 | 1.95E-01 | 0.00E+00 | 6.57E+01 |
| **100≤R<250** | **0.250** | 1.64E+01 | 4.87E-02 | 0.00E+00 | 1.64E+01 |
| **250≤R<500** | **0.040** | 2.63E+00 | 7.79E-03 | 0.00E+00 | 2.63E+00 |
| **500≤R<1000** | **0.011** | 7.22E-01 | 2.14E-03 | 0.00E+00 | 7.22E-01 |
| **1000≤R<1500** | **0.003** | 1.97E-01 | 5.84E-04 | 0.00E+00 | 1.97E-01 |
| **1500≤R<2000** | **0.002** | 1.31E-01 | 3.89E-04 | 0.00E+00 | 1.31E-01 |
| **2000<R** | **0.001** | 6.57E-02 | 1.95E-04 | 0.00E+00 | 6.57E-02 |

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

**Diesel**

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritzation score for each substance generated below. Totals on last row.

| Substance | CAS# | Annual Emissions (lbs/yr) | Maximum Hourly (lbs/hr) | Average Hourly (lbs/hr) | Cancer | Chronic | Acute |
|---|---|---|---|---|---|---|---|
| **Diesel engine exhaust, particulate matter (Diesel PM)** | **9901** | 2.84E+01 | 3.29E-02 | 6.49E-03 | 6.57E+01 | 1.95E-01 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | **Totals** | **6.57E+01** | **1.95E-01** | **0.00E+00** |

Use the substance dropdown list in the CAS# Finder to locate CAS# of substances.

| Substance | CAS# Finder |
|---|---|
| Wood preservatives (containing arsenic and chromate) | 1206 |

**Kamm Avenue Pistachios** **Prioritization Calculator**

| | | | | |
|---|---|---|---|---|
| **Applicability** | Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in grey areas. | | | |
| *Author or updater* | Matthew Cegielski | *Last Update* | October 13, 2016 | |
| **Facility:** | Kamm Ave Pistachio Plant | | | |
| **ID#:** | | | | |
| **Project #:** | | | | |
| **Unit and Process#** | Emergency Generator | | | |
| **Operating Hours hr/yr** | 100.00 | | | |

| Receptor Proximity and Proximity Factors | | Cancer Score | Chronic Score | Acute Score | Max Score |
|---|---|---|---|---|---|
| **0< R<100** | **1.000** | 1.19E+00 | 1.55E-01 | 0.00E+00 | 1.19E+00 |
| **100≤R<250** | **0.250** | 2.99E-01 | 3.88E-02 | 0.00E+00 | 2.99E-01 |
| **250≤R<500** | **0.040** | 4.78E-02 | 6.20E-03 | 0.00E+00 | 4.78E-02 |
| **500≤R<1000** | **0.011** | 1.31E-02 | 1.71E-03 | 0.00E+00 | 1.31E-02 |
| **1000≤R<1500** | **0.003** | 3.58E-03 | 4.65E-04 | 0.00E+00 | 3.58E-03 |
| **1500≤R<2000** | **0.002** | 2.39E-03 | 3.10E-04 | 0.00E+00 | 2.39E-03 |
| **2000<R** | **0.001** | 1.19E-03 | 1.55E-04 | 0.00E+00 | 1.19E-03 |

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

**Diesel Emergency Generator**

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritzation score for each substance generated below. Totals on last row.

| Substance | CAS# | Annual Emissions (lbs/yr) | Maximum Hourly (lbs/hr) | Average Hourly (lbs/hr) | Cancer | Chronic | Acute |
|---|---|---|---|---|---|---|---|
| **Diesel engine exhaust, particulate matter (Diesel PM)** | **9901** | 5.17E-01 | 1.80E-03 | 5.17E-03 | 1.19E+00 | 1.55E-01 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | **Totals** | **1.19E+00** | **1.55E-01** | **0.00E+00** |

Use the substance dropdown list in the CAS# Finder to locate CAS# of substances.

| Substance | CAS# Finder |
|---|---|
| Wood preservatives (containing arsenic and chromate) | 1206 |

**Kamm Avenue Pistachio** **Prioritization Calculator**

| | | | |
|---|---|---|---|
| **Applicability** | Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in grey areas. | | |
| *Author or updater* | Matthew Cegielski | *Last Update* | October 13, 2016 |
| **Facility:** | Kamm Avenue Pistachio Plant | | |
| **ID#:** | | | |
| **Project #:** | | | |
| **Unit and Process#** | Natural Gas Dryers | | |
| **Operating Hours hr/yr** | 7,056.00 | | |

| Receptor Proximity and Proximity Factors | | Cancer Score | Chronic Score | Acute Score | Max Score |
|---|---|---|---|---|---|
| **0< R<100** | **1.000** | 7.53E-01 | 6.90E-02 | 3.35E-02 | 7.53E-01 |
| **100≤R<250** | **0.250** | 1.88E-01 | 1.73E-02 | 8.37E-03 | 1.88E-01 |
| **250≤R<500** | **0.040** | 3.01E-02 | 2.76E-03 | 1.34E-03 | 3.01E-02 |
| **500≤R<1000** | **0.011** | 8.29E-03 | 7.59E-04 | 3.68E-04 | 8.29E-03 |
| **1000≤R<1500** | **0.003** | 2.26E-03 | 2.07E-04 | 1.00E-04 | 2.26E-03 |
| **1500≤R<2000** | **0.002** | 1.51E-03 | 1.38E-04 | 6.70E-05 | 1.51E-03 |
| **2000<R** | **0.001** | 7.53E-04 | 6.90E-05 | 3.35E-05 | 7.53E-04 |

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

**Natural Gas Dryers**

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritzation score for each substance generated below. Totals on last row.

| Substance | CAS# | Annual Emissions (lbs/yr) | Maximum Hourly (lbs/hr) | Average Hourly (lbs/hr) | Cancer | Chronic | Acute |
|---|---|---|---|---|---|---|---|
| **Acetaldehyde** | **75070** | 9.01E-01 | 4.53E-05 | 1.28E-04 | 1.87E-02 | 1.37E-04 | 1.45E-04 |
| **Acrolein** | **107028** | 7.85E-01 | 3.95E-05 | 1.11E-04 | 0.00E+00 | 4.77E-02 | 2.37E-02 |
| **Benzene** | **71432** | 1.69E+00 | 8.48E-05 | 2.40E-04 | 3.77E-01 | 1.20E-02 | 4.71E-03 |
| **Ethyl benzene** | **100414** | 2.01E+00 | 1.01E-04 | 2.85E-04 | 3.87E-02 | 2.14E-05 | 0.00E+00 |
| **Formaldehyde** | **50000** | 3.58E+00 | 1.80E-04 | 5.07E-04 | 1.65E-01 | 8.46E-03 | 4.91E-03 |
| **Hexane** | **110543** | 1.34E+00 | 6.73E-05 | 1.90E-04 | 0.00E+00 | 4.07E-06 | 0.00E+00 |
| **Naphthalene** | **91203** | 8.72E-02 | 4.39E-06 | 1.24E-05 | 2.28E-02 | 2.06E-04 | 0.00E+00 |
| **PAHs, total, w/o individ. components reported [Treated as B(a)P for HRA]** | **1151** | 1.54E-02 | 1.46E-06 | 2.18E-06 | 1.30E-01 | 0.00E+00 | 0.00E+00 |
| **Propylene** | **115071** | 1.54E-02 | 7.75E-03 | 2.18E-06 | 0.00E+00 | 1.09E-07 | 0.00E+00 |
| **Toluene** | **108883** | 7.71E+00 | 3.88E-04 | 1.09E-03 | 0.00E+00 | 5.46E-04 | 1.57E-05 |
| **Xylene** | **1330207** | 5.73E+00 | 2.88E-04 | 8.12E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | **Totals** | **7.53E-01** | **6.90E-02** | **3.35E-02** |

Use the substance dropdown list in the CAS# Finder to locate CAS# of substances.

| Substance | CAS# Finder |
|---|---|
| Wood preservatives (containing arsenic and chromate) | 1206 |

**Kamm Avenue Pistachio** **Prioritization Calculator**

| | | | |
|---|---|---|---|
| **Applicability** | Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in grey areas. | | |
| *Author or updater* | Matthew Cegielski | *Last Update* | October 13, 2016 |
| **Facility:** | Kamm Avenue Pistachio Plant | | |
| **ID#:** | | | |
| **Project #:** | | | |
| **Unit and Process#** | Natural Gas Warmer and Roaster | | |
| **Operating Hours hr/yr** | 4,500.00 | | |

| Receptor Proximity and Proximity Factors | | Cancer Score | Chronic Score | Acute Score | Max Score |
|---|---|---|---|---|---|
| **0< R<100** | **1.000** | 7.82E-02 | 9.90E-03 | 3.35E-02 | 7.82E-02 |
| **100≤R<250** | **0.250** | 1.96E-02 | 2.48E-03 | 8.37E-03 | 1.96E-02 |
| **250≤R<500** | **0.040** | 3.13E-03 | 3.96E-04 | 1.34E-03 | 3.13E-03 |
| **500≤R<1000** | **0.011** | 8.60E-04 | 1.09E-04 | 3.68E-04 | 8.60E-04 |
| **1000≤R<1500** | **0.003** | 2.35E-04 | 2.97E-05 | 1.00E-04 | 2.35E-04 |
| **1500≤R<2000** | **0.002** | 1.56E-04 | 1.98E-05 | 6.70E-05 | 1.56E-04 |
| **2000<R** | **0.001** | 7.82E-05 | 9.90E-06 | 3.35E-05 | 7.82E-05 |

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

**Natural Gas Warmer and Roaster**

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritzation score for each substance generated below. Totals on last row.

| Substance | CAS# | Annual Emissions (lbs/yr) | Maximum Hourly (lbs/hr) | Average Hourly (lbs/hr) | Cancer | Chronic | Acute |
|---|---|---|---|---|---|---|---|
| **Acetaldehyde** | **75070** | 8.12E-02 | 4.53E-05 | 1.80E-05 | 1.69E-03 | 1.93E-05 | 1.45E-04 |
| **Acrolein** | **107028** | 7.07E-02 | 3.95E-05 | 1.57E-05 | 0.00E+00 | 6.74E-03 | 2.37E-02 |
| **Benzene** | **71432** | 1.52E-01 | 8.48E-05 | 3.38E-05 | 3.39E-02 | 1.69E-03 | 4.71E-03 |
| **Ethyl benzene** | **100414** | 1.81E-01 | 1.01E-04 | 4.02E-05 | 3.48E-03 | 3.01E-06 | 0.00E+00 |
| **Formaldehyde** | **50000** | 3.22E-01 | 1.80E-04 | 7.16E-05 | 1.49E-02 | 1.19E-03 | 4.91E-03 |
| **Hexane** | **110543** | 1.21E-01 | 6.73E-05 | 2.68E-05 | 0.00E+00 | 5.74E-07 | 0.00E+00 |
| **Naphthalene** | **91203** | 7.86E-03 | 4.39E-06 | 1.75E-06 | 2.06E-03 | 2.91E-05 | 0.00E+00 |
| **PAHs, total, w/o individ. components reported [Treated as B(a)P for HRA]** | **1151** | 2.62E-03 | 1.46E-06 | 5.82E-07 | 2.22E-02 | 0.00E+00 | 0.00E+00 |
| **Propylene** | **115071** | 1.39E+01 | 7.75E-03 | 3.09E-03 | 0.00E+00 | 1.54E-04 | 0.00E+00 |
| **Toluene** | **108883** | 6.94E-01 | 3.88E-04 | 1.54E-04 | 0.00E+00 | 7.71E-05 | 1.57E-05 |
| **Xylene** | **1330207** | 5.16E-01 | 2.88E-04 | 1.15E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | | | | **Totals** | **7.82E-02** | **9.90E-03** | **3.35E-02** |

Use the substance dropdown list in the CAS# Finder to locate CAS# of substances.

| Substance | CAS# Finder |
|---|---|
| Wood preservatives (containing arsenic and chromate) | 1206 |

# Appendix A: Emission Summary

## Emission Summary Kamm Avenue Pistachio Plant

| | | | | Tons/Year | | | |
|---|---|---|---|---|---|---|---|
| **Construction Emissions (Annual)** | | **ROG** | **NOX** | **CO** | **SO2** | **PM10** | **PM2.5** |
| | **2021** | 1.00 | 2.77 | 2.43 | 0.01 | 0.96 | 0.29 |
| | | | | | | | |
| **Highest Year of Construction** | | **1.00** | **2.77** | **2.43** | **0.01** | **0.96** | **0.29** |

**Operational Emissions**

| | | | | Tons/Year | | | |
|---|---|---|---|---|---|---|---|
| | **2021** | **ROG** | **NOX** | **CO** | **SO2** | **PM10** | **PM2.5** |
| Area | | 1.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | | 0.02 | 0.18 | 0.15 | 0.00 | 0.01 | 0.01 |
| Mobile (employee and visitor) | | 0.04 | 0.12 | 1.15 | 0.00 | 0.47 | 0.13 |
| Mobile (Maintenance Trucks) | | 0.01 | 0.15 | 0.10 | 0.00 | 0.03 | 0.01 |
| Mobile (Truck) | | 0.11 | 3.71 | 0.56 | 0.01 | 0.31 | 0.09 |
| Mobile (LNG Truck - Year 1 Only) | | 0.01 | 0.06 | 0.01 | 0.00 | 0.01 | 0.00 |
| Offroad Forklifts and Yard Trucks | | 0.06 | 0.28 | 3.27 | 0.00 | 0.04 | 0.01 |
| Total | | **1.56** | **4.50** | **5.24** | **0.02** | **0.86** | **0.26** |

| | | | | Pounds/Day | | | |
|---|---|---|---|---|---|---|---|
| **Construction** | | | | | | | |
| **Maximum Daily Emission Unmitigated** | | **ROG** | **NOX** | **CO** | **SO2** | **PM10** | **PM2.5** |
| | 2021 | 93.40 | 46.47 | 37.17 | 0.09 | 33.67 | 11.87 |

Maximum Daily

PM10 includes compliance with Reg VIII dust control.

| | | | | Pounds/Day | | | |
|---|---|---|---|---|---|---|---|
| **Construction** | | | | | | | |
| **Maximum Daily Emission Mitigated** | | **ROG** | **NOX** | **CO** | **SO2** | **PM10** | **PM2.5** |
| | 2021 | 93.09 | 32.01 | 40.17 | 0.09 | 14.59 | 4.88 |

| **Operations** | | | **Pounds/Day** | | | |
|---|---|---|---|---|---|---|
| **Max Daily Emissions** | **ROG** | **NOX** | **CO** | **SO2** | **PM10** | **PM2.5** |
| Area | 7.15 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 |
| Energy | 0.11 | 1.00 | 0.83 | 0.01 | 0.08 | 0.08 |
| Mobile (employee and visitor) | 0.32 | 0.08 | 0.98 | 0.00 | 0.08 | 0.02 |
| Mobile (Maintenance Trucks) | 0.01 | 0.02 | 0.03 | 0.00 | 0.00 | 0.00 |
| Mobile (Trucks) | 0.65 | 35.53 | 2.39 | 0.05 | 0.17 | 0.06 |
| Mobile (LNG Trucks Year 1 Only) | 0.01 | 0.29 | 0.05 | 0.00 | 0.03 | 0.01 |
| Offroad Forklifts, Tractor and Yard Trucks | 6.70 | 41.06 | 77.45 | 0.00 | 3.14 | 3.14 |
| Total | **14.94** | **77.98** | **81.76** | **0.06** | **3.50** | **3.31** |

**Operational GHG Emissions**

| | **BAU** | **2021** | **Percent Reduction** |
|---|---|---|---|
| Area | 0.01 | 0.01 | 4.6% |
| Energy - Electricity | 866.14 | 392.96 | 54.6% |
| Energy - Natural Gas | 199.05 | 199.05 | 0.0% |
| **Energy Total** | **1,065.19** | **592.02** | 44.4% |
| Mobile Emp and Visitor | 501.67 | 364.21 | 27.4% |
| Mobile Maintenance Trucks | 48.34 | 40.83 | 15.5% |
| Mobile Truck | 1,323.12 | 1,078.62 | 18.5% |
| Off Road Forklift, Tractor and Yard Trucks | 132.15 | 117.90 | 10.8% |
| Waste | 110.79 | 83.10 | 25.0% |
| Water | 74.87 | 34.67 | 53.7% |
| Refrigerants | 115.00 | 58.00 | **49.6%** |
| Amortized Construction Emissions | 17.36 | 17.36 | **0.0%** |
| **Total** | **3,388.50** | **2,386.71** | **29.6%** |
| | | | 21.7% |
| Reduction from BAU | | **1,001.79** | **7.9%** |

Mobile sources inlcude 10 percent in 2020 for LCFS

| | BAU | 2030 | Percent Reduction |
|---|---|---|---|
| Area | 0.01 | 0.01 | 4.7% |
| Energy - Electricity | 866.14 | 392.96 | 54.6% |
| Energy - Natural Gas | 199.05 | 199.05 | 0.0% |
| **Energy - Total** | **1,065.19** | **592.01** | **44.4%** |
| Mobile Emp and Visitor | 501.67 | 236.96 | 52.8% |
| Mobile Maintenance Trucks | 48.34 | 33.88 | 29.9% |
| Mobile Truck | 1,323.12 | 883.14 | 33.3% |
| Off Road Forklift,Tractor and Yard Trucks | 132.15 | 103.28 | 21.8% |
| Waste | 110.79 | 83.10 | 25.0% |
| Water | 74.87 | 28.79 | 61.5% |
| Refrigerants | 115.00 | 58.00 | 49.6% |
| Amortized Construction Emissions | 17.36 | 17.36 | 0.0% |
| **Total** | **3,388.50** | **2,036.53** | **39.9%** |
| | | | 21.7% |
| Reduction from BAU | | **1,351.96** | **18.2%** |

Mobile Sources include 20 percent reduction for compliance with LCFS in 2030

**Construction GHG Emissions**

| | MTCO2e |
|---|---|
| 2021 | 502.2 |
| Temporary LNG Truck Trips 2021 | 18.5 |
| Total Construction all Phases | **520.8** |
| Amortized Construction 30 years | **17.36** |

LNG trucks includes 10% reduction for LCFS

| | | | Tons/Year | | | | |
|---|---|---|---|---|---|---|---|
| **Stationary Sources** | **ROG** | **NOX** | **CO** | **SO2** | **PM10** | **PM2.5** | **MTCO2/year** |
| Natural Gas Fueled Dryers | 0.55 | 12.10 | 3.05 | 0.41 | 0.41 | 0.41 | 15,446.8 |
| Natural Gas Warmer and Roaster | 0.05 | 1.09 | 0.28 | 0.04 | 0.04 | 0.04 | 1,391.5 |
| Diesel Emergency Generator (170 hp) | 0.002 | 0.037 | 0.010 | | 0.000 | 0.000 | 8.624 |
| Totals | **0.60** | **13.22** | **3.34** | **0.45** | **0.44** | **0.44** | **16,846.9** |

| | | | Pounds/Day | | | |
|---|---|---|---|---|---|---|
| **Stationary Sources** | **ROG** | **NOX** | **CO** | **SO2** | **PM10** | **PM2.5** |
| Natural Gas Fueled Dryers | 26.31 | 576.04 | 145.40 | 19.73 | 19.39 | 64.02 |
| Natural Gas Warmer and Roaster | 0.46 | 10.16 | 2.56 | 0.35 | 0.34 | 0.34 |
| Diesel Emergency Generator (170 hp) | 0.32 | 6.15 | 1.62 | | 0.04 | 0.04 |
| Totals | **27.10** | **592.35** | **149.58** | **20.08** | **19.77** | **64.41** |

# Appendix A: CalEEMod Output

# CalEEMod Output

# Construction and Operation Employee 2021 (Annual)

# Kamm Ave Pistachio Plant Const and Ops 2021 Employee

**Fresno County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Heavy Industry | 177.67 | 1000sqft | 4.08 | 177,670.00 | 0 |
| Other Non-Asphalt Surfaces | 128.90 | Acre | 128.90 | 5,614,884.00 | 0 |
| Parking Lot | 1.60 | Acre | 1.60 | 69,696.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 3 | | | **Operational Year** | 2021 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 290 | **CH4 Intensity (lb/MWhr)** | 0.025 | **N2O Intensity (lb/MWhr)** | 0.005 |

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

Kamm Ave Pistachio Plant Const and Ops 2021 Employee - Fresno County, Annual

Project Characteristics - PG&E Intensity Factors

Land Use - Site Area 315 Acres, Disturbed Area 134.6 acres

Construction Phase - Developers schedule

Off-road Equipment - Increased equipment to reflect shorter than default schedule

Off-road Equipment - Added 3 Aerial Lifts for construction of silos and tanks. Increased equipment by 100 percent to reflect shorter than default schedule.

Off-road Equipment - Limited site prep and grading required at site.

Off-road Equipment - Equipment reduced to reflect limited paving required.

Off-road Equipment - Limited Site Prep and Grading required at the site

Trips and VMT - Vendor trips include cement trucks and building materials. 778 haul trips assumed for road base on approx 9.6 acres

Grading -

Architectural Coating - Rule 4601 Architectural Coatings rule compliance. 1.6 acre parking lots

Vehicle Trips - Employees only ADT = 92.45 Trips/KSF = 0.52 Emp Trip Length Avg 40 miles.

Construction Off-road Equipment Mitigation - Tier 3 Mitigation

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings compliance

Water Mitigation -

Waste Mitigation -

Fleet Mix - Employee Fleet Mix No Truck

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | ConstArea_Parking | 341,075.00 | 69,696.00 |
| tblArchitecturalCoating | EF_Nonresidential_Exterior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Nonresidential_Interior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Parking | 150.00 | 100.00 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 150 | 65 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 150 | 65 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 12.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |

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| | | | |
|---|---|---|---|
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstructionPhase | NumDays | 120.00 | 10.00 |
| tblConstructionPhase | NumDays | 310.00 | 30.00 |
| tblConstructionPhase | NumDays | 3,100.00 | 100.00 |
| tblConstructionPhase | NumDays | 220.00 | 5.00 |
| tblConstructionPhase | NumDays | 220.00 | 15.00 |
| tblFleetMix | HHD | 0.12 | 0.00 |
| tblFleetMix | LDA | 0.49 | 0.61 |
| tblFleetMix | LDT1 | 0.03 | 0.04 |
| tblFleetMix | LDT2 | 0.17 | 0.21 |
| tblFleetMix | LHD1 | 0.02 | 0.00 |
| tblFleetMix | LHD2 | 4.7320e-003 | 0.00 |
| tblFleetMix | MCY | 5.1540e-003 | 0.00 |
| tblFleetMix | MDV | 0.12 | 0.15 |
| tblFleetMix | MH | 6.2900e-004 | 0.00 |
| tblFleetMix | MHD | 0.03 | 0.00 |
| tblFleetMix | OBUS | 2.3660e-003 | 0.00 |
| tblFleetMix | SBUS | 1.0970e-003 | 0.00 |
| tblFleetMix | UBUS | 1.5900e-003 | 0.00 |
| tblGrading | AcresOfGrading | 75.00 | 775.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| 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 | 6.00 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.025 |

| | | | |
|---|---|---|---|
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 778.00 |
| tblTripsAndVMT | VendorTripNumber | 961.00 | 50.00 |
| tblTripsAndVMT | WorkerTripNumber | 2,462.00 | 200.00 |
| tblTripsAndVMT | WorkerTripNumber | 492.00 | 10.00 |
| tblVehicleTrips | CC_TL | 6.60 | 40.00 |
| tblVehicleTrips | CNW_TL | 6.60 | 40.00 |
| tblVehicleTrips | CW_TL | 14.70 | 40.00 |
| tblVehicleTrips | ST_TR | 1.50 | 0.52 |
| tblVehicleTrips | SU_TR | 1.50 | 0.52 |
| tblVehicleTrips | WD_TR | 1.50 | 0.52 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 0.9976 | 2.7697 | 2.4278 | 5.6000e-003 | 0.7436 | 0.1170 | 0.8606 | 0.1845 | 0.1088 | 0.2932 | 0.0000 | 499.7474 | 499.7474 | 0.0999 | 0.0000 | 502.2446 |
| **Maximum** | **0.9976** | **2.7697** | **2.4278** | **5.6000e-003** | **0.7436** | **0.1170** | **0.8606** | **0.1845** | **0.1088** | **0.2932** | **0.0000** | **499.7474** | **499.7474** | **0.0999** | **0.0000** | **502.2446** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 0.8523 | 2.1893 | 2.6784 | 5.6000e-003 | 0.3827 | 0.1038 | 0.4865 | 0.0968 | 0.1037 | 0.2005 | 0.0000 | 499.7470 | 499.7470 | 0.0999 | 0.0000 | 502.2443 |
| **Maximum** | **0.8523** | **2.1893** | **2.6784** | **5.6000e-003** | **0.3827** | **0.1038** | **0.4865** | **0.0968** | **0.1037** | **0.2005** | **0.0000** | **499.7470** | **499.7470** | **0.0999** | **0.0000** | **502.2443** |

| | **ROG** | **NOx** | **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** | **14.57** | **20.95** | **-10.32** | **0.00** | **48.53** | **11.27** | **43.47** | **47.51** | **4.64** | **31.61** | **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** | **1-1-2021** | **3-31-2021** | 1.4817 | 0.9983 |
| **2** | **4-1-2021** | **6-30-2021** | 1.3240 | 1.1228 |
| **3** | **7-1-2021** | **9-30-2021** | 0.9619 | 0.9209 |
| | | **Highest** | 1.4817 | 1.1228 |

## 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 | 1.3037 | 3.0000e-005 | 2.8400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.5100e-003 | 5.5100e-003 | 1.0000e-005 | 0.0000 | 5.8700e-003 |
| Energy | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 407.2128 | 407.2128 | 0.0218 | 7.2400e-003 | 409.9154 |
| Mobile | 0.0401 | 0.1223 | 1.1470 | 4.4700e-003 | 0.4641 | 2.3300e-003 | 0.4664 | 0.1233 | 2.1500e-003 | 0.1255 | 0.0000 | 404.4775 | 404.4775 | 7.9400e-003 | 0.0000 | 404.6760 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 44.7209 | 0.0000 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 13.0348 | 29.2440 | 42.2788 | 1.3413 | 0.0321 | 85.3822 |
| **Total** | **1.3638** | **0.3041** | **1.3025** | **5.5600e-003** | **0.4641** | **0.0162** | **0.4802** | **0.1233** | **0.0160** | **0.1393** | **57.7557** | **840.9398** | **898.6955** | **4.0140** | **0.0394** | **1,010.7737** |

## 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 | 1.2337 | 3.0000e-005 | 2.8400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.5100e-003 | 5.5100e-003 | 1.0000e-005 | 0.0000 | 5.8700e-003 |
| Energy | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 407.2128 | 407.2128 | 0.0218 | 7.2400e-003 | 409.9154 |
| Mobile | 0.0401 | 0.1223 | 1.1470 | 4.4700e-003 | 0.4641 | 2.3300e-003 | 0.4664 | 0.1233 | 2.1500e-003 | 0.1255 | 0.0000 | 404.4775 | 404.4775 | 7.9400e-003 | 0.0000 | 404.6760 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 33.5407 | 0.0000 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 10.4278 | 23.3952 | 33.8230 | 1.0731 | 0.0257 | 68.3058 |
| **Total** | **1.2938** | **0.3041** | **1.3025** | **5.5600e-003** | **0.4641** | **0.0162** | **0.4802** | **0.1233** | **0.0160** | **0.1393** | **43.9685** | **835.0910** | **879.0595** | **3.0850** | **0.0329** | **965.9987** |

| | ROG | NOx | 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** | **5.13** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **23.87** | **0.70** | **2.18** | **23.14** | **16.34** | **4.43** |

## 3.0 Construction Detail

**Construction Phase**

Kamm Ave Pistachio Plant Const and Ops 2021 Employee - Fresno County, Annual

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2021 | 1/14/2021 | 5 | 10 | |
| 2 | Grading | Grading | 1/15/2021 | 2/25/2021 | 5 | 30 | |
| 3 | Building Construction | Building Construction | 2/26/2021 | 7/15/2021 | 5 | 100 | |
| 4 | Paving | Paving | 7/16/2021 | 7/22/2021 | 5 | 5 | |
| 5 | Architectural Coating | Architectural Coating | 7/23/2021 | 8/12/2021 | 5 | 15 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 775**

**Acres of Paving: 130.5**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 266,505; Non-Residential Outdoor: 88,835; Striped Parking Area: 69,696 (Architectural Coating – sqft)**

**OffRoad Equipment**

Kamm Ave Pistachio Plant Const and Ops 2021 Employee - Fresno County, Annual

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Aerial Lifts | 3 | 8.00 | 63 | 0.31 |
| Building Construction | Cranes | 2 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 6 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 1 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 1 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 1 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 2 | 6.00 | 78 | 0.48 |

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 16 | 200.00 | 50.00 | 778.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 3 | 8.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 2 | 10.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

## 3.2 Site Preparation - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0903 | 0.0000 | 0.0903 | 0.0497 | 0.0000 | 0.0497 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0194 | 0.2025 | 0.1058 | 1.9000e-004 | | 0.0102 | 0.0102 | | 9.4000e-003 | 9.4000e-003 | 0.0000 | 16.7179 | 16.7179 | 5.4100e-003 | 0.0000 | 16.8530 |
| **Total** | **0.0194** | **0.2025** | **0.1058** | **1.9000e-004** | **0.0903** | **0.0102** | **0.1006** | **0.0497** | **9.4000e-003** | **0.0591** | **0.0000** | **16.7179** | **16.7179** | **5.4100e-003** | **0.0000** | **16.8530** |

## 3.2 Site Preparation - 2021

### 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 | 5.0000e-004 | 3.2000e-004 | 3.2800e-003 | 1.0000e-005 | 1.1200e-003 | 1.0000e-005 | 1.1300e-003 | 3.0000e-004 | 1.0000e-005 | 3.0000e-004 | 0.0000 | 0.9256 | 0.9256 | 2.0000e-005 | 0.0000 | 0.9261 |
| **Total** | **5.0000e-004** | **3.2000e-004** | **3.2800e-003** | **1.0000e-005** | **1.1200e-003** | **1.0000e-005** | **1.1300e-003** | **3.0000e-004** | **1.0000e-005** | **3.0000e-004** | **0.0000** | **0.9256** | **0.9256** | **2.0000e-005** | **0.0000** | **0.9261** |

### 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 | | | | | 0.0352 | 0.0000 | 0.0352 | 0.0194 | 0.0000 | 0.0194 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.6600e-003 | 0.0953 | 0.1148 | 1.9000e-004 | | 4.7300e-003 | 4.7300e-003 | | 4.7300e-003 | 4.7300e-003 | 0.0000 | 16.7178 | 16.7178 | 5.4100e-003 | 0.0000 | 16.8530 |
| **Total** | **4.6600e-003** | **0.0953** | **0.1148** | **1.9000e-004** | **0.0352** | **4.7300e-003** | **0.0400** | **0.0194** | **4.7300e-003** | **0.0241** | **0.0000** | **16.7178** | **16.7178** | **5.4100e-003** | **0.0000** | **16.8530** |

## 3.2 Site Preparation - 2021

**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 | 5.0000e-004 | 3.2000e-004 | 3.2800e-003 | 1.0000e-005 | 1.1200e-003 | 1.0000e-005 | 1.1300e-003 | 3.0000e-004 | 1.0000e-005 | 3.0000e-004 | 0.0000 | 0.9256 | 0.9256 | 2.0000e-005 | 0.0000 | 0.9261 |
| **Total** | **5.0000e-004** | **3.2000e-004** | **3.2800e-003** | **1.0000e-005** | **1.1200e-003** | **1.0000e-005** | **1.1300e-003** | **3.0000e-004** | **1.0000e-005** | **3.0000e-004** | **0.0000** | **0.9256** | **0.9256** | **2.0000e-005** | **0.0000** | **0.9261** |

## 3.3 Grading - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.5013 | 0.0000 | 0.5013 | 0.0940 | 0.0000 | 0.0940 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0629 | 0.6960 | 0.4632 | 9.3000e-004 | | 0.0298 | 0.0298 | | 0.0274 | 0.0274 | 0.0000 | 81.7425 | 81.7425 | 0.0264 | 0.0000 | 82.4034 |
| **Total** | **0.0629** | **0.6960** | **0.4632** | **9.3000e-004** | **0.5013** | **0.0298** | **0.5311** | **0.0940** | **0.0274** | **0.1214** | **0.0000** | **81.7425** | **81.7425** | **0.0264** | **0.0000** | **82.4034** |

## 3.3 Grading - 2021

### 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 | 1.6600e-003 | 1.0800e-003 | 0.0109 | 3.0000e-005 | 3.7300e-003 | 2.0000e-005 | 3.7500e-003 | 9.9000e-004 | 2.0000e-005 | 1.0100e-003 | 0.0000 | 3.0853 | 3.0853 | 7.0000e-005 | 0.0000 | 3.0871 |
| **Total** | **1.6600e-003** | **1.0800e-003** | **0.0109** | **3.0000e-005** | **3.7300e-003** | **2.0000e-005** | **3.7500e-003** | **9.9000e-004** | **2.0000e-005** | **1.0100e-003** | **0.0000** | **3.0853** | **3.0853** | **7.0000e-005** | **0.0000** | **3.0871** |

### 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 | | | | | 0.1955 | 0.0000 | 0.1955 | 0.0367 | 0.0000 | 0.0367 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0229 | 0.4497 | 0.5508 | 9.3000e-004 | | 0.0195 | 0.0195 | | 0.0195 | 0.0195 | 0.0000 | 81.7424 | 81.7424 | 0.0264 | 0.0000 | 82.4033 |
| **Total** | **0.0229** | **0.4497** | **0.5508** | **9.3000e-004** | **0.1955** | **0.0195** | **0.2150** | **0.0367** | **0.0195** | **0.0562** | **0.0000** | **81.7424** | **81.7424** | **0.0264** | **0.0000** | **82.4033** |

## 3.3 Grading - 2021

**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 | 1.6600e-003 | 1.0800e-003 | 0.0109 | 3.0000e-005 | 3.7300e-003 | 2.0000e-005 | 3.7500e-003 | 9.9000e-004 | 2.0000e-005 | 1.0100e-003 | 0.0000 | 3.0853 | 3.0853 | 7.0000e-005 | 0.0000 | 3.0871 |
| **Total** | **1.6600e-003** | **1.0800e-003** | **0.0109** | **3.0000e-005** | **3.7300e-003** | **2.0000e-005** | **3.7500e-003** | **9.9000e-004** | **2.0000e-005** | **1.0100e-003** | **0.0000** | **3.0853** | **3.0853** | **7.0000e-005** | **0.0000** | **3.0871** |

## 3.4 Building Construction - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1433 | 1.4227 | 1.3763 | 2.2600e-003 | | 0.0729 | 0.0729 | | 0.0681 | 0.0681 | 0.0000 | 195.9511 | 195.9511 | 0.0539 | 0.0000 | 197.2976 |
| **Total** | **0.1433** | **1.4227** | **1.3763** | **2.2600e-003** | | **0.0729** | **0.0729** | | **0.0681** | **0.0681** | **0.0000** | **195.9511** | **195.9511** | **0.0539** | **0.0000** | **197.2976** |

## 3.4 Building Construction - 2021

### 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 | 2.9200e-003 | 0.1007 | 0.0141 | 3.1000e-004 | 6.6500e-003 | 3.3000e-004 | 6.9800e-003 | 1.8300e-003 | 3.2000e-004 | 2.1400e-003 | 0.0000 | 29.2691 | 29.2691 | 2.5400e-003 | 0.0000 | 29.3324 |
| Vendor | 7.1400e-003 | 0.2709 | 0.0409 | 6.5000e-004 | 0.0150 | 6.9000e-004 | 0.0157 | 4.3300e-003 | 6.6000e-004 | 4.9900e-003 | 0.0000 | 61.9039 | 61.9039 | 8.0300e-003 | 0.0000 | 62.1046 |
| Worker | 0.0555 | 0.0360 | 0.3643 | 1.1400e-003 | 0.1243 | 7.4000e-004 | 0.1251 | 0.0330 | 6.8000e-004 | 0.0337 | 0.0000 | 102.8423 | 102.8423 | 2.4400e-003 | 0.0000 | 102.9032 |
| **Total** | **0.0655** | **0.4077** | **0.4193** | **2.1000e-003** | **0.1460** | **1.7600e-003** | **0.1477** | **0.0392** | **1.6600e-003** | **0.0408** | **0.0000** | **194.0152** | **194.0152** | **0.0130** | **0.0000** | **194.3402** |

### 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 | 0.0561 | 1.2004 | 1.5267 | 2.2600e-003 | | 0.0756 | 0.0756 | | 0.0756 | 0.0756 | 0.0000 | 195.9509 | 195.9509 | 0.0539 | 0.0000 | 197.2973 |
| **Total** | **0.0561** | **1.2004** | **1.5267** | **2.2600e-003** | | **0.0756** | **0.0756** | | **0.0756** | **0.0756** | **0.0000** | **195.9509** | **195.9509** | **0.0539** | **0.0000** | **197.2973** |

## 3.4 Building Construction - 2021

**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 | 2.9200e-003 | 0.1007 | 0.0141 | 3.1000e-004 | 6.6500e-003 | 3.3000e-004 | 6.9800e-003 | 1.8300e-003 | 3.2000e-004 | 2.1400e-003 | 0.0000 | 29.2691 | 29.2691 | 2.5400e-003 | 0.0000 | 29.3324 |
| Vendor | 7.1400e-003 | 0.2709 | 0.0409 | 6.5000e-004 | 0.0150 | 6.9000e-004 | 0.0157 | 4.3300e-003 | 6.6000e-004 | 4.9900e-003 | 0.0000 | 61.9039 | 61.9039 | 8.0300e-003 | 0.0000 | 62.1046 |
| Worker | 0.0555 | 0.0360 | 0.3643 | 1.1400e-003 | 0.1243 | 7.4000e-004 | 0.1251 | 0.0330 | 6.8000e-004 | 0.0337 | 0.0000 | 102.8423 | 102.8423 | 2.4400e-003 | 0.0000 | 102.9032 |
| **Total** | **0.0655** | **0.4077** | **0.4193** | **2.1000e-003** | **0.1460** | **1.7600e-003** | **0.1477** | **0.0392** | **1.6600e-003** | **0.0408** | **0.0000** | **194.0152** | **194.0152** | **0.0130** | **0.0000** | **194.3402** |

## 3.5 Paving - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 1.5700e-003 | 0.0162 | 0.0183 | 3.0000e-005 | | 8.5000e-004 | 8.5000e-004 | | 7.8000e-004 | 7.8000e-004 | 0.0000 | 2.5029 | 2.5029 | 8.1000e-004 | 0.0000 | 2.5232 |
| Paving | 2.1000e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **3.6700e-003** | **0.0162** | **0.0183** | **3.0000e-005** | | **8.5000e-004** | **8.5000e-004** | | **7.8000e-004** | **7.8000e-004** | **0.0000** | **2.5029** | **2.5029** | **8.1000e-004** | **0.0000** | **2.5232** |

## 3.5 Paving - 2021

### 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 | 1.1000e-004 | 7.0000e-005 | 7.3000e-004 | 0.0000 | 2.5000e-004 | 0.0000 | 2.5000e-004 | 7.0000e-005 | 0.0000 | 7.0000e-005 | 0.0000 | 0.2057 | 0.2057 | 0.0000 | 0.0000 | 0.2058 |
| **Total** | **1.1000e-004** | **7.0000e-005** | **7.3000e-004** | **0.0000** | **2.5000e-004** | **0.0000** | **2.5000e-004** | **7.0000e-005** | **0.0000** | **7.0000e-005** | **0.0000** | **0.2057** | **0.2057** | **0.0000** | **0.0000** | **0.2058** |

### 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 | 7.0000e-004 | 0.0141 | 0.0216 | 3.0000e-005 | | 7.6000e-004 | 7.6000e-004 | | 7.6000e-004 | 7.6000e-004 | 0.0000 | 2.5029 | 2.5029 | 8.1000e-004 | 0.0000 | 2.5232 |
| Paving | 2.1000e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **2.8000e-003** | **0.0141** | **0.0216** | **3.0000e-005** | | **7.6000e-004** | **7.6000e-004** | | **7.6000e-004** | **7.6000e-004** | **0.0000** | **2.5029** | **2.5029** | **8.1000e-004** | **0.0000** | **2.5232** |

## 3.5 Paving - 2021

**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 | 1.1000e-004 | 7.0000e-005 | 7.3000e-004 | 0.0000 | 2.5000e-004 | 0.0000 | 2.5000e-004 | 7.0000e-005 | 0.0000 | 7.0000e-005 | 0.0000 | 0.2057 | 0.2057 | 0.0000 | 0.0000 | 0.2058 |
| **Total** | **1.1000e-004** | **7.0000e-005** | **7.3000e-004** | **0.0000** | **2.5000e-004** | **0.0000** | **2.5000e-004** | **7.0000e-005** | **0.0000** | **7.0000e-005** | **0.0000** | **0.2057** | **0.2057** | **0.0000** | **0.0000** | **0.2058** |

## 3.6 Architectural Coating - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.6968 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.2800e-003 | 0.0229 | 0.0273 | 4.0000e-005 | | 1.4100e-003 | 1.4100e-003 | | 1.4100e-003 | 1.4100e-003 | 0.0000 | 3.8299 | 3.8299 | 2.6000e-004 | 0.0000 | 3.8365 |
| **Total** | **0.7001** | **0.0229** | **0.0273** | **4.0000e-005** | | **1.4100e-003** | **1.4100e-003** | | **1.4100e-003** | **1.4100e-003** | **0.0000** | **3.8299** | **3.8299** | **2.6000e-004** | **0.0000** | **3.8365** |

## 3.6 Architectural Coating - 2021

**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 | 4.2000e-004 | 2.7000e-004 | 2.7300e-003 | 1.0000e-005 | 9.3000e-004 | 1.0000e-005 | 9.4000e-004 | 2.5000e-004 | 1.0000e-005 | 2.5000e-004 | 0.0000 | 0.7713 | 0.7713 | 2.0000e-005 | 0.0000 | 0.7718 |
| **Total** | **4.2000e-004** | **2.7000e-004** | **2.7300e-003** | **1.0000e-005** | **9.3000e-004** | **1.0000e-005** | **9.4000e-004** | **2.5000e-004** | **1.0000e-005** | **2.5000e-004** | **0.0000** | **0.7713** | **0.7713** | **2.0000e-005** | **0.0000** | **0.7718** |

**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 | 0.6968 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 8.9000e-004 | 0.0204 | 0.0275 | 4.0000e-005 | | 1.4300e-003 | 1.4300e-003 | | 1.4300e-003 | 1.4300e-003 | 0.0000 | 3.8299 | 3.8299 | 2.6000e-004 | 0.0000 | 3.8365 |
| **Total** | **0.6977** | **0.0204** | **0.0275** | **4.0000e-005** | | **1.4300e-003** | **1.4300e-003** | | **1.4300e-003** | **1.4300e-003** | **0.0000** | **3.8299** | **3.8299** | **2.6000e-004** | **0.0000** | **3.8365** |

## 3.6 Architectural Coating - 2021

**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 | 4.2000e-004 | 2.7000e-004 | 2.7300e-003 | 1.0000e-005 | 9.3000e-004 | 1.0000e-005 | 9.4000e-004 | 2.5000e-004 | 1.0000e-005 | 2.5000e-004 | 0.0000 | 0.7713 | 0.7713 | 2.0000e-005 | 0.0000 | 0.7718 |
| **Total** | **4.2000e-004** | **2.7000e-004** | **2.7300e-003** | **1.0000e-005** | **9.3000e-004** | **1.0000e-005** | **9.4000e-004** | **2.5000e-004** | **1.0000e-005** | **2.5000e-004** | **0.0000** | **0.7713** | **0.7713** | **2.0000e-005** | **0.0000** | **0.7718** |

# 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 | 0.0401 | 0.1223 | 1.1470 | 4.4700e-003 | 0.4641 | 2.3300e-003 | 0.4664 | 0.1233 | 2.1500e-003 | 0.1255 | 0.0000 | 404.4775 | 404.4775 | 7.9400e-003 | 0.0000 | 404.6760 |
| Unmitigated | 0.0401 | 0.1223 | 1.1470 | 4.4700e-003 | 0.4641 | 2.3300e-003 | 0.4664 | 0.1233 | 2.1500e-003 | 0.1255 | 0.0000 | 404.4775 | 404.4775 | 7.9400e-003 | 0.0000 | 404.6760 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Heavy Industry | 92.39 | 92.39 | 92.39 | 1,254,477 | 1,254,477 |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 92.39 | 92.39 | 92.39 | 1,254,477 | 1,254,477 |

## 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 |
| General Heavy Industry | 40.00 | 40.00 | 40.00 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |
| Other Non-Asphalt Surfaces | 14.70 | 6.60 | 6.60 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Parking Lot | 14.70 | 6.60 | 6.60 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Heavy Industry | 0.607139 | 0.039400 | 0.208980 | 0.149930 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Other Non-Asphalt Surfaces | 0.487139 | 0.031901 | 0.169199 | 0.121386 | 0.017033 | 0.004732 | 0.033028 | 0.124746 | 0.002366 | 0.001590 | 0.005154 | 0.001097 | 0.000629 |
| Parking Lot | 0.487139 | 0.031901 | 0.169199 | 0.121386 | 0.017033 | 0.004732 | 0.033028 | 0.124746 | 0.002366 | 0.001590 | 0.005154 | 0.001097 | 0.000629 |

## 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 | 209.3413 | 209.3413 | 0.0181 | 3.6100e-003 | 210.8680 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 209.3413 | 209.3413 | 0.0181 | 3.6100e-003 | 210.8680 |
| NaturalGas Mitigated | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| NaturalGas Unmitigated | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |

## 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 | | | | | |
| General Heavy Industry | 3.70797e+006 | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| Other Non-Asphalt Surfaces | 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 |
| 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 |
| **Total** | | **0.0200** | **0.1818** | **0.1527** | **1.0900e-003** | | **0.0138** | **0.0138** | | **0.0138** | **0.0138** | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

**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 | | | | | |
| General Heavy Industry | 3.70797e+006 | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| Other Non-Asphalt Surfaces | 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 |
| 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 |
| **Total** | | **0.0200** | **0.1818** | **0.1527** | **1.0900e-003** | | **0.0138** | **0.0138** | | **0.0138** | **0.0138** | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 206.1325 | 0.0178 | 3.5500e-003 | 207.6358 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 24393.6 | 3.2088 | 2.8000e-004 | 6.0000e-005 | 3.2322 |
| **Total** | | **209.3413** | **0.0181** | **3.6100e-003** | **210.8680** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 206.1325 | 0.0178 | 3.5500e-003 | 207.6358 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 24393.6 | 3.2088 | 2.8000e-004 | 6.0000e-005 | 3.2322 |
| **Total** | | **209.3413** | **0.0181** | **3.6100e-003** | **210.8680** |

## 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 1.2337 | 3.0000e-005 | 2.8400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.5100e-003 | 5.5100e-003 | 1.0000e-005 | 0.0000 | 5.8700e-003 |
| Unmitigated | 1.3037 | 3.0000e-005 | 2.8400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.5100e-003 | 5.5100e-003 | 1.0000e-005 | 0.0000 | 5.8700e-003 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.2421 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 1.0614 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.7000e-004 | 3.0000e-005 | 2.8400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.5100e-003 | 5.5100e-003 | 1.0000e-005 | 0.0000 | 5.8700e-003 |
| **Total** | **1.3037** | **3.0000e-005** | **2.8400e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **5.5100e-003** | **5.5100e-003** | **1.0000e-005** | **0.0000** | **5.8700e-003** |

**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 | 0.1721 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 1.0614 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.7000e-004 | 3.0000e-005 | 2.8400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.5100e-003 | 5.5100e-003 | 1.0000e-005 | 0.0000 | 5.8700e-003 |
| **Total** | **1.2337** | **3.0000e-005** | **2.8400e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **5.5100e-003** | **5.5100e-003** | **1.0000e-005** | **0.0000** | **5.8700e-003** |

## 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 33.8230 | 1.0731 | 0.0257 | 68.3058 |
| Unmitigated | 42.2788 | 1.3413 | 0.0321 | 85.3822 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 41.0862 / 0 | 42.2788 | 1.3413 | 0.0321 | 85.3822 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **42.2788** | **1.3413** | **0.0321** | **85.3822** |

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 32.8689 / 0 | 33.8230 | 1.0731 | 0.0257 | 68.3058 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **33.8230** | **1.0731** | **0.0257** | **68.3058** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Unmitigated | 44.7209 | 2.6429 | 0.0000 | 110.7942 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 220.31 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **44.7209** | **2.6429** | **0.0000** | **110.7942** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 165.233 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **33.5407** | **1.9822** | **0.0000** | **83.0957** |

## 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

# CalEEMod Output

# Operations – Maintenance Trucks (Annual)

# Kamm Ave Pistachio Plant Maintenance Trucks Only

**Fresno County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Heavy Industry | 177.67 | 1000sqft | 4.08 | 177,670.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 3 | | | **Operational Year** | 2021 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 641.35 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Project Characteristics -

Land Use - Site Area 315 Acres

Construction Phase - Developers schedule

Off-road Equipment -

Off-road Equipment - Increased equipment amount to reflect site size

Trips and VMT - Vendor trips include cement trucks for foundations, and delivery trucks for building materials

Grading -

Architectural Coating - Rule 4601 Architectural Coatings rule compliance.  Parking lot 1.08 acres.

Vehicle Trips - Truck trips only. Trip gen 0.016 trips/ksf, Trip Length 50.0 miles

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings compliance

Water Mitigation -

Waste Mitigation -

Fleet Mix - LHD Maintenance Trucks Only

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblFleetMix | HHD | 0.12 | 0.00 |
| tblFleetMix | LDA | 0.49 | 0.00 |
| tblFleetMix | LDT1 | 0.03 | 0.00 |
| tblFleetMix | LDT2 | 0.17 | 0.00 |
| tblFleetMix | LHD1 | 0.02 | 1.00 |
| tblFleetMix | LHD2 | 4.7320e-003 | 0.00 |
| tblFleetMix | MCY | 5.1540e-003 | 0.00 |
| tblFleetMix | MDV | 0.12 | 0.00 |
| tblFleetMix | MH | 6.2900e-004 | 0.00 |
| tblFleetMix | MHD | 0.03 | 0.00 |
| tblFleetMix | OBUS | 2.3660e-003 | 0.00 |
| tblFleetMix | SBUS | 1.0970e-003 | 0.00 |
| tblFleetMix | UBUS | 1.5900e-003 | 0.00 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblVehicleTrips | CC_TL | 6.60 | 50.00 |
| tblVehicleTrips | CNW_TL | 6.60 | 50.00 |
| tblVehicleTrips | CW_TL | 14.70 | 50.00 |
| tblVehicleTrips | DV_TP | 5.00 | 0.00 |
| tblVehicleTrips | PB_TP | 3.00 | 0.00 |
| tblVehicleTrips | PR_TP | 92.00 | 100.00 |
| tblVehicleTrips | ST_TR | 1.50 | 0.02 |
| tblVehicleTrips | SU_TR | 1.50 | 0.02 |
| tblVehicleTrips | WD_TR | 1.50 | 0.02 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 1.2380 | 0.0142 | 0.0213 | 4.0000e-005 | 1.6800e-003 | 8.6000e-004 | 2.5300e-003 | 4.5000e-004 | 8.6000e-004 | 1.3000e-003 | 0.0000 | 3.6863 | 3.6863 | 1.9000e-004 | 0.0000 | 3.6911 |
| **Maximum** | **1.2380** | **0.0142** | **0.0213** | **4.0000e-005** | **1.6800e-003** | **8.6000e-004** | **2.5300e-003** | **4.5000e-004** | **8.6000e-004** | **1.3000e-003** | **0.0000** | **3.6863** | **3.6863** | **1.9000e-004** | **0.0000** | **3.6911** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 1.2380 | 0.0142 | 0.0213 | 4.0000e-005 | 1.6800e-003 | 8.6000e-004 | 2.5300e-003 | 4.5000e-004 | 8.6000e-004 | 1.3000e-003 | 0.0000 | 3.6863 | 3.6863 | 1.9000e-004 | 0.0000 | 3.6911 |
| **Maximum** | **1.2380** | **0.0142** | **0.0213** | **4.0000e-005** | **1.6800e-003** | **8.6000e-004** | **2.5300e-003** | **4.5000e-004** | **8.6000e-004** | **1.3000e-003** | **0.0000** | **3.6863** | **3.6863** | **1.9000e-004** | **0.0000** | **3.6911** |

| | **ROG** | **NOx** | **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** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **1-1-2021** | **3-31-2021** | 1.2921 | 1.2921 |
| | | **Highest** | 1.2921 | 1.2921 |

## 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 | 0.8176 | 2.0000e-005 | 1.6400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3900e-003 |
| Energy | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 653.7442 | 653.7442 | 0.0244 | 7.8900e-003 | 656.7063 |
| Mobile | 0.0123 | 0.1532 | 0.1023 | 4.9000e-004 | 0.0269 | 1.6400e-003 | 0.0285 | 7.6000e-003 | 1.5600e-003 | 9.1700e-003 | 0.0000 | 45.3291 | 45.3291 | 1.5500e-003 | 0.0000 | 45.3678 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 44.7209 | 0.0000 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 13.0348 | 64.6747 | 77.7094 | 1.3417 | 0.0322 | 120.8530 |
| **Total** | **0.8498** | **0.3350** | **0.2566** | **1.5800e-003** | **0.0269** | **0.0155** | **0.0424** | **7.6000e-003** | **0.0154** | **0.0230** | **57.7557** | **763.7512** | **821.5069** | **4.0106** | **0.0401** | **933.7247** |

## 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 | 0.8176 | 2.0000e-005 | 1.6400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3900e-003 |
| Energy | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 653.7442 | 653.7442 | 0.0244 | 7.8900e-003 | 656.7063 |
| Mobile | 0.0123 | 0.1532 | 0.1023 | 4.9000e-004 | 0.0269 | 1.6400e-003 | 0.0285 | 7.6000e-003 | 1.5600e-003 | 9.1700e-003 | 0.0000 | 45.3291 | 45.3291 | 1.5500e-003 | 0.0000 | 45.3678 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 33.5407 | 0.0000 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 10.4278 | 51.7397 | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| **Total** | **0.8498** | **0.3350** | **0.2566** | **1.5800e-003** | **0.0269** | **0.0155** | **0.0424** | **7.6000e-003** | **0.0154** | **0.0230** | **43.9685** | **750.8162** | **794.7847** | **3.0815** | **0.0337** | **881.8556** |

| | **ROG** | **NOx** | **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** | **23.87** | **1.69** | **3.25** | **23.17** | **16.08** | **5.56** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Architectural Coating | Architectural Coating | 1/1/2021 | 1/26/2021 | 5 | 18 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 266,505; Non-Residential Outdoor: 88,835; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 1 | 15.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Architectural Coating - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.2353 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.9700e-003 | 0.0137 | 0.0164 | 3.0000e-005 | | 8.5000e-004 | 8.5000e-004 | | 8.5000e-004 | 8.5000e-004 | 0.0000 | 2.2979 | 2.2979 | 1.6000e-004 | 0.0000 | 2.3019 |
| **Total** | **1.2372** | **0.0137** | **0.0164** | **3.0000e-005** | | **8.5000e-004** | **8.5000e-004** | | **8.5000e-004** | **8.5000e-004** | **0.0000** | **2.2979** | **2.2979** | **1.6000e-004** | **0.0000** | **2.3019** |

**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 | 7.5000e-004 | 4.9000e-004 | 4.9200e-003 | 2.0000e-005 | 1.6800e-003 | 1.0000e-005 | 1.6900e-003 | 4.5000e-004 | 1.0000e-005 | 4.6000e-004 | 0.0000 | 1.3884 | 1.3884 | 3.0000e-005 | 0.0000 | 1.3892 |
| **Total** | **7.5000e-004** | **4.9000e-004** | **4.9200e-003** | **2.0000e-005** | **1.6800e-003** | **1.0000e-005** | **1.6900e-003** | **4.5000e-004** | **1.0000e-005** | **4.6000e-004** | **0.0000** | **1.3884** | **1.3884** | **3.0000e-005** | **0.0000** | **1.3892** |

## 3.2 Architectural Coating - 2021

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.2353 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.9700e-003 | 0.0137 | 0.0164 | 3.0000e-005 | | 8.5000e-004 | 8.5000e-004 | | 8.5000e-004 | 8.5000e-004 | 0.0000 | 2.2979 | 2.2979 | 1.6000e-004 | 0.0000 | 2.3019 |
| **Total** | **1.2372** | **0.0137** | **0.0164** | **3.0000e-005** | | **8.5000e-004** | **8.5000e-004** | | **8.5000e-004** | **8.5000e-004** | **0.0000** | **2.2979** | **2.2979** | **1.6000e-004** | **0.0000** | **2.3019** |

**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 | 7.5000e-004 | 4.9000e-004 | 4.9200e-003 | 2.0000e-005 | 1.6800e-003 | 1.0000e-005 | 1.6900e-003 | 4.5000e-004 | 1.0000e-005 | 4.6000e-004 | 0.0000 | 1.3884 | 1.3884 | 3.0000e-005 | 0.0000 | 1.3892 |
| **Total** | **7.5000e-004** | **4.9000e-004** | **4.9200e-003** | **2.0000e-005** | **1.6800e-003** | **1.0000e-005** | **1.6900e-003** | **4.5000e-004** | **1.0000e-005** | **4.6000e-004** | **0.0000** | **1.3884** | **1.3884** | **3.0000e-005** | **0.0000** | **1.3892** |

## 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 | 0.0123 | 0.1532 | 0.1023 | 4.9000e-004 | 0.0269 | 1.6400e-003 | 0.0285 | 7.6000e-003 | 1.5600e-003 | 9.1700e-003 | 0.0000 | 45.3291 | 45.3291 | 1.5500e-003 | 0.0000 | 45.3678 |
| Unmitigated | 0.0123 | 0.1532 | 0.1023 | 4.9000e-004 | 0.0269 | 1.6400e-003 | 0.0285 | 7.6000e-003 | 1.5600e-003 | 9.1700e-003 | 0.0000 | 45.3291 | 45.3291 | 1.5500e-003 | 0.0000 | 45.3678 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Heavy Industry | 3.55 | 3.55 | 3.55 | 64,672 | 64,672 |
| Total | 3.55 | 3.55 | 3.55 | 64,672 | 64,672 |

## 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 |
| General Heavy Industry | 50.00 | 50.00 | 50.00 | 59.00 | 28.00 | 13.00 | 100 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Heavy Industry | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

## 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 | 455.8726 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 455.8726 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| NaturalGas Mitigated | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| NaturalGas Unmitigated | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |

## 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 | | | | | |
| General Heavy Industry | 3.70797e+006 | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| **Total** | | **0.0200** | **0.1818** | **0.1527** | **1.0900e-003** | | **0.0138** | **0.0138** | | **0.0138** | **0.0138** | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

**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 | | | | | |
| General Heavy Industry | 3.70797e+006 | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| **Total** | | **0.0200** | **0.1818** | **0.1527** | **1.0900e-003** | | **0.0138** | **0.0138** | | **0.0138** | **0.0138** | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| **Total** | | **455.8726** | **0.0206** | **4.2600e-003** | **457.6589** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| **Total** | | **455.8726** | **0.0206** | **4.2600e-003** | **457.6589** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.8176 | 2.0000e-005 | 1.6400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3900e-003 |
| Unmitigated | 0.8176 | 2.0000e-005 | 1.6400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3900e-003 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.1235 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.6939 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 1.5000e-004 | 2.0000e-005 | 1.6400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3900e-003 |
| **Total** | **0.8176** | **2.0000e-005** | **1.6400e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **3.1700e-003** | **3.1700e-003** | **1.0000e-005** | **0.0000** | **3.3900e-003** |

## 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 | 0.1235 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.6939 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 1.5000e-004 | 2.0000e-005 | 1.6400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3900e-003 |
| **Total** | **0.8176** | **2.0000e-005** | **1.6400e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **3.1700e-003** | **3.1700e-003** | **1.0000e-005** | **0.0000** | **3.3900e-003** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| Unmitigated | 77.7094 | 1.3417 | 0.0322 | 120.8530 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 41.0862 / 0 | 77.7094 | 1.3417 | 0.0322 | 120.8530 |
| **Total** | | **77.7094** | **1.3417** | **0.0322** | **120.8530** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 32.8689 / 0 | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| **Total** | | **62.1675** | **1.0734** | **0.0258** | **96.6824** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Unmitigated | 44.7209 | 2.6429 | 0.0000 | 110.7942 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 220.31 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| **Total** | | **44.7209** | **2.6429** | **0.0000** | **110.7942** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 165.233 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| **Total** | | **33.5407** | **1.9822** | **0.0000** | **83.0957** |

## 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

# CalEEMod Output

# Operations – Heavy Duty Trucks (Annual)

# Kamm Ave Pistachio Plant HD Truck Only

**Fresno County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Heavy Industry | 177.67 | 1000sqft | 4.08 | 177,670.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 3 | | | **Operational Year** | 2021 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 641.35 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Project Characteristics -

Land Use - Site Area 315 Acres

Construction Phase - Developers schedule

Off-road Equipment -

Off-road Equipment - Increased equipment amount to reflect site size

Trips and VMT - Vendor trips include cement trucks for foundations, and delivery trucks for building materials

Grading -

Architectural Coating - Rule 4601 Architectural Coatings rule compliance.  Parking lot 1.08 acres.

Vehicle Trips - Truck trips only. Trip gen 0.31 trips/ksf, Trip Length 34.1miles

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings compliance

Water Mitigation -

Waste Mitigation -

Fleet Mix - HHD Trucks Only

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblFleetMix | HHD | 0.12 | 1.00 |
| tblFleetMix | LDA | 0.49 | 0.00 |
| tblFleetMix | LDT1 | 0.03 | 0.00 |
| tblFleetMix | LDT2 | 0.17 | 0.00 |
| tblFleetMix | LHD1 | 0.02 | 0.00 |
| tblFleetMix | LHD2 | 4.7320e-003 | 0.00 |
| tblFleetMix | MCY | 5.1540e-003 | 0.00 |
| tblFleetMix | MDV | 0.12 | 0.00 |
| tblFleetMix | MH | 6.2900e-004 | 0.00 |
| tblFleetMix | MHD | 0.03 | 0.00 |
| tblFleetMix | OBUS | 2.3660e-003 | 0.00 |
| tblFleetMix | SBUS | 1.0970e-003 | 0.00 |
| tblFleetMix | UBUS | 1.5900e-003 | 0.00 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblVehicleTrips | CC_TL | 6.60 | 34.10 |
| tblVehicleTrips | CNW_TL | 6.60 | 34.10 |
| tblVehicleTrips | CW_TL | 14.70 | 34.10 |
| tblVehicleTrips | DV_TP | 5.00 | 0.00 |
| tblVehicleTrips | PB_TP | 3.00 | 0.00 |
| tblVehicleTrips | PR_TP | 92.00 | 100.00 |
| tblVehicleTrips | ST_TR | 1.50 | 0.31 |
| tblVehicleTrips | SU_TR | 1.50 | 0.31 |
| tblVehicleTrips | WD_TR | 1.50 | 0.31 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 1.2380 | 0.0142 | 0.0213 | 4.0000e-005 | 1.6800e-003 | 8.6000e-004 | 2.5300e-003 | 4.5000e-004 | 8.6000e-004 | 1.3000e-003 | 0.0000 | 3.6863 | 3.6863 | 1.9000e-004 | 0.0000 | 3.6911 |
| **Maximum** | **1.2380** | **0.0142** | **0.0213** | **4.0000e-005** | **1.6800e-003** | **8.6000e-004** | **2.5300e-003** | **4.5000e-004** | **8.6000e-004** | **1.3000e-003** | **0.0000** | **3.6863** | **3.6863** | **1.9000e-004** | **0.0000** | **3.6911** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 1.2380 | 0.0142 | 0.0213 | 4.0000e-005 | 1.6800e-003 | 8.6000e-004 | 2.5300e-003 | 4.5000e-004 | 8.6000e-004 | 1.3000e-003 | 0.0000 | 3.6863 | 3.6863 | 1.9000e-004 | 0.0000 | 3.6911 |
| **Maximum** | **1.2380** | **0.0142** | **0.0213** | **4.0000e-005** | **1.6800e-003** | **8.6000e-004** | **2.5300e-003** | **4.5000e-004** | **8.6000e-004** | **1.3000e-003** | **0.0000** | **3.6863** | **3.6863** | **1.9000e-004** | **0.0000** | **3.6911** |

| | **ROG** | **NOx** | **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** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **1-1-2021** | **3-31-2021** | 1.2921 | 1.2921 |
| | | **Highest** | 1.2921 | 1.2921 |

## 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 | 0.8176 | 2.0000e-005 | 1.6400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3900e-003 |
| Energy | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 653.7442 | 653.7442 | 0.0244 | 7.8900e-003 | 656.7063 |
| Mobile | 0.1148 | 3.7102 | 0.5600 | 0.0126 | 0.2919 | 0.0140 | 0.3059 | 0.0802 | 0.0134 | 0.0936 | 0.0000 | 1,196.7471 | 1,196.7471 | 0.0688 | 0.0000 | 1,198.4681 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 44.7209 | 0.0000 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 13.0348 | 64.6747 | 77.7094 | 1.3417 | 0.0322 | 120.8530 |
| **Total** | **0.9523** | **3.8920** | **0.7143** | **0.0137** | **0.2919** | **0.0278** | **0.3198** | **0.0802** | **0.0272** | **0.1074** | **57.7557** | **1,915.1691** | **1,972.9248** | **4.0779** | **0.0401** | **2,086.8251** |

## 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 | 0.8176 | 2.0000e-005 | 1.6400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3900e-003 |
| Energy | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 653.7442 | 653.7442 | 0.0244 | 7.8900e-003 | 656.7063 |
| Mobile | 0.1148 | 3.7102 | 0.5600 | 0.0126 | 0.2919 | 0.0140 | 0.3059 | 0.0802 | 0.0134 | 0.0936 | 0.0000 | 1,196.7471 | 1,196.7471 | 0.0688 | 0.0000 | 1,198.4681 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 33.5407 | 0.0000 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 10.4278 | 51.7397 | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| **Total** | **0.9523** | **3.8920** | **0.7143** | **0.0137** | **0.2919** | **0.0278** | **0.3198** | **0.0802** | **0.0272** | **0.1074** | **43.9685** | **1,902.2342** | **1,946.2027** | **3.1488** | **0.0337** | **2,034.9559** |

| | ROG | NOx | 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** | **23.87** | **0.68** | **1.35** | **22.78** | **16.08** | **2.49** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Architectural Coating | Architectural Coating | 1/1/2021 | 1/26/2021 | 5 | 18 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 266,505; Non-Residential Outdoor: 88,835; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 1 | 15.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Architectural Coating - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.2353 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.9700e-003 | 0.0137 | 0.0164 | 3.0000e-005 | | 8.5000e-004 | 8.5000e-004 | | 8.5000e-004 | 8.5000e-004 | 0.0000 | 2.2979 | 2.2979 | 1.6000e-004 | 0.0000 | 2.3019 |
| **Total** | **1.2372** | **0.0137** | **0.0164** | **3.0000e-005** | | **8.5000e-004** | **8.5000e-004** | | **8.5000e-004** | **8.5000e-004** | **0.0000** | **2.2979** | **2.2979** | **1.6000e-004** | **0.0000** | **2.3019** |

**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 | 7.5000e-004 | 4.9000e-004 | 4.9200e-003 | 2.0000e-005 | 1.6800e-003 | 1.0000e-005 | 1.6900e-003 | 4.5000e-004 | 1.0000e-005 | 4.6000e-004 | 0.0000 | 1.3884 | 1.3884 | 3.0000e-005 | 0.0000 | 1.3892 |
| **Total** | **7.5000e-004** | **4.9000e-004** | **4.9200e-003** | **2.0000e-005** | **1.6800e-003** | **1.0000e-005** | **1.6900e-003** | **4.5000e-004** | **1.0000e-005** | **4.6000e-004** | **0.0000** | **1.3884** | **1.3884** | **3.0000e-005** | **0.0000** | **1.3892** |

## 3.2 Architectural Coating - 2021

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.2353 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.9700e-003 | 0.0137 | 0.0164 | 3.0000e-005 | | 8.5000e-004 | 8.5000e-004 | | 8.5000e-004 | 8.5000e-004 | 0.0000 | 2.2979 | 2.2979 | 1.6000e-004 | 0.0000 | 2.3019 |
| **Total** | **1.2372** | **0.0137** | **0.0164** | **3.0000e-005** | | **8.5000e-004** | **8.5000e-004** | | **8.5000e-004** | **8.5000e-004** | **0.0000** | **2.2979** | **2.2979** | **1.6000e-004** | **0.0000** | **2.3019** |

**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 | 7.5000e-004 | 4.9000e-004 | 4.9200e-003 | 2.0000e-005 | 1.6800e-003 | 1.0000e-005 | 1.6900e-003 | 4.5000e-004 | 1.0000e-005 | 4.6000e-004 | 0.0000 | 1.3884 | 1.3884 | 3.0000e-005 | 0.0000 | 1.3892 |
| **Total** | **7.5000e-004** | **4.9000e-004** | **4.9200e-003** | **2.0000e-005** | **1.6800e-003** | **1.0000e-005** | **1.6900e-003** | **4.5000e-004** | **1.0000e-005** | **4.6000e-004** | **0.0000** | **1.3884** | **1.3884** | **3.0000e-005** | **0.0000** | **1.3892** |

## 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 | 0.1148 | 3.7102 | 0.5600 | 0.0126 | 0.2919 | 0.0140 | 0.3059 | 0.0802 | 0.0134 | 0.0936 | 0.0000 | 1,196.7471 | 1,196.7471 | 0.0688 | 0.0000 | 1,198.4681 |
| Unmitigated | 0.1148 | 3.7102 | 0.5600 | 0.0126 | 0.2919 | 0.0140 | 0.3059 | 0.0802 | 0.0134 | 0.0936 | 0.0000 | 1,196.7471 | 1,196.7471 | 0.0688 | 0.0000 | 1,198.4681 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Heavy Industry | 55.08 | 55.08 | 55.08 | 683,646 | 683,646 |
| Total | 55.08 | 55.08 | 55.08 | 683,646 | 683,646 |

## 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 |
| General Heavy Industry | 34.10 | 34.10 | 34.10 | 59.00 | 28.00 | 13.00 | 100 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Heavy Industry | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

## 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 | 455.8726 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 455.8726 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| NaturalGas Mitigated | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| NaturalGas Unmitigated | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |

## 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 | | | | | |
| General Heavy Industry | 3.70797e+006 | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| **Total** | | **0.0200** | **0.1818** | **0.1527** | **1.0900e-003** | | **0.0138** | **0.0138** | | **0.0138** | **0.0138** | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

**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 | | | | | |
| General Heavy Industry | 3.70797e+006 | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| **Total** | | **0.0200** | **0.1818** | **0.1527** | **1.0900e-003** | | **0.0138** | **0.0138** | | **0.0138** | **0.0138** | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| **Total** | | **455.8726** | **0.0206** | **4.2600e-003** | **457.6589** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| **Total** | | **455.8726** | **0.0206** | **4.2600e-003** | **457.6589** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.8176 | 2.0000e-005 | 1.6400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3900e-003 |
| Unmitigated | 0.8176 | 2.0000e-005 | 1.6400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3900e-003 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.1235 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.6939 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 1.5000e-004 | 2.0000e-005 | 1.6400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3900e-003 |
| **Total** | **0.8176** | **2.0000e-005** | **1.6400e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **3.1700e-003** | **3.1700e-003** | **1.0000e-005** | **0.0000** | **3.3900e-003** |

## 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 | 0.1235 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.6939 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 1.5000e-004 | 2.0000e-005 | 1.6400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3900e-003 |
| **Total** | **0.8176** | **2.0000e-005** | **1.6400e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **3.1700e-003** | **3.1700e-003** | **1.0000e-005** | **0.0000** | **3.3900e-003** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| Unmitigated | 77.7094 | 1.3417 | 0.0322 | 120.8530 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 41.0862 / 0 | 77.7094 | 1.3417 | 0.0322 | 120.8530 |
| **Total** | | **77.7094** | **1.3417** | **0.0322** | **120.8530** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 32.8689 / 0 | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| **Total** | | **62.1675** | **1.0734** | **0.0258** | **96.6824** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Unmitigated | 44.7209 | 2.6429 | 0.0000 | 110.7942 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 220.31 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| **Total** | | **44.7209** | **2.6429** | **0.0000** | **110.7942** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 165.233 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| **Total** | | **33.5407** | **1.9822** | **0.0000** | **83.0957** |

## 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

# CalEEMod Output

# Operations – Heavy Duty LNG Haul Trucks (First Year - 2021)

# Kamm Ave Pistachio LNG Trucks

**Fresno County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Light Industry | 1.00 | 1000sqft | 0.02 | 1,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 3 | | | **Operational Year** | 2021 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 641.35 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Project Characteristics -

Land Use -

Construction Phase -

Vehicle Trips - 84 trips over 6 week harvest season. 0.23 ADT Trip Distance to SJVAB boundary with Eastern Kern

Fleet Mix - HHDT only for LNG haul trucks

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblFleetMix | HHD | 0.12 | 1.00 |
| tblFleetMix | LDA | 0.49 | 0.00 |
| tblFleetMix | LDT1 | 0.03 | 0.00 |
| tblFleetMix | LDT2 | 0.17 | 0.00 |
| tblFleetMix | LHD1 | 0.02 | 0.00 |
| tblFleetMix | LHD2 | 4.7320e-003 | 0.00 |
| tblFleetMix | MCY | 5.1540e-003 | 0.00 |
| tblFleetMix | MDV | 0.12 | 0.00 |
| tblFleetMix | MH | 6.2900e-004 | 0.00 |
| tblFleetMix | MHD | 0.03 | 0.00 |
| tblFleetMix | OBUS | 2.3660e-003 | 0.00 |
| tblFleetMix | SBUS | 1.0970e-003 | 0.00 |
| tblFleetMix | UBUS | 1.5900e-003 | 0.00 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblVehicleTrips | CC_TL | 6.60 | 152.00 |
| tblVehicleTrips | CNW_TL | 6.60 | 152.00 |
| tblVehicleTrips | CW_TL | 14.70 | 152.00 |
| tblVehicleTrips | DV_TP | 5.00 | 0.00 |
| tblVehicleTrips | PB_TP | 3.00 | 0.00 |
| tblVehicleTrips | PR_TP | 92.00 | 100.00 |
| tblVehicleTrips | ST_TR | 1.32 | 0.23 |
| tblVehicleTrips | SU_TR | 0.68 | 0.23 |
| tblVehicleTrips | WD_TR | 6.97 | 0.23 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2022 | 7.4600e-003 | 3.5200e-003 | 4.5300e-003 | 1.0000e-005 | 0.0000 | 2.0000e-004 | 2.0000e-004 | 0.0000 | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.6383 | 0.6383 | 4.0000e-005 | 0.0000 | 0.6394 |
| **Maximum** | **7.4600e-003** | **3.5200e-003** | **4.5300e-003** | **1.0000e-005** | **0.0000** | **2.0000e-004** | **2.0000e-004** | **0.0000** | **2.0000e-004** | **2.0000e-004** | **0.0000** | **0.6383** | **0.6383** | **4.0000e-005** | **0.0000** | **0.6394** |

### 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 | 7.4600e-003 | 3.5200e-003 | 4.5300e-003 | 1.0000e-005 | 0.0000 | 2.0000e-004 | 2.0000e-004 | 0.0000 | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.6383 | 0.6383 | 4.0000e-005 | 0.0000 | 0.6394 |
| **Maximum** | **7.4600e-003** | **3.5200e-003** | **4.5300e-003** | **1.0000e-005** | **0.0000** | **2.0000e-004** | **2.0000e-004** | **0.0000** | **2.0000e-004** | **2.0000e-004** | **0.0000** | **0.6383** | **0.6383** | **4.0000e-005** | **0.0000** | **0.6394** |

| | **ROG** | **NOx** | **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** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **2** | **11-1-2021** | **1-31-2022** | 0.0110 | 0.0110 |
| | | **Highest** | 0.0110 | 0.0110 |

## 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 | 4.6000e-003 | 0.0000 | 1.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0000 | 2.0000e-005 |
| Energy | 1.1000e-004 | 1.0200e-003 | 8.6000e-004 | 1.0000e-005 | | 8.0000e-005 | 8.0000e-005 | | 8.0000e-005 | 8.0000e-005 | 0.0000 | 3.6795 | 3.6795 | 1.4000e-004 | 4.0000e-005 | 3.6962 |
| Mobile | 1.8700e-003 | 0.0548 | 9.2300e-003 | 2.2000e-004 | 5.4300e-003 | 2.5000e-004 | 5.6900e-003 | 1.4900e-003 | 2.4000e-004 | 1.7400e-003 | 0.0000 | 20.5910 | 20.5910 | 4.1000e-004 | 0.0000 | 20.6014 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.2517 | 0.0000 | 0.2517 | 0.0149 | 0.0000 | 0.6236 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0734 | 0.3640 | 0.4374 | 7.5500e-003 | 1.8000e-004 | 0.6802 |
| **Total** | **6.5800e-003** | **0.0558** | **0.0101** | **2.3000e-004** | **5.4300e-003** | **3.3000e-004** | **5.7700e-003** | **1.4900e-003** | **3.2000e-004** | **1.8200e-003** | **0.3251** | **24.6346** | **24.9597** | **0.0230** | **2.2000e-004** | **25.6014** |

## 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 | 4.6000e-003 | 0.0000 | 1.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0000 | 2.0000e-005 |
| Energy | 1.1000e-004 | 1.0200e-003 | 8.6000e-004 | 1.0000e-005 | | 8.0000e-005 | 8.0000e-005 | | 8.0000e-005 | 8.0000e-005 | 0.0000 | 3.6795 | 3.6795 | 1.4000e-004 | 4.0000e-005 | 3.6962 |
| Mobile | 1.8700e-003 | 0.0548 | 9.2300e-003 | 2.2000e-004 | 5.4300e-003 | 2.5000e-004 | 5.6900e-003 | 1.4900e-003 | 2.4000e-004 | 1.7400e-003 | 0.0000 | 20.5910 | 20.5910 | 4.1000e-004 | 0.0000 | 20.6014 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.2517 | 0.0000 | 0.2517 | 0.0149 | 0.0000 | 0.6236 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0734 | 0.3640 | 0.4374 | 7.5500e-003 | 1.8000e-004 | 0.6802 |
| **Total** | **6.5800e-003** | **0.0558** | **0.0101** | **2.3000e-004** | **5.4300e-003** | **3.3000e-004** | **5.7700e-003** | **1.4900e-003** | **3.2000e-004** | **1.8200e-003** | **0.3251** | **24.6346** | **24.9597** | **0.0230** | **2.2000e-004** | **25.6014** |

| | ROG | NOx | 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 | Architectural Coating | Architectural Coating | 1/13/2022 | 1/19/2022 | 5 | 5 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 1 | 0.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Architectural Coating - 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 | | | | | |
| Archit. Coating | 6.9500e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.1000e-004 | 3.5200e-003 | 4.5300e-003 | 1.0000e-005 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.6383 | 0.6383 | 4.0000e-005 | 0.0000 | 0.6394 |
| **Total** | **7.4600e-003** | **3.5200e-003** | **4.5300e-003** | **1.0000e-005** | | **2.0000e-004** | **2.0000e-004** | | **2.0000e-004** | **2.0000e-004** | **0.0000** | **0.6383** | **0.6383** | **4.0000e-005** | **0.0000** | **0.6394** |

**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 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 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** | **0.0000** | **0.0000** |

## 3.2 Architectural Coating - 2022

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 6.9500e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.1000e-004 | 3.5200e-003 | 4.5300e-003 | 1.0000e-005 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.6383 | 0.6383 | 4.0000e-005 | 0.0000 | 0.6394 |
| **Total** | **7.4600e-003** | **3.5200e-003** | **4.5300e-003** | **1.0000e-005** | | **2.0000e-004** | **2.0000e-004** | | **2.0000e-004** | **2.0000e-004** | **0.0000** | **0.6383** | **0.6383** | **4.0000e-005** | **0.0000** | **0.6394** |

**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 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 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** | **0.0000** | **0.0000** |

## 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 | 1.8700e-003 | 0.0548 | 9.2300e-003 | 2.2000e-004 | 5.4300e-003 | 2.5000e-004 | 5.6900e-003 | 1.4900e-003 | 2.4000e-004 | 1.7400e-003 | 0.0000 | 20.5910 | 20.5910 | 4.1000e-004 | 0.0000 | 20.6014 |
| Unmitigated | 1.8700e-003 | 0.0548 | 9.2300e-003 | 2.2000e-004 | 5.4300e-003 | 2.5000e-004 | 5.6900e-003 | 1.4900e-003 | 2.4000e-004 | 1.7400e-003 | 0.0000 | 20.5910 | 20.5910 | 4.1000e-004 | 0.0000 | 20.6014 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Light Industry | 0.23 | 0.23 | 0.23 | 12,725 | 12,725 |
| Total | 0.23 | 0.23 | 0.23 | 12,725 | 12,725 |

## 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 |
| General Light Industry | 152.00 | 152.00 | 152.00 | 59.00 | 28.00 | 13.00 | 100 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Light Industry | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

## 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 | 2.5658 | 2.5658 | 1.2000e-004 | 2.0000e-005 | 2.5759 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.5658 | 2.5658 | 1.2000e-004 | 2.0000e-005 | 2.5759 |
| NaturalGas Mitigated | 1.1000e-004 | 1.0200e-003 | 8.6000e-004 | 1.0000e-005 | | 8.0000e-005 | 8.0000e-005 | | 8.0000e-005 | 8.0000e-005 | 0.0000 | 1.1137 | 1.1137 | 2.0000e-005 | 2.0000e-005 | 1.1203 |
| NaturalGas Unmitigated | 1.1000e-004 | 1.0200e-003 | 8.6000e-004 | 1.0000e-005 | | 8.0000e-005 | 8.0000e-005 | | 8.0000e-005 | 8.0000e-005 | 0.0000 | 1.1137 | 1.1137 | 2.0000e-005 | 2.0000e-005 | 1.1203 |

## 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 | | | | | |
| General Light Industry | 20870 | 1.1000e-004 | 1.0200e-003 | 8.6000e-004 | 1.0000e-005 | | 8.0000e-005 | 8.0000e-005 | | 8.0000e-005 | 8.0000e-005 | 0.0000 | 1.1137 | 1.1137 | 2.0000e-005 | 2.0000e-005 | 1.1203 |
| **Total** | | **1.1000e-004** | **1.0200e-003** | **8.6000e-004** | **1.0000e-005** | | **8.0000e-005** | **8.0000e-005** | | **8.0000e-005** | **8.0000e-005** | **0.0000** | **1.1137** | **1.1137** | **2.0000e-005** | **2.0000e-005** | **1.1203** |

**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 | | | | | |
| General Light Industry | 20870 | 1.1000e-004 | 1.0200e-003 | 8.6000e-004 | 1.0000e-005 | | 8.0000e-005 | 8.0000e-005 | | 8.0000e-005 | 8.0000e-005 | 0.0000 | 1.1137 | 1.1137 | 2.0000e-005 | 2.0000e-005 | 1.1203 |
| **Total** | | **1.1000e-004** | **1.0200e-003** | **8.6000e-004** | **1.0000e-005** | | **8.0000e-005** | **8.0000e-005** | | **8.0000e-005** | **8.0000e-005** | **0.0000** | **1.1137** | **1.1137** | **2.0000e-005** | **2.0000e-005** | **1.1203** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Light Industry | 8820 | 2.5658 | 1.2000e-004 | 2.0000e-005 | 2.5759 |
| **Total** | | **2.5658** | **1.2000e-004** | **2.0000e-005** | **2.5759** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Light Industry | 8820 | 2.5658 | 1.2000e-004 | 2.0000e-005 | 2.5759 |
| **Total** | | **2.5658** | **1.2000e-004** | **2.0000e-005** | **2.5759** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 4.6000e-003 | 0.0000 | 1.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0000 | 2.0000e-005 |
| Unmitigated | 4.6000e-003 | 0.0000 | 1.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0000 | 2.0000e-005 |

## 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 | 7.0000e-004 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 3.9100e-003 | | | | | 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 | 1.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0000 | 2.0000e-005 |
| **Total** | **4.6100e-003** | **0.0000** | **1.0000e-005** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0000** | **2.0000e-005** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 7.0000e-004 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 3.9100e-003 | | | | | 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 | 1.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0000 | 2.0000e-005 |
| **Total** | **4.6100e-003** | **0.0000** | **1.0000e-005** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0000** | **2.0000e-005** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 0.4374 | 7.5500e-003 | 1.8000e-004 | 0.6802 |
| Unmitigated | 0.4374 | 7.5500e-003 | 1.8000e-004 | 0.6802 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Light Industry | 0.23125 / 0 | 0.4374 | 7.5500e-003 | 1.8000e-004 | 0.6802 |
| **Total** | | **0.4374** | **7.5500e-003** | **1.8000e-004** | **0.6802** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Light Industry | 0.23125 / 0 | 0.4374 | 7.5500e-003 | 1.8000e-004 | 0.6802 |
| **Total** | | **0.4374** | **7.5500e-003** | **1.8000e-004** | **0.6802** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 0.2517 | 0.0149 | 0.0000 | 0.6236 |
| Unmitigated | 0.2517 | 0.0149 | 0.0000 | 0.6236 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Light Industry | 1.24 | 0.2517 | 0.0149 | 0.0000 | 0.6236 |
| **Total** | | **0.2517** | **0.0149** | **0.0000** | **0.6236** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Light Industry | 1.24 | 0.2517 | 0.0149 | 0.0000 | 0.6236 |
| **Total** | | **0.2517** | **0.0149** | **0.0000** | **0.6236** |

## 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

# CalEEMod Output

# Construction and Ops (Employee) (Daily)

# Kamm Ave Pistachio Plant Emp Ops Peak Daily 2021

**Fresno County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Heavy Industry | 177.67 | 1000sqft | 4.08 | 177,670.00 | 0 |
| Other Non-Asphalt Surfaces | 128.90 | Acre | 128.90 | 5,614,884.00 | 0 |
| Parking Lot | 1.60 | Acre | 1.60 | 69,696.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 3 | | | **Operational Year** | 2021 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 641.35 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Kamm Ave Pistachio Plant Emp Ops Peak Daily 2021 - Fresno County, Summer

Project Characteristics -

Land Use - Site Area 315 Acres, Disturbed Area 134.6 acres

Construction Phase - Developers schedule

Off-road Equipment - Increased equipment to reflect shorter than default schedule

Off-road Equipment - Added 3 Aerial Lifts for construction of silos and tanks. Increased equipment by 100 percent to reflect shorter than default schedule.

Off-road Equipment - Limited site prep and grading required at site.

Off-road Equipment - Equipment reduced to reflect limited paving required.

Off-road Equipment - Limited Site Prep and Grading required at the site

Trips and VMT - Vendor trips include cement trucks and building materials. 778 haul trips assumed for road base on approx 9.6 acres

Grading -

Architectural Coating - Rule 4601 Architectural Coatings rule compliance. 1.6 acre parking lots

Vehicle Trips - Employees only ADT = 212 Trips/KSF = 1.19

Construction Off-road Equipment Mitigation - Tier 3 Mitigation

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings compliance

Water Mitigation -

Waste Mitigation -

Fleet Mix - Employee Fleet Mix No Truck

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | ConstArea_Parking | 341,075.00 | 69,696.00 |
| tblArchitecturalCoating | EF_Nonresidential_Exterior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Nonresidential_Interior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Parking | 150.00 | 100.00 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 150 | 65 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 150 | 65 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 12.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |

Kamm Ave Pistachio Plant Emp Ops Peak Daily 2021 - Fresno County, Summer

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstructionPhase | NumDays | 120.00 | 10.00 |
| tblConstructionPhase | NumDays | 310.00 | 30.00 |
| tblConstructionPhase | NumDays | 3,100.00 | 100.00 |
| tblConstructionPhase | NumDays | 220.00 | 5.00 |
| tblConstructionPhase | NumDays | 220.00 | 15.00 |
| tblFleetMix | HHD | 0.12 | 0.00 |
| tblFleetMix | LDA | 0.49 | 0.61 |
| tblFleetMix | LDT1 | 0.03 | 0.04 |
| tblFleetMix | LDT2 | 0.17 | 0.21 |
| tblFleetMix | LHD1 | 0.02 | 0.00 |
| tblFleetMix | LHD2 | 4.7320e-003 | 0.00 |
| tblFleetMix | MCY | 5.1540e-003 | 0.00 |
| tblFleetMix | MDV | 0.12 | 0.15 |
| tblFleetMix | MH | 6.2900e-004 | 0.00 |
| tblFleetMix | MHD | 0.03 | 0.00 |
| tblFleetMix | OBUS | 2.3660e-003 | 0.00 |
| tblFleetMix | SBUS | 1.0970e-003 | 0.00 |
| tblFleetMix | UBUS | 1.5900e-003 | 0.00 |
| tblGrading | AcresOfGrading | 75.00 | 775.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| 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 | 6.00 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |

| | | | |
|---|---|---|---|
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 778.00 |
| tblTripsAndVMT | VendorTripNumber | 961.00 | 50.00 |
| tblTripsAndVMT | WorkerTripNumber | 2,462.00 | 200.00 |
| tblTripsAndVMT | WorkerTripNumber | 492.00 | 10.00 |
| tblVehicleTrips | CC_TL | 6.60 | 0.50 |
| tblVehicleTrips | CNW_TL | 6.60 | 0.50 |
| tblVehicleTrips | CW_TL | 14.70 | 0.50 |
| tblVehicleTrips | ST_TR | 1.50 | 1.19 |
| tblVehicleTrips | SU_TR | 1.50 | 0.00 |
| tblVehicleTrips | WD_TR | 1.50 | 0.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2021 | 93.4048 | 46.4670 | 37.1662 | 0.0896 | 33.6738 | 2.0458 | 35.6606 | 9.9917 | 1.8821 | 11.8738 | 0.0000 | 8,843.6448 | 8,843.6448 | 1.9488 | 0.0000 | 8,880.3452 |
| **Maximum** | **93.4048** | **46.4670** | **37.1662** | **0.0896** | **33.6738** | **2.0458** | **35.6606** | **9.9917** | **1.8821** | **11.8738** | **0.0000** | **8,843.6448** | **8,843.6448** | **1.9488** | **0.0000** | **8,880.3452** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2021 | 93.0859 | 32.0117 | 40.1737 | 0.0896 | 13.2886 | 1.5469 | 14.5895 | 3.9339 | 1.5448 | 4.8813 | 0.0000 | 8,843.6448 | 8,843.6448 | 1.9488 | 0.0000 | 8,880.3452 |
| **Maximum** | **93.0859** | **32.0117** | **40.1737** | **0.0896** | **13.2886** | **1.5469** | **14.5895** | **3.9339** | **1.5448** | **4.8813** | **0.0000** | **8,843.6448** | **8,843.6448** | **1.9488** | **0.0000** | **8,880.3452** |

| | **ROG** | **NOx** | **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** | **0.34** | **31.11** | **-8.09** | **0.00** | **60.54** | **24.39** | **59.09** | **60.63** | **17.92** | **58.89** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 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 | 7.1451 | 2.9000e-004 | 0.0316 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | | 0.0674 | 0.0674 | 1.8000e-004 | | 0.0719 |
| Energy | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |
| Mobile | 0.3183 | 0.0825 | 0.9788 | 1.1300e-003 | 0.0754 | 1.4900e-003 | 0.0769 | 0.0200 | 1.3700e-003 | 0.0214 | | 111.5434 | 111.5434 | 5.4600e-003 | | 111.6801 |
| **Total** | **7.5729** | **1.0787** | **1.8470** | **7.1100e-003** | **0.0754** | **0.0773** | **0.1527** | **0.0200** | **0.0772** | **0.0972** | | **1,306.7673** | **1,306.7673** | **0.0286** | **0.0219** | **1,314.0106** |

### 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 | 6.7616 | 2.9000e-004 | 0.0316 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | | 0.0674 | 0.0674 | 1.8000e-004 | | 0.0719 |
| Energy | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |
| Mobile | 0.3183 | 0.0825 | 0.9788 | 1.1300e-003 | 0.0754 | 1.4900e-003 | 0.0769 | 0.0200 | 1.3700e-003 | 0.0214 | | 111.5434 | 111.5434 | 5.4600e-003 | | 111.6801 |
| **Total** | **7.1894** | **1.0787** | **1.8470** | **7.1100e-003** | **0.0754** | **0.0773** | **0.1527** | **0.0200** | **0.0772** | **0.0972** | | **1,306.7673** | **1,306.7673** | **0.0286** | **0.0219** | **1,314.0106** |

| | ROG | NOx | 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** | **5.06** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2021 | 1/14/2021 | 5 | 10 | |
| 2 | Grading | Grading | 1/15/2021 | 2/25/2021 | 5 | 30 | |
| 3 | Building Construction | Building Construction | 2/26/2021 | 7/15/2021 | 5 | 100 | |
| 4 | Paving | Paving | 7/16/2021 | 7/22/2021 | 5 | 5 | |
| 5 | Architectural Coating | Architectural Coating | 7/23/2021 | 8/12/2021 | 5 | 15 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 775**

**Acres of Paving: 130.5**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 266,505; Non-Residential Outdoor: 88,835; Striped Parking Area: 69,696 (Architectural Coating – sqft)**

**OffRoad Equipment**

Kamm Ave Pistachio Plant Emp Ops Peak Daily 2021 - Fresno County, Summer

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Aerial Lifts | 3 | 8.00 | 63 | 0.31 |
| Building Construction | Cranes | 2 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 6 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 1 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 1 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 1 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 2 | 6.00 | 78 | 0.48 |

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 16 | 200.00 | 50.00 | 778.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 3 | 8.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 2 | 10.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

## 3.2 Site Preparation - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.8882 | 40.4971 | 21.1543 | 0.0380 | | 2.0445 | 2.0445 | | 1.8809 | 1.8809 | | 3,685.6569 | 3,685.6569 | 1.1920 | | 3,715.4573 |
| **Total** | **3.8882** | **40.4971** | **21.1543** | **0.0380** | **18.0663** | **2.0445** | **20.1107** | **9.9307** | **1.8809** | **11.8116** | | **3,685.6569** | **3,685.6569** | **1.1920** | | **3,715.4573** |

## 3.2 Site Preparation - 2021

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 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 | 0.1096 | 0.0604 | 0.7760 | 2.2500e-003 | 0.2299 | 1.3300e-003 | 0.2312 | 0.0610 | 1.2200e-003 | 0.0622 | | 223.9310 | 223.9310 | 5.4300e-003 | | 224.0666 |
| **Total** | **0.1096** | **0.0604** | **0.7760** | **2.2500e-003** | **0.2299** | **1.3300e-003** | **0.2312** | **0.0610** | **1.2200e-003** | **0.0622** | | **223.9310** | **223.9310** | **5.4300e-003** | | **224.0666** |

### 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 | | | | | 7.0458 | 0.0000 | 7.0458 | 3.8730 | 0.0000 | 3.8730 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.9312 | 19.0656 | 22.9600 | 0.0380 | | 0.9462 | 0.9462 | | 0.9462 | 0.9462 | 0.0000 | 3,685.6569 | 3,685.6569 | 1.1920 | | 3,715.4573 |
| **Total** | **0.9312** | **19.0656** | **22.9600** | **0.0380** | **7.0458** | **0.9462** | **7.9920** | **3.8730** | **0.9462** | **4.8191** | **0.0000** | **3,685.6569** | **3,685.6569** | **1.1920** | | **3,715.4573** |

## 3.2 Site Preparation - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 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 | 0.1096 | 0.0604 | 0.7760 | 2.2500e-003 | 0.2299 | 1.3300e-003 | 0.2312 | 0.0610 | 1.2200e-003 | 0.0622 | | 223.9310 | 223.9310 | 5.4300e-003 | | 224.0666 |
| **Total** | **0.1096** | **0.0604** | **0.7760** | **2.2500e-003** | **0.2299** | **1.3300e-003** | **0.2312** | **0.0610** | **1.2200e-003** | **0.0622** | | **223.9310** | **223.9310** | **5.4300e-003** | | **224.0666** |

## 3.3 Grading - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 33.4184 | 0.0000 | 33.4184 | 6.2684 | 0.0000 | 6.2684 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.1912 | 46.3998 | 30.8785 | 0.0620 | | 1.9853 | 1.9853 | | 1.8265 | 1.8265 | | 6,007.0434 | 6,007.0434 | 1.9428 | | 6,055.6134 |
| **Total** | **4.1912** | **46.3998** | **30.8785** | **0.0620** | **33.4184** | **1.9853** | **35.4037** | **6.2684** | **1.8265** | **8.0949** | | **6,007.0434** | **6,007.0434** | **1.9428** | | **6,055.6134** |

## 3.3 Grading - 2021

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 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 | 0.1218 | 0.0672 | 0.8623 | 2.5000e-003 | 0.2555 | 1.4800e-003 | 0.2569 | 0.0678 | 1.3600e-003 | 0.0691 | | 248.8122 | 248.8122 | 6.0300e-003 | | 248.9629 |
| **Total** | **0.1218** | **0.0672** | **0.8623** | **2.5000e-003** | **0.2555** | **1.4800e-003** | **0.2569** | **0.0678** | **1.3600e-003** | **0.0691** | | **248.8122** | **248.8122** | **6.0300e-003** | | **248.9629** |

### 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 | | | | | 13.0332 | 0.0000 | 13.0332 | 2.4447 | 0.0000 | 2.4447 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.5231 | 29.9782 | 36.7226 | 0.0620 | | 1.2994 | 1.2994 | | 1.2994 | 1.2994 | 0.0000 | 6,007.0434 | 6,007.0434 | 1.9428 | | 6,055.6134 |
| **Total** | **1.5231** | **29.9782** | **36.7226** | **0.0620** | **13.0332** | **1.2994** | **14.3326** | **2.4447** | **1.2994** | **3.7441** | **0.0000** | **6,007.0434** | **6,007.0434** | **1.9428** | | **6,055.6134** |

## 3.3 Grading - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 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 | 0.1218 | 0.0672 | 0.8623 | 2.5000e-003 | 0.2555 | 1.4800e-003 | 0.2569 | 0.0678 | 1.3600e-003 | 0.0691 | | 248.8122 | 248.8122 | 6.0300e-003 | | 248.9629 |
| **Total** | **0.1218** | **0.0672** | **0.8623** | **2.5000e-003** | **0.2555** | **1.4800e-003** | **0.2569** | **0.0678** | **1.3600e-003** | **0.0691** | | **248.8122** | **248.8122** | **6.0300e-003** | | **248.9629** |

## 3.4 Building Construction - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.8663 | 28.4536 | 27.5255 | 0.0452 | | 1.4587 | 1.4587 | | 1.3613 | 1.3613 | | 4,319.9826 | 4,319.9826 | 1.1874 | | 4,349.6669 |
| **Total** | **2.8663** | **28.4536** | **27.5255** | **0.0452** | | **1.4587** | **1.4587** | | **1.3613** | **1.3613** | | **4,319.9826** | **4,319.9826** | **1.1874** | | **4,349.6669** |

## 3.4 Building Construction - 2021

### 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 | 0.0577 | 1.9681 | 0.2682 | 6.2000e-003 | 0.1362 | 6.5400e-003 | 0.1428 | 0.0374 | 6.2600e-003 | 0.0436 | | 651.1653 | 651.1653 | 0.0530 | | 652.4899 |
| Vendor | 0.1400 | 5.3634 | 0.7500 | 0.0132 | 0.3064 | 0.0136 | 0.3200 | 0.0882 | 0.0130 | 0.1013 | | 1,384.3753 | 1,384.3753 | 0.1674 | | 1,388.5594 |
| Worker | 1.2181 | 0.6715 | 8.6225 | 0.0250 | 2.5546 | 0.0148 | 2.5694 | 0.6775 | 0.0136 | 0.6911 | | 2,488.1217 | 2,488.1217 | 0.0603 | | 2,489.6289 |
| **Total** | **1.4157** | **8.0030** | **9.6407** | **0.0444** | **2.9973** | **0.0349** | **3.0322** | **0.8031** | **0.0329** | **0.8359** | | **4,523.6622** | **4,523.6622** | **0.2806** | | **4,530.6782** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.1214 | 24.0087 | 30.5330 | 0.0452 | | 1.5120 | 1.5120 | | 1.5120 | 1.5120 | 0.0000 | 4,319.9826 | 4,319.9826 | 1.1874 | | 4,349.6669 |
| **Total** | **1.1214** | **24.0087** | **30.5330** | **0.0452** | | **1.5120** | **1.5120** | | **1.5120** | **1.5120** | **0.0000** | **4,319.9826** | **4,319.9826** | **1.1874** | | **4,349.6669** |

## 3.4 Building Construction - 2021

**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 | 0.0577 | 1.9681 | 0.2682 | 6.2000e-003 | 0.1362 | 6.5400e-003 | 0.1428 | 0.0374 | 6.2600e-003 | 0.0436 | | 651.1653 | 651.1653 | 0.0530 | | 652.4899 |
| Vendor | 0.1400 | 5.3634 | 0.7500 | 0.0132 | 0.3064 | 0.0136 | 0.3200 | 0.0882 | 0.0130 | 0.1013 | | 1,384.3753 | 1,384.3753 | 0.1674 | | 1,388.5594 |
| Worker | 1.2181 | 0.6715 | 8.6225 | 0.0250 | 2.5546 | 0.0148 | 2.5694 | 0.6775 | 0.0136 | 0.6911 | | 2,488.1217 | 2,488.1217 | 0.0603 | | 2,489.6289 |
| **Total** | **1.4157** | **8.0030** | **9.6407** | **0.0444** | **2.9973** | **0.0349** | **3.0322** | **0.8031** | **0.0329** | **0.8359** | | **4,523.6622** | **4,523.6622** | **0.2806** | | **4,530.6782** |

## 3.5 Paving - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.6278 | 6.4596 | 7.3266 | 0.0114 | | 0.3389 | 0.3389 | | 0.3118 | 0.3118 | | 1,103.6054 | 1,103.6054 | 0.3569 | | 1,112.5286 |
| Paving | 0.8384 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.4662** | **6.4596** | **7.3266** | **0.0114** | | **0.3389** | **0.3389** | | **0.3118** | **0.3118** | | **1,103.6054** | **1,103.6054** | **0.3569** | | **1,112.5286** |

## 3.5 Paving - 2021

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 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 | 0.0487 | 0.0269 | 0.3449 | 1.0000e-003 | 0.1022 | 5.9000e-004 | 0.1028 | 0.0271 | 5.4000e-004 | 0.0276 | | 99.5249 | 99.5249 | 2.4100e-003 | | 99.5852 |
| **Total** | **0.0487** | **0.0269** | **0.3449** | **1.0000e-003** | **0.1022** | **5.9000e-004** | **0.1028** | **0.0271** | **5.4000e-004** | **0.0276** | | **99.5249** | **99.5249** | **2.4100e-003** | | **99.5852** |

### 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 | 0.2805 | 5.6476 | 8.6478 | 0.0114 | | 0.3047 | 0.3047 | | 0.3047 | 0.3047 | 0.0000 | 1,103.6054 | 1,103.6054 | 0.3569 | | 1,112.5286 |
| Paving | 0.8384 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.1189** | **5.6476** | **8.6478** | **0.0114** | | **0.3047** | **0.3047** | | **0.3047** | **0.3047** | **0.0000** | **1,103.6054** | **1,103.6054** | **0.3569** | | **1,112.5286** |

## 3.5 Paving - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 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 | 0.0487 | 0.0269 | 0.3449 | 1.0000e-003 | 0.1022 | 5.9000e-004 | 0.1028 | 0.0271 | 5.4000e-004 | 0.0276 | | 99.5249 | 99.5249 | 2.4100e-003 | | 99.5852 |
| **Total** | **0.0487** | **0.0269** | **0.3449** | **1.0000e-003** | **0.1022** | **5.9000e-004** | **0.1028** | **0.0271** | **5.4000e-004** | **0.0276** | | **99.5249** | **99.5249** | **2.4100e-003** | | **99.5852** |

## 3.6 Architectural Coating - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 92.9061 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.4378 | 3.0537 | 3.6351 | 5.9400e-003 | | 0.1882 | 0.1882 | | 0.1882 | 0.1882 | | 562.8961 | 562.8961 | 0.0386 | | 563.8618 |
| **Total** | **93.3439** | **3.0537** | **3.6351** | **5.9400e-003** | | **0.1882** | **0.1882** | | **0.1882** | **0.1882** | | **562.8961** | **562.8961** | **0.0386** | | **563.8618** |

## 3.6 Architectural Coating - 2021

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 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 | 0.0609 | 0.0336 | 0.4311 | 1.2500e-003 | 0.1277 | 7.4000e-004 | 0.1285 | 0.0339 | 6.8000e-004 | 0.0346 | | 124.4061 | 124.4061 | 3.0100e-003 | | 124.4815 |
| **Total** | **0.0609** | **0.0336** | **0.4311** | **1.2500e-003** | **0.1277** | **7.4000e-004** | **0.1285** | **0.0339** | **6.8000e-004** | **0.0346** | | **124.4061** | **124.4061** | **3.0100e-003** | | **124.4815** |

**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 | | | | | |
| Archit. Coating | 92.9061 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1189 | 2.7140 | 3.6648 | 5.9400e-003 | | 0.1902 | 0.1902 | | 0.1902 | 0.1902 | 0.0000 | 562.8961 | 562.8961 | 0.0386 | | 563.8618 |
| **Total** | **93.0250** | **2.7140** | **3.6648** | **5.9400e-003** | | **0.1902** | **0.1902** | | **0.1902** | **0.1902** | **0.0000** | **562.8961** | **562.8961** | **0.0386** | | **563.8618** |

## 3.6 Architectural Coating - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 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 | 0.0609 | 0.0336 | 0.4311 | 1.2500e-003 | 0.1277 | 7.4000e-004 | 0.1285 | 0.0339 | 6.8000e-004 | 0.0346 | | 124.4061 | 124.4061 | 3.0100e-003 | | 124.4815 |
| **Total** | **0.0609** | **0.0336** | **0.4311** | **1.2500e-003** | **0.1277** | **7.4000e-004** | **0.1285** | **0.0339** | **6.8000e-004** | **0.0346** | | **124.4061** | **124.4061** | **3.0100e-003** | | **124.4815** |

# 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 | 0.3183 | 0.0825 | 0.9788 | 1.1300e-003 | 0.0754 | 1.4900e-003 | 0.0769 | 0.0200 | 1.3700e-003 | 0.0214 | | 111.5434 | 111.5434 | 5.4600e-003 | | 111.6801 |
| Unmitigated | 0.3183 | 0.0825 | 0.9788 | 1.1300e-003 | 0.0754 | 1.4900e-003 | 0.0769 | 0.0200 | 1.3700e-003 | 0.0214 | | 111.5434 | 111.5434 | 5.4600e-003 | | 111.6801 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Heavy Industry | 0.00 | 211.43 | 0.00 | 5,159 | 5,159 |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 211.43 | 0.00 | 5,159 | 5,159 |

## 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 |
| General Heavy Industry | 0.50 | 0.50 | 0.50 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |
| Other Non-Asphalt Surfaces | 14.70 | 6.60 | 6.60 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Parking Lot | 14.70 | 6.60 | 6.60 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Heavy Industry | 0.607139 | 0.039400 | 0.208980 | 0.149930 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Other Non-Asphalt Surfaces | 0.487139 | 0.031901 | 0.169199 | 0.121386 | 0.017033 | 0.004732 | 0.033028 | 0.124746 | 0.002366 | 0.001590 | 0.005154 | 0.001097 | 0.000629 |
| Parking Lot | 0.487139 | 0.031901 | 0.169199 | 0.121386 | 0.017033 | 0.004732 | 0.033028 | 0.124746 | 0.002366 | 0.001590 | 0.005154 | 0.001097 | 0.000629 |

## 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 | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |
| NaturalGas Unmitigated | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |

## 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 | | | | | |
| General Heavy Industry | 10158.8 | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |
| Other Non-Asphalt Surfaces | 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 |
| 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 |
| **Total** | | **0.1096** | **0.9960** | **0.8366** | **5.9800e-003** | | **0.0757** | **0.0757** | | **0.0757** | **0.0757** | | **1,195.1565** | **1,195.1565** | **0.0229** | **0.0219** | **1,202.2587** |

**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 | | | | | |
| General Heavy Industry | 10.1588 | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |
| Other Non-Asphalt Surfaces | 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 |
| 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 |
| **Total** | | **0.1096** | **0.9960** | **0.8366** | **5.9800e-003** | | **0.0757** | **0.0757** | | **0.0757** | **0.0757** | | **1,195.1565** | **1,195.1565** | **0.0229** | **0.0219** | **1,202.2587** |

## 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

| | ROG | NOx | CO | SO2 | Fugitive 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 | 6.7616 | 2.9000e-004 | 0.0316 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | | 0.0674 | 0.0674 | 1.8000e-004 | | 0.0719 |
| Unmitigated | 7.1451 | 2.9000e-004 | 0.0316 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | | 0.0674 | 0.0674 | 1.8000e-004 | | 0.0719 |

## 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 | 1.3265 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 5.8156 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 2.9500e-003 | 2.9000e-004 | 0.0316 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | | 0.0674 | 0.0674 | 1.8000e-004 | | 0.0719 |
| **Total** | **7.1451** | **2.9000e-004** | **0.0316** | **0.0000** | | **1.1000e-004** | **1.1000e-004** | | **1.1000e-004** | **1.1000e-004** | | **0.0674** | **0.0674** | **1.8000e-004** | | **0.0719** |

**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 | 0.9430 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 5.8156 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 2.9500e-003 | 2.9000e-004 | 0.0316 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | | 0.0674 | 0.0674 | 1.8000e-004 | | 0.0719 |
| **Total** | **6.7616** | **2.9000e-004** | **0.0316** | **0.0000** | | **1.1000e-004** | **1.1000e-004** | | **1.1000e-004** | **1.1000e-004** | | **0.0674** | **0.0674** | **1.8000e-004** | | **0.0719** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 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

# CalEEMod Output

# Operations – Maintenance Trucks (Daily)

# Kamm Ave Pistachio Plant Maintenance Trucks Only Peak Daily

**Fresno County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Heavy Industry | 177.67 | 1000sqft | 4.08 | 177,670.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 3 | | | **Operational Year** | 2021 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 641.35 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Kamm Ave Pistachio Plant Maintenance Trucks Only Peak Daily - Fresno County, Summer

Project Characteristics -

Land Use - Site Area 315 Acres

Construction Phase - Developers schedule

Off-road Equipment -

Off-road Equipment - Increased equipment amount to reflect site size

Trips and VMT - Vendor trips include cement trucks for foundations, and delivery trucks for building materials

Grading -

Architectural Coating - Rule 4601 Architectural Coatings rule compliance.  Parking lot 1.08 acres.

Vehicle Trips - Truck trips only. Trip gen 0.016 trips/ksf, Trip Length 50.0 miles

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings compliance

Water Mitigation -

Waste Mitigation -

Fleet Mix - LHD Maintenance Trucks Only

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblFleetMix | HHD | 0.12 | 0.00 |
| tblFleetMix | LDA | 0.49 | 0.00 |
| tblFleetMix | LDT1 | 0.03 | 0.00 |
| tblFleetMix | LDT2 | 0.17 | 0.00 |
| tblFleetMix | LHD1 | 0.02 | 1.00 |
| tblFleetMix | LHD2 | 4.7320e-003 | 0.00 |
| tblFleetMix | MCY | 5.1540e-003 | 0.00 |
| tblFleetMix | MDV | 0.12 | 0.00 |
| tblFleetMix | MH | 6.2900e-004 | 0.00 |
| tblFleetMix | MHD | 0.03 | 0.00 |
| tblFleetMix | OBUS | 2.3660e-003 | 0.00 |
| tblFleetMix | SBUS | 1.0970e-003 | 0.00 |
| tblFleetMix | UBUS | 1.5900e-003 | 0.00 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblVehicleTrips | CC_TL | 6.60 | 0.50 |
| tblVehicleTrips | CNW_TL | 6.60 | 0.50 |
| tblVehicleTrips | CW_TL | 14.70 | 0.50 |
| tblVehicleTrips | DV_TP | 5.00 | 0.00 |
| tblVehicleTrips | PB_TP | 3.00 | 0.00 |
| tblVehicleTrips | PR_TP | 92.00 | 100.00 |
| tblVehicleTrips | ST_TR | 1.50 | 0.02 |
| tblVehicleTrips | SU_TR | 1.50 | 0.00 |
| tblVehicleTrips | WD_TR | 1.50 | 0.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2021 | 137.5603 | 1.5772 | 2.4642 | 4.8400e-003 | 0.1916 | 0.0952 | 0.2868 | 0.0508 | 0.0951 | 0.1459 | 0.0000 | 468.0572 | 468.0572 | 0.0238 | 0.0000 | 468.6531 |
| **Maximum** | **137.5603** | **1.5772** | **2.4642** | **4.8400e-003** | **0.1916** | **0.0952** | **0.2868** | **0.0508** | **0.0951** | **0.1459** | **0.0000** | **468.0572** | **468.0572** | **0.0238** | **0.0000** | **468.6531** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2021 | 137.5603 | 1.5772 | 2.4642 | 4.8400e-003 | 0.1916 | 0.0952 | 0.2868 | 0.0508 | 0.0951 | 0.1459 | 0.0000 | 468.0572 | 468.0572 | 0.0238 | 0.0000 | 468.6531 |
| **Maximum** | **137.5603** | **1.5772** | **2.4642** | **4.8400e-003** | **0.1916** | **0.0952** | **0.2868** | **0.0508** | **0.0951** | **0.1459** | **0.0000** | **468.0572** | **468.0572** | **0.0238** | **0.0000** | **468.6531** |

| | **ROG** | **NOx** | **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** |

## 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 | 4.4807 | 1.7000e-004 | 0.0182 | 0.0000 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 0.0389 | 0.0389 | 1.0000e-004 | | 0.0415 |
| Energy | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |
| Mobile | 7.1600e-003 | 0.0184 | 0.0298 | 3.0000e-005 | 1.7400e-003 | 1.2000e-004 | 1.8600e-003 | 4.9000e-004 | 1.2000e-004 | 6.1000e-004 | | 3.5104 | 3.5104 | 3.2000e-004 | | 3.5185 |
| **Total** | **4.5974** | **1.0146** | **0.8846** | **6.0100e-003** | **1.7400e-003** | **0.0759** | **0.0776** | **4.9000e-004** | **0.0759** | **0.0764** | | **1,198.7058** | **1,198.7058** | **0.0233** | **0.0219** | **1,205.8187** |

### 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 | 4.4807 | 1.7000e-004 | 0.0182 | 0.0000 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 0.0389 | 0.0389 | 1.0000e-004 | | 0.0415 |
| Energy | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |
| Mobile | 7.1600e-003 | 0.0184 | 0.0298 | 3.0000e-005 | 1.7400e-003 | 1.2000e-004 | 1.8600e-003 | 4.9000e-004 | 1.2000e-004 | 6.1000e-004 | | 3.5104 | 3.5104 | 3.2000e-004 | | 3.5185 |
| **Total** | **4.5974** | **1.0146** | **0.8846** | **6.0100e-003** | **1.7400e-003** | **0.0759** | **0.0776** | **4.9000e-004** | **0.0759** | **0.0764** | | **1,198.7058** | **1,198.7058** | **0.0233** | **0.0219** | **1,205.8187** |

| | ROG | NOx | 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 | Architectural Coating | Architectural Coating | 1/1/2021 | 1/26/2021 | 5 | 18 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 266,505; Non-Residential Outdoor: 88,835; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

### 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 1 | 15.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Architectural Coating - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 137.2501 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2189 | 1.5268 | 1.8176 | 2.9700e-003 | | 0.0941 | 0.0941 | | 0.0941 | 0.0941 | | 281.4481 | 281.4481 | 0.0193 | | 281.9309 |
| **Total** | **137.4690** | **1.5268** | **1.8176** | **2.9700e-003** | | **0.0941** | **0.0941** | | **0.0941** | **0.0941** | | **281.4481** | **281.4481** | **0.0193** | | **281.9309** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 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 | 0.0914 | 0.0504 | 0.6467 | 1.8700e-003 | 0.1916 | 1.1100e-003 | 0.1927 | 0.0508 | 1.0200e-003 | 0.0518 | | 186.6091 | 186.6091 | 4.5200e-003 | | 186.7222 |
| **Total** | **0.0914** | **0.0504** | **0.6467** | **1.8700e-003** | **0.1916** | **1.1100e-003** | **0.1927** | **0.0508** | **1.0200e-003** | **0.0518** | | **186.6091** | **186.6091** | **4.5200e-003** | | **186.7222** |

## 3.2 Architectural Coating - 2021

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 137.2501 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2189 | 1.5268 | 1.8176 | 2.9700e-003 | | 0.0941 | 0.0941 | | 0.0941 | 0.0941 | 0.0000 | 281.4481 | 281.4481 | 0.0193 | | 281.9309 |
| **Total** | **137.4690** | **1.5268** | **1.8176** | **2.9700e-003** | | **0.0941** | **0.0941** | | **0.0941** | **0.0941** | **0.0000** | **281.4481** | **281.4481** | **0.0193** | | **281.9309** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 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 | 0.0914 | 0.0504 | 0.6467 | 1.8700e-003 | 0.1916 | 1.1100e-003 | 0.1927 | 0.0508 | 1.0200e-003 | 0.0518 | | 186.6091 | 186.6091 | 4.5200e-003 | | 186.7222 |
| **Total** | **0.0914** | **0.0504** | **0.6467** | **1.8700e-003** | **0.1916** | **1.1100e-003** | **0.1927** | **0.0508** | **1.0200e-003** | **0.0518** | | **186.6091** | **186.6091** | **4.5200e-003** | | **186.7222** |

## 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 | 7.1600e-003 | 0.0184 | 0.0298 | 3.0000e-005 | 1.7400e-003 | 1.2000e-004 | 1.8600e-003 | 4.9000e-004 | 1.2000e-004 | 6.1000e-004 | | 3.5104 | 3.5104 | 3.2000e-004 | | 3.5185 |
| Unmitigated | 7.1600e-003 | 0.0184 | 0.0298 | 3.0000e-005 | 1.7400e-003 | 1.2000e-004 | 1.8600e-003 | 4.9000e-004 | 1.2000e-004 | 6.1000e-004 | | 3.5104 | 3.5104 | 3.2000e-004 | | 3.5185 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Heavy Industry | 0.00 | 4.09 | 0.00 | 106 | 106 |
| Total | 0.00 | 4.09 | 0.00 | 106 | 106 |

## 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 |
| General Heavy Industry | 0.50 | 0.50 | 0.50 | 59.00 | 28.00 | 13.00 | 100 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Heavy Industry | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

## 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 | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |
| NaturalGas Unmitigated | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |

## 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 | | | | | |
| General Heavy Industry | 10158.8 | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |
| **Total** | | **0.1096** | **0.9960** | **0.8366** | **5.9800e-003** | | **0.0757** | **0.0757** | | **0.0757** | **0.0757** | | **1,195.1565** | **1,195.1565** | **0.0229** | **0.0219** | **1,202.2587** |

**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 | | | | | |
| General Heavy Industry | 10.1588 | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |
| **Total** | | **0.1096** | **0.9960** | **0.8366** | **5.9800e-003** | | **0.0757** | **0.0757** | | **0.0757** | **0.0757** | | **1,195.1565** | **1,195.1565** | **0.0229** | **0.0219** | **1,202.2587** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

| | ROG | NOx | CO | SO2 | Fugitive 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 | 4.4807 | 1.7000e-004 | 0.0182 | 0.0000 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 0.0389 | 0.0389 | 1.0000e-004 | | 0.0415 |
| Unmitigated | 4.4807 | 1.7000e-004 | 0.0182 | 0.0000 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 0.0389 | 0.0389 | 1.0000e-004 | | 0.0415 |

## 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 | 0.6769 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 3.8021 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 1.7000e-003 | 1.7000e-004 | 0.0182 | 0.0000 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 0.0389 | 0.0389 | 1.0000e-004 | | 0.0415 |
| **Total** | **4.4807** | **1.7000e-004** | **0.0182** | **0.0000** | | **7.0000e-005** | **7.0000e-005** | | **7.0000e-005** | **7.0000e-005** | | **0.0389** | **0.0389** | **1.0000e-004** | | **0.0415** |

### 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 | 0.6769 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 3.8021 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 1.7000e-003 | 1.7000e-004 | 0.0182 | 0.0000 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 0.0389 | 0.0389 | 1.0000e-004 | | 0.0415 |
| **Total** | **4.4807** | **1.7000e-004** | **0.0182** | **0.0000** | | **7.0000e-005** | **7.0000e-005** | | **7.0000e-005** | **7.0000e-005** | | **0.0389** | **0.0389** | **1.0000e-004** | | **0.0415** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 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

# CalEEMod Output

# Operations – Heavy Duty Trucks (Daily)

# Kamm Ave Pistachio Plant HD Truck Only

**Fresno County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Heavy Industry | 177.67 | 1000sqft | 4.08 | 177,670.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 3 | | | **Operational Year** | 2021 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 641.35 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Kamm Ave Pistachio Plant HD Truck Only - Fresno County, Summer

Project Characteristics -

Land Use - Site Area 315 Acres

Construction Phase - Developers schedule

Off-road Equipment -

Off-road Equipment - Increased equipment amount to reflect site size

Trips and VMT - Vendor trips include cement trucks for foundations, and delivery trucks for building materials

Grading -

Architectural Coating - Rule 4601 Architectural Coatings rule compliance.  Parking lot 1.08 acres.

Vehicle Trips - Truck trips only. Peak Daily Trip gen 1.92 trips/ksf, Trip Length 0.5 miles for localized emissions

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings compliance

Water Mitigation -

Waste Mitigation -

Fleet Mix - HHD Trucks Only

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblFleetMix | HHD | 0.12 | 1.00 |
| tblFleetMix | LDA | 0.49 | 0.00 |
| tblFleetMix | LDT1 | 0.03 | 0.00 |
| tblFleetMix | LDT2 | 0.17 | 0.00 |
| tblFleetMix | LHD1 | 0.02 | 0.00 |
| tblFleetMix | LHD2 | 4.7320e-003 | 0.00 |
| tblFleetMix | MCY | 5.1540e-003 | 0.00 |
| tblFleetMix | MDV | 0.12 | 0.00 |
| tblFleetMix | MH | 6.2900e-004 | 0.00 |
| tblFleetMix | MHD | 0.03 | 0.00 |
| tblFleetMix | OBUS | 2.3660e-003 | 0.00 |
| tblFleetMix | SBUS | 1.0970e-003 | 0.00 |
| tblFleetMix | UBUS | 1.5900e-003 | 0.00 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblVehicleTrips | CC_TL | 6.60 | 0.50 |
| tblVehicleTrips | CNW_TL | 6.60 | 0.50 |
| tblVehicleTrips | CW_TL | 14.70 | 0.50 |
| tblVehicleTrips | DV_TP | 5.00 | 0.00 |
| tblVehicleTrips | PB_TP | 3.00 | 0.00 |
| tblVehicleTrips | PR_TP | 92.00 | 100.00 |
| tblVehicleTrips | ST_TR | 1.50 | 1.92 |
| tblVehicleTrips | SU_TR | 1.50 | 0.00 |
| tblVehicleTrips | WD_TR | 1.50 | 0.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2021 | 137.5603 | 1.5772 | 2.4642 | 4.8400e-003 | 0.1916 | 0.0952 | 0.2868 | 0.0508 | 0.0951 | 0.1459 | 0.0000 | 468.0572 | 468.0572 | 0.0238 | 0.0000 | 468.6531 |
| **Maximum** | **137.5603** | **1.5772** | **2.4642** | **4.8400e-003** | **0.1916** | **0.0952** | **0.2868** | **0.0508** | **0.0951** | **0.1459** | **0.0000** | **468.0572** | **468.0572** | **0.0238** | **0.0000** | **468.6531** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2021 | 137.5603 | 1.5772 | 2.4642 | 4.8400e-003 | 0.1916 | 0.0952 | 0.2868 | 0.0508 | 0.0951 | 0.1459 | 0.0000 | 468.0572 | 468.0572 | 0.0238 | 0.0000 | 468.6531 |
| **Maximum** | **137.5603** | **1.5772** | **2.4642** | **4.8400e-003** | **0.1916** | **0.0952** | **0.2868** | **0.0508** | **0.0951** | **0.1459** | **0.0000** | **468.0572** | **468.0572** | **0.0238** | **0.0000** | **468.6531** |

| | **ROG** | **NOx** | **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** |

## 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 | 4.4807 | 1.7000e-004 | 0.0182 | 0.0000 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 0.0389 | 0.0389 | 1.0000e-004 | | 0.0415 |
| Energy | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |
| Mobile | 0.6457 | 35.5299 | 2.3904 | 0.0499 | 0.1491 | 0.0230 | 0.1721 | 0.0409 | 0.0220 | 0.0628 | | 5,237.0350 | 5,237.0350 | 2.1342 | | 5,290.3890 |
| **Total** | **5.2360** | **36.5260** | **3.2452** | **0.0559** | **0.1491** | **0.0987** | **0.2479** | **0.0409** | **0.0977** | **0.1386** | | **6,432.2303** | **6,432.2303** | **2.1572** | **0.0219** | **6,492.6891** |

### 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 | 4.4807 | 1.7000e-004 | 0.0182 | 0.0000 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 0.0389 | 0.0389 | 1.0000e-004 | | 0.0415 |
| Energy | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |
| Mobile | 0.6457 | 35.5299 | 2.3904 | 0.0499 | 0.1491 | 0.0230 | 0.1721 | 0.0409 | 0.0220 | 0.0628 | | 5,237.0350 | 5,237.0350 | 2.1342 | | 5,290.3890 |
| **Total** | **5.2360** | **36.5260** | **3.2452** | **0.0559** | **0.1491** | **0.0987** | **0.2479** | **0.0409** | **0.0977** | **0.1386** | | **6,432.2303** | **6,432.2303** | **2.1572** | **0.0219** | **6,492.6891** |

| | ROG | NOx | 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 | Architectural Coating | Architectural Coating | 1/1/2021 | 1/26/2021 | 5 | 18 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 266,505; Non-Residential Outdoor: 88,835; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

### 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 1 | 15.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Architectural Coating - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 137.2501 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2189 | 1.5268 | 1.8176 | 2.9700e-003 | | 0.0941 | 0.0941 | | 0.0941 | 0.0941 | | 281.4481 | 281.4481 | 0.0193 | | 281.9309 |
| **Total** | **137.4690** | **1.5268** | **1.8176** | **2.9700e-003** | | **0.0941** | **0.0941** | | **0.0941** | **0.0941** | | **281.4481** | **281.4481** | **0.0193** | | **281.9309** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 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 | 0.0914 | 0.0504 | 0.6467 | 1.8700e-003 | 0.1916 | 1.1100e-003 | 0.1927 | 0.0508 | 1.0200e-003 | 0.0518 | | 186.6091 | 186.6091 | 4.5200e-003 | | 186.7222 |
| **Total** | **0.0914** | **0.0504** | **0.6467** | **1.8700e-003** | **0.1916** | **1.1100e-003** | **0.1927** | **0.0508** | **1.0200e-003** | **0.0518** | | **186.6091** | **186.6091** | **4.5200e-003** | | **186.7222** |

## 3.2 Architectural Coating - 2021

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 137.2501 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2189 | 1.5268 | 1.8176 | 2.9700e-003 | | 0.0941 | 0.0941 | | 0.0941 | 0.0941 | 0.0000 | 281.4481 | 281.4481 | 0.0193 | | 281.9309 |
| **Total** | **137.4690** | **1.5268** | **1.8176** | **2.9700e-003** | | **0.0941** | **0.0941** | | **0.0941** | **0.0941** | **0.0000** | **281.4481** | **281.4481** | **0.0193** | | **281.9309** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 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 | 0.0914 | 0.0504 | 0.6467 | 1.8700e-003 | 0.1916 | 1.1100e-003 | 0.1927 | 0.0508 | 1.0200e-003 | 0.0518 | | 186.6091 | 186.6091 | 4.5200e-003 | | 186.7222 |
| **Total** | **0.0914** | **0.0504** | **0.6467** | **1.8700e-003** | **0.1916** | **1.1100e-003** | **0.1927** | **0.0508** | **1.0200e-003** | **0.0518** | | **186.6091** | **186.6091** | **4.5200e-003** | | **186.7222** |

## 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 | 0.6457 | 35.5299 | 2.3904 | 0.0499 | 0.1491 | 0.0230 | 0.1721 | 0.0409 | 0.0220 | 0.0628 | | 5,237.0350 | 5,237.0350 | 2.1342 | | 5,290.3890 |
| Unmitigated | 0.6457 | 35.5299 | 2.3904 | 0.0499 | 0.1491 | 0.0230 | 0.1721 | 0.0409 | 0.0220 | 0.0628 | | 5,237.0350 | 5,237.0350 | 2.1342 | | 5,290.3890 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Heavy Industry | 0.00 | 341.13 | 0.00 | 8,869 | 8,869 |
| Total | 0.00 | 341.13 | 0.00 | 8,869 | 8,869 |

## 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 |
| General Heavy Industry | 0.50 | 0.50 | 0.50 | 59.00 | 28.00 | 13.00 | 100 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Heavy Industry | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

## 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 | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |
| NaturalGas Unmitigated | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |

## 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 | | | | | |
| General Heavy Industry | 10158.8 | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |
| **Total** | | **0.1096** | **0.9960** | **0.8366** | **5.9800e-003** | | **0.0757** | **0.0757** | | **0.0757** | **0.0757** | | **1,195.1565** | **1,195.1565** | **0.0229** | **0.0219** | **1,202.2587** |

**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 | | | | | |
| General Heavy Industry | 10.1588 | 0.1096 | 0.9960 | 0.8366 | 5.9800e-003 | | 0.0757 | 0.0757 | | 0.0757 | 0.0757 | | 1,195.1565 | 1,195.1565 | 0.0229 | 0.0219 | 1,202.2587 |
| **Total** | | **0.1096** | **0.9960** | **0.8366** | **5.9800e-003** | | **0.0757** | **0.0757** | | **0.0757** | **0.0757** | | **1,195.1565** | **1,195.1565** | **0.0229** | **0.0219** | **1,202.2587** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

| | ROG | NOx | CO | SO2 | Fugitive 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 | 4.4807 | 1.7000e-004 | 0.0182 | 0.0000 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 0.0389 | 0.0389 | 1.0000e-004 | | 0.0415 |
| Unmitigated | 4.4807 | 1.7000e-004 | 0.0182 | 0.0000 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 0.0389 | 0.0389 | 1.0000e-004 | | 0.0415 |

## 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 | 0.6769 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 3.8021 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 1.7000e-003 | 1.7000e-004 | 0.0182 | 0.0000 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 0.0389 | 0.0389 | 1.0000e-004 | | 0.0415 |
| **Total** | **4.4807** | **1.7000e-004** | **0.0182** | **0.0000** | | **7.0000e-005** | **7.0000e-005** | | **7.0000e-005** | **7.0000e-005** | | **0.0389** | **0.0389** | **1.0000e-004** | | **0.0415** |

### 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 | 0.6769 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 3.8021 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 1.7000e-003 | 1.7000e-004 | 0.0182 | 0.0000 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 0.0389 | 0.0389 | 1.0000e-004 | | 0.0415 |
| **Total** | **4.4807** | **1.7000e-004** | **0.0182** | **0.0000** | | **7.0000e-005** | **7.0000e-005** | | **7.0000e-005** | **7.0000e-005** | | **0.0389** | **0.0389** | **1.0000e-004** | | **0.0415** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 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

# CalEEMod Output

# Operations – Heavy Duty LNG Haul Trucks (Daily)

# Kamm Ave Pistachio LNG Trucks

**Fresno County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Light Industry | 1.00 | 1000sqft | 0.02 | 1,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 3 | | | **Operational Year** | 2021 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 641.35 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Project Characteristics -

Land Use -

Construction Phase -

Vehicle Trips - 84 trips over 6 week harvest season. 0.23 ADT Trip Distance to SJVAB boundary with Eastern Kern

Fleet Mix - HHDT only for LNG haul trucks

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblFleetMix | HHD | 0.12 | 1.00 |
| tblFleetMix | LDA | 0.49 | 0.00 |
| tblFleetMix | LDT1 | 0.03 | 0.00 |
| tblFleetMix | LDT2 | 0.17 | 0.00 |
| tblFleetMix | LHD1 | 0.02 | 0.00 |
| tblFleetMix | LHD2 | 4.7320e-003 | 0.00 |
| tblFleetMix | MCY | 5.1540e-003 | 0.00 |
| tblFleetMix | MDV | 0.12 | 0.00 |
| tblFleetMix | MH | 6.2900e-004 | 0.00 |
| tblFleetMix | MHD | 0.03 | 0.00 |
| tblFleetMix | OBUS | 2.3660e-003 | 0.00 |
| tblFleetMix | SBUS | 1.0970e-003 | 0.00 |
| tblFleetMix | UBUS | 1.5900e-003 | 0.00 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblVehicleTrips | CC_TL | 6.60 | 152.00 |
| tblVehicleTrips | CNW_TL | 6.60 | 152.00 |
| tblVehicleTrips | CW_TL | 14.70 | 152.00 |
| tblVehicleTrips | DV_TP | 5.00 | 0.00 |
| tblVehicleTrips | PB_TP | 3.00 | 0.00 |
| tblVehicleTrips | PR_TP | 92.00 | 100.00 |
| tblVehicleTrips | ST_TR | 1.32 | 0.23 |
| tblVehicleTrips | SU_TR | 0.68 | 0.23 |
| tblVehicleTrips | WD_TR | 6.97 | 0.23 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 2.9855 | 1.4085 | 1.8136 | 2.9700e-003 | 0.0000 | 0.0817 | 0.0817 | 0.0000 | 0.0817 | 0.0817 | 0.0000 | 281.4481 | 281.4481 | 0.0183 | 0.0000 | 281.9062 |
| **Maximum** | **2.9855** | **1.4085** | **1.8136** | **2.9700e-003** | **0.0000** | **0.0817** | **0.0817** | **0.0000** | **0.0817** | **0.0817** | **0.0000** | **281.4481** | **281.4481** | **0.0183** | **0.0000** | **281.9062** |

**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 | 2.9855 | 1.4085 | 1.8136 | 2.9700e-003 | 0.0000 | 0.0817 | 0.0817 | 0.0000 | 0.0817 | 0.0817 | 0.0000 | 281.4481 | 281.4481 | 0.0183 | 0.0000 | 281.9062 |
| **Maximum** | **2.9855** | **1.4085** | **1.8136** | **2.9700e-003** | **0.0000** | **0.0817** | **0.0817** | **0.0000** | **0.0817** | **0.0817** | **0.0000** | **281.4481** | **281.4481** | **0.0183** | **0.0000** | **281.9062** |

| | **ROG** | **NOx** | **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** |

## 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 | 0.0252 | 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 | 6.2000e-004 | 5.6100e-003 | 4.7100e-003 | 3.0000e-005 | | 4.3000e-004 | 4.3000e-004 | | 4.3000e-004 | 4.3000e-004 | | 6.7268 | 6.7268 | 1.3000e-004 | 1.2000e-004 | 6.7668 |
| Mobile | 0.0102 | 0.2885 | 0.0504 | 1.1900e-003 | 0.0306 | 1.3900e-003 | 0.0320 | 8.3800e-003 | 1.3300e-003 | 9.7100e-003 | | 125.0354 | 125.0354 | 2.4200e-003 | | 125.0961 |
| **Total** | **0.0361** | **0.2941** | **0.0553** | **1.2200e-003** | **0.0306** | **1.8200e-003** | **0.0324** | **8.3800e-003** | **1.7600e-003** | **0.0101** | | **131.7625** | **131.7625** | **2.5500e-003** | **1.2000e-004** | **131.8631** |

### 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 | 0.0252 | 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 | 6.2000e-004 | 5.6100e-003 | 4.7100e-003 | 3.0000e-005 | | 4.3000e-004 | 4.3000e-004 | | 4.3000e-004 | 4.3000e-004 | | 6.7268 | 6.7268 | 1.3000e-004 | 1.2000e-004 | 6.7668 |
| Mobile | 0.0102 | 0.2885 | 0.0504 | 1.1900e-003 | 0.0306 | 1.3900e-003 | 0.0320 | 8.3800e-003 | 1.3300e-003 | 9.7100e-003 | | 125.0354 | 125.0354 | 2.4200e-003 | | 125.0961 |
| **Total** | **0.0361** | **0.2941** | **0.0553** | **1.2200e-003** | **0.0306** | **1.8200e-003** | **0.0324** | **8.3800e-003** | **1.7600e-003** | **0.0101** | | **131.7625** | **131.7625** | **2.5500e-003** | **1.2000e-004** | **131.8631** |

| | ROG | NOx | 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 | Architectural Coating | Architectural Coating | 1/13/2022 | 1/19/2022 | 5 | 5 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

### 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 1 | 0.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Architectural Coating - 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 | | | | | |
| Archit. Coating | 2.7810 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2045 | 1.4085 | 1.8136 | 2.9700e-003 | | 0.0817 | 0.0817 | | 0.0817 | 0.0817 | | 281.4481 | 281.4481 | 0.0183 | | 281.9062 |
| **Total** | **2.9855** | **1.4085** | **1.8136** | **2.9700e-003** | | **0.0817** | **0.0817** | | **0.0817** | **0.0817** | | **281.4481** | **281.4481** | **0.0183** | | **281.9062** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 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 | 0.0000 | 0.0000 | 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** |

## 3.2 Architectural Coating - 2022

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 2.7810 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2045 | 1.4085 | 1.8136 | 2.9700e-003 | | 0.0817 | 0.0817 | | 0.0817 | 0.0817 | 0.0000 | 281.4481 | 281.4481 | 0.0183 | | 281.9062 |
| **Total** | **2.9855** | **1.4085** | **1.8136** | **2.9700e-003** | | **0.0817** | **0.0817** | | **0.0817** | **0.0817** | **0.0000** | **281.4481** | **281.4481** | **0.0183** | | **281.9062** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 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 | 0.0000 | 0.0000 | 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** |

## 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 | 0.0102 | 0.2885 | 0.0504 | 1.1900e-003 | 0.0306 | 1.3900e-003 | 0.0320 | 8.3800e-003 | 1.3300e-003 | 9.7100e-003 | | 125.0354 | 125.0354 | 2.4200e-003 | | 125.0961 |
| Unmitigated | 0.0102 | 0.2885 | 0.0504 | 1.1900e-003 | 0.0306 | 1.3900e-003 | 0.0320 | 8.3800e-003 | 1.3300e-003 | 9.7100e-003 | | 125.0354 | 125.0354 | 2.4200e-003 | | 125.0961 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Light Industry | 0.23 | 0.23 | 0.23 | 12,725 | 12,725 |
| Total | 0.23 | 0.23 | 0.23 | 12,725 | 12,725 |

## 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 |
| General Light Industry | 152.00 | 152.00 | 152.00 | 59.00 | 28.00 | 13.00 | 100 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Light Industry | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

## 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 | 6.2000e-004 | 5.6100e-003 | 4.7100e-003 | 3.0000e-005 | | 4.3000e-004 | 4.3000e-004 | | 4.3000e-004 | 4.3000e-004 | | 6.7268 | 6.7268 | 1.3000e-004 | 1.2000e-004 | 6.7668 |
| NaturalGas Unmitigated | 6.2000e-004 | 5.6100e-003 | 4.7100e-003 | 3.0000e-005 | | 4.3000e-004 | 4.3000e-004 | | 4.3000e-004 | 4.3000e-004 | | 6.7268 | 6.7268 | 1.3000e-004 | 1.2000e-004 | 6.7668 |

## 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 | | | | | |
| General Light Industry | 57.1781 | 6.2000e-004 | 5.6100e-003 | 4.7100e-003 | 3.0000e-005 | | 4.3000e-004 | 4.3000e-004 | | 4.3000e-004 | 4.3000e-004 | | 6.7268 | 6.7268 | 1.3000e-004 | 1.2000e-004 | 6.7668 |
| **Total** | | **6.2000e-004** | **5.6100e-003** | **4.7100e-003** | **3.0000e-005** | | **4.3000e-004** | **4.3000e-004** | | **4.3000e-004** | **4.3000e-004** | | **6.7268** | **6.7268** | **1.3000e-004** | **1.2000e-004** | **6.7668** |

**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 | | | | | |
| General Light Industry | 0.0571781 | 6.2000e-004 | 5.6100e-003 | 4.7100e-003 | 3.0000e-005 | | 4.3000e-004 | 4.3000e-004 | | 4.3000e-004 | 4.3000e-004 | | 6.7268 | 6.7268 | 1.3000e-004 | 1.2000e-004 | 6.7668 |
| **Total** | | **6.2000e-004** | **5.6100e-003** | **4.7100e-003** | **3.0000e-005** | | **4.3000e-004** | **4.3000e-004** | | **4.3000e-004** | **4.3000e-004** | | **6.7268** | **6.7268** | **1.3000e-004** | **1.2000e-004** | **6.7668** |

# 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 | 0.0252 | 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 | 0.0252 | 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 |

## 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 | 3.8100e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 0.0214 | | | | | 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** | **0.0252** | **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** |

### 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 | 3.8100e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 0.0214 | | | | | 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** | **0.0252** | **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

## 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

# CalEEMod Output

# Project Operations - Employee (GHG BAU)

# Kamm Ave Pistachio Const and Ops Employee GHG BAU

**Fresno County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Heavy Industry | 177.67 | 1000sqft | 4.08 | 177,670.00 | 0 |
| Other Non-Asphalt Surfaces | 128.90 | Acre | 128.90 | 5,614,884.00 | 0 |
| Parking Lot | 1.60 | Acre | 1.60 | 69,696.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 3 | | | **Operational Year** | 2005 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 290 | **CH4 Intensity (lb/MWhr)** | 0.025 | **N2O Intensity (lb/MWhr)** | 0.005 |

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

Kamm Ave Pistachio Const and Ops Employee GHG BAU - Fresno County, Annual

Project Characteristics - PG&E Intensity Factors

Land Use - Site Area 315 Acres, Disturbed Area 134.6 acres

Construction Phase - Developers schedule

Off-road Equipment - Increased equipment to reflect shorter than default schedule

Off-road Equipment - Limited Site Prep and Grading required at the site

Trips and VMT - Vendor trips include cement trucks and building materials. 778 haul trips assumed for road base on approx 9.6 acres

Grading -

Architectural Coating - Rule 4601 Architectural Coatings rule compliance. 1.6 acre parking lots

Vehicle Trips - Employees only ADT = 92.45 Trips/KSF = 0.52 Emp Trip Length Avg 40 miles.

Construction Off-road Equipment Mitigation - Tier 3 Mitigation

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings compliance

Water Mitigation -

Waste Mitigation -

Fleet Mix - Employee Fleet Mix No Truck

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaCoating | Area_EF_Nonresidential_Exterior | 250 | 150 |
| tblAreaCoating | Area_EF_Nonresidential_Interior | 250 | 150 |
| tblAreaCoating | Area_EF_Residential_Exterior | 250 | 150 |
| tblAreaCoating | Area_EF_Residential_Interior | 250 | 150 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 150 | 65 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 150 | 65 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 12.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |

Kamm Ave Pistachio Const and Ops Employee GHG BAU - Fresno County, Annual

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstructionPhase | NumDays | 120.00 | 10.00 |
| tblFleetMix | HHD | 0.11 | 0.00 |
| tblFleetMix | HHD | 0.11 | 0.12 |
| tblFleetMix | HHD | 0.11 | 0.12 |
| tblFleetMix | LDA | 0.42 | 0.61 |
| tblFleetMix | LDA | 0.42 | 0.49 |
| tblFleetMix | LDA | 0.42 | 0.49 |
| tblFleetMix | LDT1 | 0.06 | 0.04 |
| tblFleetMix | LDT1 | 0.06 | 0.03 |
| tblFleetMix | LDT1 | 0.06 | 0.03 |
| tblFleetMix | LDT2 | 0.15 | 0.21 |
| tblFleetMix | LDT2 | 0.15 | 0.17 |
| tblFleetMix | LDT2 | 0.15 | 0.17 |
| tblFleetMix | LHD1 | 0.04 | 0.00 |
| tblFleetMix | LHD1 | 0.04 | 0.02 |
| tblFleetMix | LHD1 | 0.04 | 0.02 |
| tblFleetMix | LHD2 | 6.9730e-003 | 0.00 |
| tblFleetMix | LHD2 | 6.9730e-003 | 4.7320e-003 |
| tblFleetMix | LHD2 | 6.9730e-003 | 4.7320e-003 |
| tblFleetMix | MCY | 5.2690e-003 | 0.00 |
| tblFleetMix | MCY | 5.2690e-003 | 5.1540e-003 |
| tblFleetMix | MCY | 5.2690e-003 | 5.1540e-003 |
| tblFleetMix | MDV | 0.18 | 0.15 |
| tblFleetMix | MDV | 0.18 | 0.12 |
| tblFleetMix | MDV | 0.18 | 0.12 |
| tblFleetMix | MH | 1.5690e-003 | 0.00 |

| | | | |
|---|---|---|---|
| tblFleetMix | MH | 1.5690e-003 | 6.2900e-004 |
| tblFleetMix | MH | 1.5690e-003 | 6.2900e-004 |
| tblFleetMix | MHD | 0.03 | 0.00 |
| tblFleetMix | MHD | 0.03 | 0.03 |
| tblFleetMix | MHD | 0.03 | 0.03 |
| tblFleetMix | OBUS | 2.0990e-003 | 0.00 |
| tblFleetMix | OBUS | 2.0990e-003 | 2.3660e-003 |
| tblFleetMix | OBUS | 2.0990e-003 | 2.3660e-003 |
| tblFleetMix | SBUS | 1.2120e-003 | 0.00 |
| tblFleetMix | SBUS | 1.2120e-003 | 1.0970e-003 |
| tblFleetMix | SBUS | 1.2120e-003 | 1.0970e-003 |
| tblFleetMix | UBUS | 1.7870e-003 | 0.00 |
| tblFleetMix | UBUS | 1.7870e-003 | 1.5900e-003 |
| tblFleetMix | UBUS | 1.7870e-003 | 1.5900e-003 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.025 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblVehicleTrips | CC_TL | 6.60 | 40.00 |
| tblVehicleTrips | CNW_TL | 6.60 | 40.00 |
| tblVehicleTrips | CW_TL | 14.70 | 40.00 |
| tblVehicleTrips | ST_TR | 1.50 | 0.52 |
| tblVehicleTrips | SU_TR | 1.50 | 0.52 |
| tblVehicleTrips | WD_TR | 1.50 | 0.52 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | | | | | | | | | | | 0.0000 | 17.6434 | 17.6434 | 5.4300e-003 | 0.0000 | 17.7792 |
| **Maximum** | | | | | | | | | | | **0.0000** | **17.6434** | **17.6434** | **5.4300e-003** | **0.0000** | **17.7792** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | | | | | | | | | | | 0.0000 | 17.6434 | 17.6434 | 5.4300e-003 | 0.0000 | 17.7791 |
| **Maximum** | | | | | | | | | | | **0.0000** | **17.6434** | **17.6434** | **5.4300e-003** | **0.0000** | **17.7791** |

| | **ROG** | **NOx** | **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** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| | | **Highest** | | |

## 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 | 5.5100e-003 | 5.5100e-003 | 3.0000e-005 | 0.0000 | 6.1500e-003 |
| Energy | | | | | | | | | | | 0.0000 | 407.2128 | 407.2128 | 0.0218 | 7.2400e-003 | 409.9154 |
| Mobile | | | | | | | | | | | 0.0000 | 500.5444 | 500.5444 | 0.0452 | 0.0000 | 501.6733 |
| Waste | | | | | | | | | | | 44.7209 | 0.0000 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| Water | | | | | | | | | | | 13.0348 | 29.2440 | 42.2788 | 1.3413 | 0.0321 | 85.3822 |
| **Total** | | | | | | | | | | | **57.7557** | **937.0068** | **994.7625** | **4.0513** | **0.0394** | **1,107.7713** |

## 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 | 5.5100e-003 | 5.5100e-003 | 3.0000e-005 | 0.0000 | 6.1500e-003 |
| Energy | | | | | | | | | | | 0.0000 | 407.2128 | 407.2128 | 0.0218 | 7.2400e-003 | 409.9154 |
| Mobile | | | | | | | | | | | 0.0000 | 500.5444 | 500.5444 | 0.0452 | 0.0000 | 501.6733 |
| Waste | | | | | | | | | | | 33.5407 | 0.0000 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Water | | | | | | | | | | | 10.4278 | 23.3952 | 33.8230 | 1.0731 | 0.0257 | 68.3058 |
| **Total** | | | | | | | | | | | **43.9685** | **931.1580** | **975.1265** | **3.1223** | **0.0329** | **1,062.9963** |

| | **ROG** | **NOx** | **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** | **23.87** | **0.62** | **1.97** | **22.93** | **16.34** | **4.04** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2021 | 1/14/2021 | 5 | 10 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 130.5**

**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 |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |

**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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

## 3.2 Site Preparation - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | | | | | | | | | | | 0.0000 | 16.7179 | 16.7179 | 5.4100e-003 | 0.0000 | 16.8530 |
| **Total** | | | | | | | | | | | **0.0000** | **16.7179** | **16.7179** | **5.4100e-003** | **0.0000** | **16.8530** |

### 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 |
| Vendor | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | | | | | | | | | | | 0.0000 | 0.9256 | 0.9256 | 2.0000e-005 | 0.0000 | 0.9261 |
| **Total** | | | | | | | | | | | **0.0000** | **0.9256** | **0.9256** | **2.0000e-005** | **0.0000** | **0.9261** |

## 3.2 Site Preparation - 2021

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | | | | | | | | | | | 0.0000 | 16.7178 | 16.7178 | 5.4100e-003 | 0.0000 | 16.8530 |
| **Total** | | | | | | | | | | | **0.0000** | **16.7178** | **16.7178** | **5.4100e-003** | **0.0000** | **16.8530** |

**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 |
| Vendor | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | | | | | | | | | | | 0.0000 | 0.9256 | 0.9256 | 2.0000e-005 | 0.0000 | 0.9261 |
| **Total** | | | | | | | | | | | **0.0000** | **0.9256** | **0.9256** | **2.0000e-005** | **0.0000** | **0.9261** |

## 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 | 500.5444 | 500.5444 | 0.0452 | 0.0000 | 501.6733 |
| Unmitigated | | | | | | | | | | | 0.0000 | 500.5444 | 500.5444 | 0.0452 | 0.0000 | 501.6733 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Heavy Industry | 92.39 | 92.39 | 92.39 | 1,254,477 | 1,254,477 |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 92.39 | 92.39 | 92.39 | 1,254,477 | 1,254,477 |

## 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 |
| General Heavy Industry | 40.00 | 40.00 | 40.00 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |
| Other Non-Asphalt Surfaces | 14.70 | 6.60 | 6.60 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Parking Lot | 14.70 | 6.60 | 6.60 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Heavy Industry | 0.607139 | 0.039400 | 0.208980 | 0.149930 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Other Non-Asphalt Surfaces | 0.487139 | 0.031901 | 0.169199 | 0.121386 | 0.017033 | 0.004732 | 0.033028 | 0.124746 | 0.002366 | 0.001590 | 0.005154 | 0.001097 | 0.000629 |
| Parking Lot | 0.487139 | 0.031901 | 0.169199 | 0.121386 | 0.017033 | 0.004732 | 0.033028 | 0.124746 | 0.002366 | 0.001590 | 0.005154 | 0.001097 | 0.000629 |

## 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 | 209.3413 | 209.3413 | 0.0181 | 3.6100e-003 | 210.8680 |
| Electricity Unmitigated | | | | | | | | | | | 0.0000 | 209.3413 | 209.3413 | 0.0181 | 3.6100e-003 | 210.8680 |
| NaturalGas Mitigated | | | | | | | | | | | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| NaturalGas Unmitigated | | | | | | | | | | | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |

## 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 | | | | | |
| General Heavy Industry | 3.70797e+006 | | | | | | | | | | | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| Other Non-Asphalt Surfaces | 0 | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | | | | | | | | | | | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

**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 | | | | | |
| General Heavy Industry | 3.70797e+006 | | | | | | | | | | | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| Other Non-Asphalt Surfaces | 0 | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | | | | | | | | | | | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 206.1325 | 0.0178 | 3.5500e-003 | 207.6358 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 24393.6 | 3.2088 | 2.8000e-004 | 6.0000e-005 | 3.2322 |
| **Total** | | **209.3413** | **0.0181** | **3.6100e-003** | **210.8680** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 206.1325 | 0.0178 | 3.5500e-003 | 207.6358 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 24393.6 | 3.2088 | 2.8000e-004 | 6.0000e-005 | 3.2322 |
| **Total** | | **209.3413** | **0.0181** | **3.6100e-003** | **210.8680** |

## 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 5.5100e-003 | 5.5100e-003 | 3.0000e-005 | 0.0000 | 6.1500e-003 |
| Unmitigated | | | | | | | | | | | 0.0000 | 5.5100e-003 | 5.5100e-003 | 3.0000e-005 | 0.0000 | 6.1500e-003 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | | | | | | | | | | | 0.0000 | 5.5100e-003 | 5.5100e-003 | 3.0000e-005 | 0.0000 | 6.1500e-003 |
| **Total** | | | | | | | | | | | **0.0000** | **5.5100e-003** | **5.5100e-003** | **3.0000e-005** | **0.0000** | **6.1500e-003** |

**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 |
| Consumer Products | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | | | | | | | | | | | 0.0000 | 5.5100e-003 | 5.5100e-003 | 3.0000e-005 | 0.0000 | 6.1500e-003 |
| **Total** | | | | | | | | | | | **0.0000** | **5.5100e-003** | **5.5100e-003** | **3.0000e-005** | **0.0000** | **6.1500e-003** |

## 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 33.8230 | 1.0731 | 0.0257 | 68.3058 |
| Unmitigated | 42.2788 | 1.3413 | 0.0321 | 85.3822 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 41.0862 / 0 | 42.2788 | 1.3413 | 0.0321 | 85.3822 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **42.2788** | **1.3413** | **0.0321** | **85.3822** |

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 32.8689 / 0 | 33.8230 | 1.0731 | 0.0257 | 68.3058 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **33.8230** | **1.0731** | **0.0257** | **68.3058** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Unmitigated | 44.7209 | 2.6429 | 0.0000 | 110.7942 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 220.31 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **44.7209** | **2.6429** | **0.0000** | **110.7942** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 165.233 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **33.5407** | **1.9822** | **0.0000** | **83.0957** |

## 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

# CalEEMod Output

# Project Operations – Maintenance Truck (GHG BAU)

# Kamm Ave Pistachio Plant Maintenance Trucks Only GHG BAU

**Fresno County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Heavy Industry | 177.67 | 1000sqft | 4.08 | 177,670.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 3 | | | **Operational Year** | 2005 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 641.35 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Kamm Ave Pistachio Plant Maintenance Trucks Only GHG BAU - Fresno County, Annual

Project Characteristics -

Land Use - Site Area 315 Acres

Construction Phase - Developers schedule

Off-road Equipment -

Off-road Equipment - Increased equipment amount to reflect site size

Trips and VMT - Vendor trips include cement trucks for foundations, and delivery trucks for building materials

Grading -

Architectural Coating - Rule 4601 Architectural Coatings rule compliance. Parking lot 1.08 acres.

Vehicle Trips - Truck trips only. Trip gen 0.016 trips/ksf, Trip Length 50.0 miles

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings compliance

Water Mitigation -

Waste Mitigation -

Fleet Mix - LHD Maintenance Trucks Only

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaCoating | Area_EF_Nonresidential_Exterior | 250 | 150 |
| tblAreaCoating | Area_EF_Nonresidential_Interior | 250 | 150 |
| tblAreaCoating | Area_EF_Residential_Exterior | 250 | 150 |
| tblAreaCoating | Area_EF_Residential_Interior | 250 | 150 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblFleetMix | HHD | 0.11 | 0.00 |
| tblFleetMix | LDA | 0.42 | 0.00 |
| tblFleetMix | LDT1 | 0.06 | 0.00 |
| tblFleetMix | LDT2 | 0.15 | 0.00 |
| tblFleetMix | LHD1 | 0.04 | 1.00 |

| | | | |
|---|---|---|---|
| tblFleetMix | LHD2 | 6.9730e-003 | 0.00 |
| tblFleetMix | MCY | 5.2690e-003 | 0.00 |
| tblFleetMix | MDV | 0.18 | 0.00 |
| tblFleetMix | MH | 1.5690e-003 | 0.00 |
| tblFleetMix | MHD | 0.03 | 0.00 |
| tblFleetMix | OBUS | 2.0990e-003 | 0.00 |
| tblFleetMix | SBUS | 1.2120e-003 | 0.00 |
| tblFleetMix | UBUS | 1.7870e-003 | 0.00 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblVehicleTrips | CC_TL | 6.60 | 50.00 |
| tblVehicleTrips | CNW_TL | 6.60 | 50.00 |
| tblVehicleTrips | CW_TL | 14.70 | 50.00 |
| tblVehicleTrips | DV_TP | 5.00 | 0.00 |
| tblVehicleTrips | PB_TP | 3.00 | 0.00 |
| tblVehicleTrips | PR_TP | 92.00 | 100.00 |
| tblVehicleTrips | ST_TR | 1.50 | 0.02 |
| tblVehicleTrips | SU_TR | 1.50 | 0.02 |
| tblVehicleTrips | WD_TR | 1.50 | 0.02 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 1.2380 | 0.0142 | 0.0213 | 4.0000e-005 | 1.6800e-003 | 8.6000e-004 | 2.5300e-003 | 4.5000e-004 | 8.6000e-004 | 1.3000e-003 | 0.0000 | 3.6863 | 3.6863 | 1.9000e-004 | 0.0000 | 3.6911 |
| **Maximum** | **1.2380** | **0.0142** | **0.0213** | **4.0000e-005** | **1.6800e-003** | **8.6000e-004** | **2.5300e-003** | **4.5000e-004** | **8.6000e-004** | **1.3000e-003** | **0.0000** | **3.6863** | **3.6863** | **1.9000e-004** | **0.0000** | **3.6911** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 1.2380 | 0.0142 | 0.0213 | 4.0000e-005 | 1.6800e-003 | 8.6000e-004 | 2.5300e-003 | 4.5000e-004 | 8.6000e-004 | 1.3000e-003 | 0.0000 | 3.6863 | 3.6863 | 1.9000e-004 | 0.0000 | 3.6911 |
| **Maximum** | **1.2380** | **0.0142** | **0.0213** | **4.0000e-005** | **1.6800e-003** | **8.6000e-004** | **2.5300e-003** | **4.5000e-004** | **8.6000e-004** | **1.3000e-003** | **0.0000** | **3.6863** | **3.6863** | **1.9000e-004** | **0.0000** | **3.6911** |

| | **ROG** | **NOx** | **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** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **1-1-2021** | **3-31-2021** | 1.2921 | 1.2921 |
| | | **Highest** | 1.2921 | 1.2921 |

## 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 | 0.8177 | 2.0000e-005 | 2.0800e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.5400e-003 |
| Energy | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 653.7442 | 653.7442 | 0.0244 | 7.8900e-003 | 656.7063 |
| Mobile | 0.0279 | 0.2513 | 0.4286 | 1.9400e-003 | 0.0269 | 2.1100e-003 | 0.0290 | 7.5900e-003 | 2.0100e-003 | 9.6000e-003 | 0.0000 | 48.1765 | 48.1765 | 6.7200e-003 | 0.0000 | 48.3446 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 44.7209 | 0.0000 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 13.0348 | 64.6747 | 77.7094 | 1.3417 | 0.0322 | 120.8530 |
| **Total** | **0.8656** | **0.4331** | **0.5834** | **3.0300e-003** | **0.0269** | **0.0159** | **0.0428** | **7.5900e-003** | **0.0158** | **0.0234** | **57.7557** | **766.5985** | **824.3542** | **4.0158** | **0.0401** | **936.7017** |

## 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 | 0.8177 | 2.0000e-005 | 2.0800e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.5400e-003 |
| Energy | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 653.7442 | 653.7442 | 0.0244 | 7.8900e-003 | 656.7063 |
| Mobile | 0.0279 | 0.2513 | 0.4286 | 1.9400e-003 | 0.0269 | 2.1100e-003 | 0.0290 | 7.5900e-003 | 2.0100e-003 | 9.6000e-003 | 0.0000 | 48.1765 | 48.1765 | 6.7200e-003 | 0.0000 | 48.3446 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 33.5407 | 0.0000 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 10.4278 | 51.7397 | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| **Total** | **0.8656** | **0.4331** | **0.5834** | **3.0300e-003** | **0.0269** | **0.0159** | **0.0428** | **7.5900e-003** | **0.0158** | **0.0234** | **43.9685** | **753.6636** | **797.6321** | **3.0867** | **0.0337** | **884.8325** |

| | **ROG** | **NOx** | **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** | **23.87** | **1.69** | **3.24** | **23.14** | **16.08** | **5.54** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Architectural Coating | Architectural Coating | 1/1/2021 | 1/26/2021 | 5 | 18 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 266,505; Non-Residential Outdoor: 88,835; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 1 | 15.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Architectural Coating - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.2353 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.9700e-003 | 0.0137 | 0.0164 | 3.0000e-005 | | 8.5000e-004 | 8.5000e-004 | | 8.5000e-004 | 8.5000e-004 | 0.0000 | 2.2979 | 2.2979 | 1.6000e-004 | 0.0000 | 2.3019 |
| **Total** | **1.2372** | **0.0137** | **0.0164** | **3.0000e-005** | | **8.5000e-004** | **8.5000e-004** | | **8.5000e-004** | **8.5000e-004** | **0.0000** | **2.2979** | **2.2979** | **1.6000e-004** | **0.0000** | **2.3019** |

**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 | 7.5000e-004 | 4.9000e-004 | 4.9200e-003 | 2.0000e-005 | 1.6800e-003 | 1.0000e-005 | 1.6900e-003 | 4.5000e-004 | 1.0000e-005 | 4.6000e-004 | 0.0000 | 1.3884 | 1.3884 | 3.0000e-005 | 0.0000 | 1.3892 |
| **Total** | **7.5000e-004** | **4.9000e-004** | **4.9200e-003** | **2.0000e-005** | **1.6800e-003** | **1.0000e-005** | **1.6900e-003** | **4.5000e-004** | **1.0000e-005** | **4.6000e-004** | **0.0000** | **1.3884** | **1.3884** | **3.0000e-005** | **0.0000** | **1.3892** |

## 3.2 Architectural Coating - 2021

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.2353 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.9700e-003 | 0.0137 | 0.0164 | 3.0000e-005 | | 8.5000e-004 | 8.5000e-004 | | 8.5000e-004 | 8.5000e-004 | 0.0000 | 2.2979 | 2.2979 | 1.6000e-004 | 0.0000 | 2.3019 |
| **Total** | **1.2372** | **0.0137** | **0.0164** | **3.0000e-005** | | **8.5000e-004** | **8.5000e-004** | | **8.5000e-004** | **8.5000e-004** | **0.0000** | **2.2979** | **2.2979** | **1.6000e-004** | **0.0000** | **2.3019** |

**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 | 7.5000e-004 | 4.9000e-004 | 4.9200e-003 | 2.0000e-005 | 1.6800e-003 | 1.0000e-005 | 1.6900e-003 | 4.5000e-004 | 1.0000e-005 | 4.6000e-004 | 0.0000 | 1.3884 | 1.3884 | 3.0000e-005 | 0.0000 | 1.3892 |
| **Total** | **7.5000e-004** | **4.9000e-004** | **4.9200e-003** | **2.0000e-005** | **1.6800e-003** | **1.0000e-005** | **1.6900e-003** | **4.5000e-004** | **1.0000e-005** | **4.6000e-004** | **0.0000** | **1.3884** | **1.3884** | **3.0000e-005** | **0.0000** | **1.3892** |

## 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 | 0.0279 | 0.2513 | 0.4286 | 1.9400e-003 | 0.0269 | 2.1100e-003 | 0.0290 | 7.5900e-003 | 2.0100e-003 | 9.6000e-003 | 0.0000 | 48.1765 | 48.1765 | 6.7200e-003 | 0.0000 | 48.3446 |
| Unmitigated | 0.0279 | 0.2513 | 0.4286 | 1.9400e-003 | 0.0269 | 2.1100e-003 | 0.0290 | 7.5900e-003 | 2.0100e-003 | 9.6000e-003 | 0.0000 | 48.1765 | 48.1765 | 6.7200e-003 | 0.0000 | 48.3446 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Heavy Industry | 3.55 | 3.55 | 3.55 | 64,672 | 64,672 |
| Total | 3.55 | 3.55 | 3.55 | 64,672 | 64,672 |

## 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 |
| General Heavy Industry | 50.00 | 50.00 | 50.00 | 59.00 | 28.00 | 13.00 | 100 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Heavy Industry | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

## 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 | 455.8726 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 455.8726 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| NaturalGas Mitigated | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| NaturalGas Unmitigated | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |

## 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 | | | | | |
| General Heavy Industry | 3.70797e+006 | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| **Total** | | **0.0200** | **0.1818** | **0.1527** | **1.0900e-003** | | **0.0138** | **0.0138** | | **0.0138** | **0.0138** | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

**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 | | | | | |
| General Heavy Industry | 3.70797e+006 | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| **Total** | | **0.0200** | **0.1818** | **0.1527** | **1.0900e-003** | | **0.0138** | **0.0138** | | **0.0138** | **0.0138** | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| **Total** | | **455.8726** | **0.0206** | **4.2600e-003** | **457.6589** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| **Total** | | **455.8726** | **0.0206** | **4.2600e-003** | **457.6589** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.8177 | 2.0000e-005 | 2.0800e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.5400e-003 |
| Unmitigated | 0.8177 | 2.0000e-005 | 2.0800e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.5400e-003 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.1235 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.6939 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.7000e-004 | 2.0000e-005 | 2.0800e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.5400e-003 |
| **Total** | **0.8177** | **2.0000e-005** | **2.0800e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **3.1700e-003** | **3.1700e-003** | **1.0000e-005** | **0.0000** | **3.5400e-003** |

## 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 | 0.1235 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.6939 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.7000e-004 | 2.0000e-005 | 2.0800e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.5400e-003 |
| **Total** | **0.8177** | **2.0000e-005** | **2.0800e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **3.1700e-003** | **3.1700e-003** | **1.0000e-005** | **0.0000** | **3.5400e-003** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| Unmitigated | 77.7094 | 1.3417 | 0.0322 | 120.8530 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 41.0862 / 0 | 77.7094 | 1.3417 | 0.0322 | 120.8530 |
| **Total** | | **77.7094** | **1.3417** | **0.0322** | **120.8530** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 32.8689 / 0 | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| **Total** | | **62.1675** | **1.0734** | **0.0258** | **96.6824** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Unmitigated | 44.7209 | 2.6429 | 0.0000 | 110.7942 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 220.31 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| **Total** | | **44.7209** | **2.6429** | **0.0000** | **110.7942** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 165.233 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| **Total** | | **33.5407** | **1.9822** | **0.0000** | **83.0957** |

## 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

# CalEEMod Output

# Project Operations – Heavy Duty Truck (GHG BAU)

# Kamm Ave Pistachio Plant HD Truck Only BAU GHG

**Fresno County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Heavy Industry | 177.67 | 1000sqft | 4.08 | 177,670.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 3 | | | **Operational Year** | 2005 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 641.35 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Kamm Ave Pistachio Plant HD Truck Only BAU GHG - Fresno County, Annual

Project Characteristics -

Land Use - Site Area 315 Acres

Construction Phase - Developers schedule

Off-road Equipment -

Off-road Equipment - Increased equipment amount to reflect site size

Trips and VMT - Vendor trips include cement trucks for foundations, and delivery trucks for building materials

Grading -

Architectural Coating - Rule 4601 Architectural Coatings rule compliance. Parking lot 1.08 acres.

Vehicle Trips - Truck trips only. Trip gen 0.31 trips/ksf, Trip Length 34.1miles

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings compliance

Water Mitigation -

Waste Mitigation -

Fleet Mix - HHD Trucks Only

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaCoating | Area_EF_Nonresidential_Exterior | 250 | 150 |
| tblAreaCoating | Area_EF_Nonresidential_Interior | 250 | 150 |
| tblAreaCoating | Area_EF_Residential_Exterior | 250 | 150 |
| tblAreaCoating | Area_EF_Residential_Interior | 250 | 150 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblFleetMix | HHD | 0.11 | 1.00 |
| tblFleetMix | LDA | 0.42 | 0.00 |
| tblFleetMix | LDT1 | 0.06 | 0.00 |
| tblFleetMix | LDT2 | 0.15 | 0.00 |
| tblFleetMix | LHD1 | 0.04 | 0.00 |

| | | | |
|---|---|---|---|
| tblFleetMix | LHD2 | 6.9730e-003 | 0.00 |
| tblFleetMix | MCY | 5.2690e-003 | 0.00 |
| tblFleetMix | MDV | 0.18 | 0.00 |
| tblFleetMix | MH | 1.5690e-003 | 0.00 |
| tblFleetMix | MHD | 0.03 | 0.00 |
| tblFleetMix | OBUS | 2.0990e-003 | 0.00 |
| tblFleetMix | SBUS | 1.2120e-003 | 0.00 |
| tblFleetMix | UBUS | 1.7870e-003 | 0.00 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblVehicleTrips | CC_TL | 6.60 | 34.10 |
| tblVehicleTrips | CNW_TL | 6.60 | 34.10 |
| tblVehicleTrips | CW_TL | 14.70 | 34.10 |
| tblVehicleTrips | DV_TP | 5.00 | 0.00 |
| tblVehicleTrips | PB_TP | 3.00 | 0.00 |
| tblVehicleTrips | PR_TP | 92.00 | 100.00 |
| tblVehicleTrips | ST_TR | 1.50 | 0.31 |
| tblVehicleTrips | SU_TR | 1.50 | 0.31 |
| tblVehicleTrips | WD_TR | 1.50 | 0.31 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 1.2380 | 0.0142 | 0.0213 | 4.0000e-005 | 1.6800e-003 | 8.6000e-004 | 2.5300e-003 | 4.5000e-004 | 8.6000e-004 | 1.3000e-003 | 0.0000 | 3.6863 | 3.6863 | 1.9000e-004 | 0.0000 | 3.6911 |
| **Maximum** | **1.2380** | **0.0142** | **0.0213** | **4.0000e-005** | **1.6800e-003** | **8.6000e-004** | **2.5300e-003** | **4.5000e-004** | **8.6000e-004** | **1.3000e-003** | **0.0000** | **3.6863** | **3.6863** | **1.9000e-004** | **0.0000** | **3.6911** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 1.2380 | 0.0142 | 0.0213 | 4.0000e-005 | 1.6800e-003 | 8.6000e-004 | 2.5300e-003 | 4.5000e-004 | 8.6000e-004 | 1.3000e-003 | 0.0000 | 3.6863 | 3.6863 | 1.9000e-004 | 0.0000 | 3.6911 |
| **Maximum** | **1.2380** | **0.0142** | **0.0213** | **4.0000e-005** | **1.6800e-003** | **8.6000e-004** | **2.5300e-003** | **4.5000e-004** | **8.6000e-004** | **1.3000e-003** | **0.0000** | **3.6863** | **3.6863** | **1.9000e-004** | **0.0000** | **3.6911** |

| | **ROG** | **NOx** | **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** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **1-1-2021** | **3-31-2021** | 1.2921 | 1.2921 |
| | | **Highest** | 1.2921 | 1.2921 |

## 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 | 0.8177 | 2.0000e-005 | 2.0800e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.5400e-003 |
| Energy | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 653.7442 | 653.7442 | 0.0244 | 7.8900e-003 | 656.7063 |
| Mobile | 1.1499 | 16.0229 | 4.4355 | 0.1289 | 0.2921 | 0.4955 | 0.7876 | 0.0803 | 0.4740 | 0.5543 | 0.0000 | 1,317.4885 | 1,317.4885 | 0.2252 | 0.0000 | 1,323.1191 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 44.7209 | 0.0000 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 13.0348 | 64.6747 | 77.7094 | 1.3417 | 0.0322 | 120.8530 |
| **Total** | **1.9876** | **16.2047** | **4.5903** | **0.1300** | **0.2921** | **0.5093** | **0.8014** | **0.0803** | **0.4879** | **0.5681** | **57.7557** | **2,035.9105** | **2,093.6662** | **4.2343** | **0.0401** | **2,211.4762** |

## 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 | 0.8177 | 2.0000e-005 | 2.0800e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.5400e-003 |
| Energy | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 653.7442 | 653.7442 | 0.0244 | 7.8900e-003 | 656.7063 |
| Mobile | 1.1499 | 16.0229 | 4.4355 | 0.1289 | 0.2921 | 0.4955 | 0.7876 | 0.0803 | 0.4740 | 0.5543 | 0.0000 | 1,317.4885 | 1,317.4885 | 0.2252 | 0.0000 | 1,323.1191 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 33.5407 | 0.0000 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 10.4278 | 51.7397 | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| **Total** | **1.9876** | **16.2047** | **4.5903** | **0.1300** | **0.2921** | **0.5093** | **0.8014** | **0.0803** | **0.4879** | **0.5681** | **43.9685** | **2,022.9756** | **2,066.9441** | **3.3052** | **0.0337** | **2,159.6070** |

| | ROG | NOx | 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** | **23.87** | **0.64** | **1.28** | **21.94** | **16.08** | **2.35** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Architectural Coating | Architectural Coating | 1/1/2021 | 1/26/2021 | 5 | 18 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 266,505; Non-Residential Outdoor: 88,835; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 1 | 15.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Architectural Coating - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.2353 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.9700e-003 | 0.0137 | 0.0164 | 3.0000e-005 | | 8.5000e-004 | 8.5000e-004 | | 8.5000e-004 | 8.5000e-004 | 0.0000 | 2.2979 | 2.2979 | 1.6000e-004 | 0.0000 | 2.3019 |
| **Total** | **1.2372** | **0.0137** | **0.0164** | **3.0000e-005** | | **8.5000e-004** | **8.5000e-004** | | **8.5000e-004** | **8.5000e-004** | **0.0000** | **2.2979** | **2.2979** | **1.6000e-004** | **0.0000** | **2.3019** |

**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 | 7.5000e-004 | 4.9000e-004 | 4.9200e-003 | 2.0000e-005 | 1.6800e-003 | 1.0000e-005 | 1.6900e-003 | 4.5000e-004 | 1.0000e-005 | 4.6000e-004 | 0.0000 | 1.3884 | 1.3884 | 3.0000e-005 | 0.0000 | 1.3892 |
| **Total** | **7.5000e-004** | **4.9000e-004** | **4.9200e-003** | **2.0000e-005** | **1.6800e-003** | **1.0000e-005** | **1.6900e-003** | **4.5000e-004** | **1.0000e-005** | **4.6000e-004** | **0.0000** | **1.3884** | **1.3884** | **3.0000e-005** | **0.0000** | **1.3892** |

## 3.2 Architectural Coating - 2021

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.2353 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.9700e-003 | 0.0137 | 0.0164 | 3.0000e-005 | | 8.5000e-004 | 8.5000e-004 | | 8.5000e-004 | 8.5000e-004 | 0.0000 | 2.2979 | 2.2979 | 1.6000e-004 | 0.0000 | 2.3019 |
| **Total** | **1.2372** | **0.0137** | **0.0164** | **3.0000e-005** | | **8.5000e-004** | **8.5000e-004** | | **8.5000e-004** | **8.5000e-004** | **0.0000** | **2.2979** | **2.2979** | **1.6000e-004** | **0.0000** | **2.3019** |

**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 | 7.5000e-004 | 4.9000e-004 | 4.9200e-003 | 2.0000e-005 | 1.6800e-003 | 1.0000e-005 | 1.6900e-003 | 4.5000e-004 | 1.0000e-005 | 4.6000e-004 | 0.0000 | 1.3884 | 1.3884 | 3.0000e-005 | 0.0000 | 1.3892 |
| **Total** | **7.5000e-004** | **4.9000e-004** | **4.9200e-003** | **2.0000e-005** | **1.6800e-003** | **1.0000e-005** | **1.6900e-003** | **4.5000e-004** | **1.0000e-005** | **4.6000e-004** | **0.0000** | **1.3884** | **1.3884** | **3.0000e-005** | **0.0000** | **1.3892** |

## 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 | 1.1499 | 16.0229 | 4.4355 | 0.1289 | 0.2921 | 0.4955 | 0.7876 | 0.0803 | 0.4740 | 0.5543 | 0.0000 | 1,317.4885 | 1,317.4885 | 0.2252 | 0.0000 | 1,323.1191 |
| Unmitigated | 1.1499 | 16.0229 | 4.4355 | 0.1289 | 0.2921 | 0.4955 | 0.7876 | 0.0803 | 0.4740 | 0.5543 | 0.0000 | 1,317.4885 | 1,317.4885 | 0.2252 | 0.0000 | 1,323.1191 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Heavy Industry | 55.08 | 55.08 | 55.08 | 683,646 | 683,646 |
| Total | 55.08 | 55.08 | 55.08 | 683,646 | 683,646 |

## 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 |
| General Heavy Industry | 34.10 | 34.10 | 34.10 | 59.00 | 28.00 | 13.00 | 100 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Heavy Industry | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

## 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 | 455.8726 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 455.8726 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| NaturalGas Mitigated | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| NaturalGas Unmitigated | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |

## 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 | | | | | |
| General Heavy Industry | 3.70797e+006 | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| **Total** | | **0.0200** | **0.1818** | **0.1527** | **1.0900e-003** | | **0.0138** | **0.0138** | | **0.0138** | **0.0138** | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

**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 | | | | | |
| General Heavy Industry | 3.70797e+006 | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| **Total** | | **0.0200** | **0.1818** | **0.1527** | **1.0900e-003** | | **0.0138** | **0.0138** | | **0.0138** | **0.0138** | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| **Total** | | **455.8726** | **0.0206** | **4.2600e-003** | **457.6589** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| **Total** | | **455.8726** | **0.0206** | **4.2600e-003** | **457.6589** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.8177 | 2.0000e-005 | 2.0800e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.5400e-003 |
| Unmitigated | 0.8177 | 2.0000e-005 | 2.0800e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.5400e-003 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.1235 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.6939 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.7000e-004 | 2.0000e-005 | 2.0800e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.5400e-003 |
| **Total** | **0.8177** | **2.0000e-005** | **2.0800e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **3.1700e-003** | **3.1700e-003** | **1.0000e-005** | **0.0000** | **3.5400e-003** |

## 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 | 0.1235 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.6939 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.7000e-004 | 2.0000e-005 | 2.0800e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.5400e-003 |
| **Total** | **0.8177** | **2.0000e-005** | **2.0800e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **3.1700e-003** | **3.1700e-003** | **1.0000e-005** | **0.0000** | **3.5400e-003** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| Unmitigated | 77.7094 | 1.3417 | 0.0322 | 120.8530 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 41.0862 / 0 | 77.7094 | 1.3417 | 0.0322 | 120.8530 |
| **Total** | | **77.7094** | **1.3417** | **0.0322** | **120.8530** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 32.8689 / 0 | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| **Total** | | **62.1675** | **1.0734** | **0.0258** | **96.6824** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Unmitigated | 44.7209 | 2.6429 | 0.0000 | 110.7942 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 220.31 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| **Total** | | **44.7209** | **2.6429** | **0.0000** | **110.7942** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 165.233 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| **Total** | | **33.5407** | **1.9822** | **0.0000** | **83.0957** |

## 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

# CalEEMod Output

# Operations – Employee (GHG 2030)

# Kamm Ave Pistachio Const and Ops Employee 2030 GHG

**Fresno County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Heavy Industry | 177.67 | 1000sqft | 4.08 | 177,670.00 | 0 |
| Other Non-Asphalt Surfaces | 128.90 | Acre | 128.90 | 5,614,884.00 | 0 |
| Parking Lot | 1.60 | Acre | 1.60 | 69,696.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 3 | | | **Operational Year** | 2030 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 290 | **CH4 Intensity (lb/MWhr)** | 0.025 | **N2O Intensity (lb/MWhr)** | 0.005 |

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

Kamm Ave Pistachio Const and Ops Employee 2030 GHG - Fresno County, Annual

Project Characteristics - PG&E Intensity Factors

Land Use - Site Area 315 Acres, Disturbed Area 134.6 acres

Construction Phase - Developers schedule

Off-road Equipment - Increased equipment to reflect shorter than default schedule

Off-road Equipment - Limited Site Prep and Grading required at the site

Trips and VMT - Vendor trips include cement trucks and building materials. 778 haul trips assumed for road base on approx 9.6 acres

Grading -

Architectural Coating - Rule 4601 Architectural Coatings rule compliance. 1.6 acre parking lots

Vehicle Trips - Employees only ADT = 92.45 Trips/KSF = 0.52 Emp Trip Length Avg 40 miles.

Construction Off-road Equipment Mitigation - Tier 3 Mitigation

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings compliance

Water Mitigation -

Waste Mitigation -

Fleet Mix - Employee Fleet Mix No Truck

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 150 | 65 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 150 | 65 |
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 12.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstructionPhase | NumDays | 120.00 | 10.00 |
| tblFleetMix | HHD | 0.13 | 0.00 |
| tblFleetMix | HHD | 0.13 | 0.12 |

| | | | |
|---|---|---|---|
| tblFleetMix | HHD | 0.13 | 0.12 |
| tblFleetMix | LDA | 0.52 | 0.61 |
| tblFleetMix | LDA | 0.52 | 0.49 |
| tblFleetMix | LDA | 0.52 | 0.49 |
| tblFleetMix | LDT1 | 0.03 | 0.04 |
| tblFleetMix | LDT1 | 0.03 | 0.03 |
| tblFleetMix | LDT1 | 0.03 | 0.03 |
| tblFleetMix | LDT2 | 0.18 | 0.21 |
| tblFleetMix | LDT2 | 0.18 | 0.17 |
| tblFleetMix | LDT2 | 0.18 | 0.17 |
| tblFleetMix | LHD1 | 9.7000e-003 | 0.00 |
| tblFleetMix | LHD1 | 9.7000e-003 | 0.02 |
| tblFleetMix | LHD1 | 9.7000e-003 | 0.02 |
| tblFleetMix | LHD2 | 3.4040e-003 | 0.00 |
| tblFleetMix | LHD2 | 3.4040e-003 | 4.7320e-003 |
| tblFleetMix | LHD2 | 3.4040e-003 | 4.7320e-003 |
| tblFleetMix | MCY | 4.5630e-003 | 0.00 |
| tblFleetMix | MCY | 4.5630e-003 | 5.1540e-003 |
| tblFleetMix | MCY | 4.5630e-003 | 5.1540e-003 |
| tblFleetMix | MDV | 0.09 | 0.15 |
| tblFleetMix | MDV | 0.09 | 0.12 |
| tblFleetMix | MDV | 0.09 | 0.12 |
| tblFleetMix | MH | 4.3600e-004 | 0.00 |
| tblFleetMix | MH | 4.3600e-004 | 6.2900e-004 |
| tblFleetMix | MH | 4.3600e-004 | 6.2900e-004 |
| tblFleetMix | MHD | 0.03 | 0.00 |
| tblFleetMix | MHD | 0.03 | 0.03 |

| | | | |
|---|---|---|---|
| tblFleetMix | MHD | 0.03 | 0.03 |
| tblFleetMix | OBUS | 2.3060e-003 | 0.00 |
| tblFleetMix | OBUS | 2.3060e-003 | 2.3660e-003 |
| tblFleetMix | OBUS | 2.3060e-003 | 2.3660e-003 |
| tblFleetMix | SBUS | 9.9800e-004 | 0.00 |
| tblFleetMix | SBUS | 9.9800e-004 | 1.0970e-003 |
| tblFleetMix | SBUS | 9.9800e-004 | 1.0970e-003 |
| tblFleetMix | UBUS | 1.1850e-003 | 0.00 |
| tblFleetMix | UBUS | 1.1850e-003 | 1.5900e-003 |
| tblFleetMix | UBUS | 1.1850e-003 | 1.5900e-003 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.025 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblVehicleTrips | CC_TL | 6.60 | 40.00 |
| tblVehicleTrips | CNW_TL | 6.60 | 40.00 |
| tblVehicleTrips | CW_TL | 14.70 | 40.00 |
| tblVehicleTrips | ST_TR | 1.50 | 0.52 |
| tblVehicleTrips | SU_TR | 1.50 | 0.52 |
| tblVehicleTrips | WD_TR | 1.50 | 0.52 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | | | | | | | | | | | 0.0000 | 17.6434 | 17.6434 | 5.4300e-003 | 0.0000 | 17.7792 |
| **Maximum** | | | | | | | | | | | **0.0000** | **17.6434** | **17.6434** | **5.4300e-003** | **0.0000** | **17.7792** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | | | | | | | | | | | 0.0000 | 17.6434 | 17.6434 | 5.4300e-003 | 0.0000 | 17.7791 |
| **Maximum** | | | | | | | | | | | **0.0000** | **17.6434** | **17.6434** | **5.4300e-003** | **0.0000** | **17.7791** |

| | **ROG** | **NOx** | **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** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| | | **Highest** | | |

## 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 | 5.5100e-003 | 5.5100e-003 | 1.0000e-005 | 0.0000 | 5.8600e-003 |
| Energy | | | | | | | | | | | 0.0000 | 407.2128 | 407.2128 | 0.0218 | 7.2400e-003 | 409.9154 |
| Mobile | | | | | | | | | | | 0.0000 | 296.1168 | 296.1168 | 3.5300e-003 | 0.0000 | 296.2051 |
| Waste | | | | | | | | | | | 44.7209 | 0.0000 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| Water | | | | | | | | | | | 13.0348 | 29.2440 | 42.2788 | 1.3413 | 0.0321 | 85.3822 |
| **Total** | | | | | | | | | | | **57.7557** | **732.5791** | **790.3348** | **4.0096** | **0.0394** | **902.3028** |

## 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 | 5.5100e-003 | 5.5100e-003 | 1.0000e-005 | 0.0000 | 5.8600e-003 |
| Energy | | | | | | | | | | | 0.0000 | 407.2128 | 407.2128 | 0.0218 | 7.2400e-003 | 409.9154 |
| Mobile | | | | | | | | | | | 0.0000 | 296.1168 | 296.1168 | 3.5300e-003 | 0.0000 | 296.2051 |
| Waste | | | | | | | | | | | 33.5407 | 0.0000 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Water | | | | | | | | | | | 10.4278 | 23.3952 | 33.8230 | 1.0731 | 0.0257 | 68.3058 |
| **Total** | | | | | | | | | | | **43.9685** | **726.7303** | **770.6988** | **3.0806** | **0.0329** | **857.5278** |

| | **ROG** | **NOx** | **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** | **23.87** | **0.80** | **2.48** | **23.17** | **16.34** | **4.96** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2021 | 1/14/2021 | 5 | 10 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 130.5**

**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 |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |

**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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

## 3.2 Site Preparation - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | | | | | | | | | | | 0.0000 | 16.7179 | 16.7179 | 5.4100e-003 | 0.0000 | 16.8530 |
| **Total** | | | | | | | | | | | **0.0000** | **16.7179** | **16.7179** | **5.4100e-003** | **0.0000** | **16.8530** |

### 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 |
| Vendor | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | | | | | | | | | | | 0.0000 | 0.9256 | 0.9256 | 2.0000e-005 | 0.0000 | 0.9261 |
| **Total** | | | | | | | | | | | **0.0000** | **0.9256** | **0.9256** | **2.0000e-005** | **0.0000** | **0.9261** |

## 3.2 Site Preparation - 2021

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | | | | | | | | | | | 0.0000 | 16.7178 | 16.7178 | 5.4100e-003 | 0.0000 | 16.8530 |
| **Total** | | | | | | | | | | | **0.0000** | **16.7178** | **16.7178** | **5.4100e-003** | **0.0000** | **16.8530** |

**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 |
| Vendor | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | | | | | | | | | | | 0.0000 | 0.9256 | 0.9256 | 2.0000e-005 | 0.0000 | 0.9261 |
| **Total** | | | | | | | | | | | **0.0000** | **0.9256** | **0.9256** | **2.0000e-005** | **0.0000** | **0.9261** |

## 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 | 296.1168 | 296.1168 | 3.5300e-003 | 0.0000 | 296.2051 |
| Unmitigated | | | | | | | | | | | 0.0000 | 296.1168 | 296.1168 | 3.5300e-003 | 0.0000 | 296.2051 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Heavy Industry | 92.39 | 92.39 | 92.39 | 1,254,477 | 1,254,477 |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 92.39 | 92.39 | 92.39 | 1,254,477 | 1,254,477 |

## 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 |
| General Heavy Industry | 40.00 | 40.00 | 40.00 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |
| Other Non-Asphalt Surfaces | 14.70 | 6.60 | 6.60 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Parking Lot | 14.70 | 6.60 | 6.60 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Heavy Industry | 0.607139 | 0.039400 | 0.208980 | 0.149930 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Other Non-Asphalt Surfaces | 0.487139 | 0.031901 | 0.169199 | 0.121386 | 0.017033 | 0.004732 | 0.033028 | 0.124746 | 0.002366 | 0.001590 | 0.005154 | 0.001097 | 0.000629 |
| Parking Lot | 0.487139 | 0.031901 | 0.169199 | 0.121386 | 0.017033 | 0.004732 | 0.033028 | 0.124746 | 0.002366 | 0.001590 | 0.005154 | 0.001097 | 0.000629 |

## 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 | 209.3413 | 209.3413 | 0.0181 | 3.6100e-003 | 210.8680 |
| Electricity Unmitigated | | | | | | | | | | | 0.0000 | 209.3413 | 209.3413 | 0.0181 | 3.6100e-003 | 210.8680 |
| NaturalGas Mitigated | | | | | | | | | | | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| NaturalGas Unmitigated | | | | | | | | | | | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |

## 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 | | | | | |
| General Heavy Industry | 3.70797e+006 | | | | | | | | | | | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| Other Non-Asphalt Surfaces | 0 | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | | | | | | | | | | | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

**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 | | | | | |
| General Heavy Industry | 3.70797e+006 | | | | | | | | | | | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| Other Non-Asphalt Surfaces | 0 | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | | | | | | | | | | | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 206.1325 | 0.0178 | 3.5500e-003 | 207.6358 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 24393.6 | 3.2088 | 2.8000e-004 | 6.0000e-005 | 3.2322 |
| **Total** | | **209.3413** | **0.0181** | **3.6100e-003** | **210.8680** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 206.1325 | 0.0178 | 3.5500e-003 | 207.6358 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 24393.6 | 3.2088 | 2.8000e-004 | 6.0000e-005 | 3.2322 |
| **Total** | | **209.3413** | **0.0181** | **3.6100e-003** | **210.8680** |

## 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 5.5100e-003 | 5.5100e-003 | 1.0000e-005 | 0.0000 | 5.8600e-003 |
| Unmitigated | | | | | | | | | | | 0.0000 | 5.5100e-003 | 5.5100e-003 | 1.0000e-005 | 0.0000 | 5.8600e-003 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | | | | | | | | | | | 0.0000 | 5.5100e-003 | 5.5100e-003 | 1.0000e-005 | 0.0000 | 5.8600e-003 |
| **Total** | | | | | | | | | | | **0.0000** | **5.5100e-003** | **5.5100e-003** | **1.0000e-005** | **0.0000** | **5.8600e-003** |

**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 |
| Consumer Products | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | | | | | | | | | | | 0.0000 | 5.5100e-003 | 5.5100e-003 | 1.0000e-005 | 0.0000 | 5.8600e-003 |
| **Total** | | | | | | | | | | | **0.0000** | **5.5100e-003** | **5.5100e-003** | **1.0000e-005** | **0.0000** | **5.8600e-003** |

## 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 33.8230 | 1.0731 | 0.0257 | 68.3058 |
| Unmitigated | 42.2788 | 1.3413 | 0.0321 | 85.3822 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 41.0862 / 0 | 42.2788 | 1.3413 | 0.0321 | 85.3822 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **42.2788** | **1.3413** | **0.0321** | **85.3822** |

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 32.8689 / 0 | 33.8230 | 1.0731 | 0.0257 | 68.3058 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **33.8230** | **1.0731** | **0.0257** | **68.3058** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Unmitigated | 44.7209 | 2.6429 | 0.0000 | 110.7942 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 220.31 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **44.7209** | **2.6429** | **0.0000** | **110.7942** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 165.233 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **33.5407** | **1.9822** | **0.0000** | **83.0957** |

## 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

# CalEEMod Output

# Operations – Maintenance Truck (GHG 2030)

# Kamm Ave Pistachio Plant Maintenance Trucks Only GHG 2030

**Fresno County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Heavy Industry | 177.67 | 1000sqft | 4.08 | 177,670.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 3 | | | **Operational Year** | 2030 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 641.35 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Project Characteristics -

Land Use - Site Area 315 Acres

Construction Phase - Developers schedule

Off-road Equipment -

Off-road Equipment - Increased equipment amount to reflect site size

Trips and VMT - Vendor trips include cement trucks for foundations, and delivery trucks for building materials

Grading -

Architectural Coating - Rule 4601 Architectural Coatings rule compliance.  Parking lot 1.08 acres.

Vehicle Trips - Truck trips only. Trip gen 0.016 trips/ksf, Trip Length 50.0 miles

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings compliance

Water Mitigation -

Waste Mitigation -

Fleet Mix - LHD Maintenance Trucks Only

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblFleetMix | HHD | 0.13 | 0.00 |
| tblFleetMix | LDA | 0.52 | 0.00 |
| tblFleetMix | LDT1 | 0.03 | 0.00 |
| tblFleetMix | LDT2 | 0.18 | 0.00 |
| tblFleetMix | LHD1 | 9.7000e-003 | 1.00 |
| tblFleetMix | LHD2 | 3.4040e-003 | 0.00 |
| tblFleetMix | MCY | 4.5630e-003 | 0.00 |
| tblFleetMix | MDV | 0.09 | 0.00 |
| tblFleetMix | MH | 4.3600e-004 | 0.00 |
| tblFleetMix | MHD | 0.03 | 0.00 |
| tblFleetMix | OBUS | 2.3060e-003 | 0.00 |
| tblFleetMix | SBUS | 9.9800e-004 | 0.00 |
| tblFleetMix | UBUS | 1.1850e-003 | 0.00 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblVehicleTrips | CC_TL | 6.60 | 50.00 |
| tblVehicleTrips | CNW_TL | 6.60 | 50.00 |
| tblVehicleTrips | CW_TL | 14.70 | 50.00 |
| tblVehicleTrips | DV_TP | 5.00 | 0.00 |
| tblVehicleTrips | PB_TP | 3.00 | 0.00 |
| tblVehicleTrips | PR_TP | 92.00 | 100.00 |
| tblVehicleTrips | ST_TR | 1.50 | 0.02 |
| tblVehicleTrips | SU_TR | 1.50 | 0.02 |
| tblVehicleTrips | WD_TR | 1.50 | 0.02 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 1.2380 | 0.0142 | 0.0213 | 4.0000e-005 | 1.6800e-003 | 8.6000e-004 | 2.5300e-003 | 4.5000e-004 | 8.6000e-004 | 1.3000e-003 | 0.0000 | 3.6863 | 3.6863 | 1.9000e-004 | 0.0000 | 3.6911 |
| **Maximum** | **1.2380** | **0.0142** | **0.0213** | **4.0000e-005** | **1.6800e-003** | **8.6000e-004** | **2.5300e-003** | **4.5000e-004** | **8.6000e-004** | **1.3000e-003** | **0.0000** | **3.6863** | **3.6863** | **1.9000e-004** | **0.0000** | **3.6911** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 1.2380 | 0.0142 | 0.0213 | 4.0000e-005 | 1.6800e-003 | 8.6000e-004 | 2.5300e-003 | 4.5000e-004 | 8.6000e-004 | 1.3000e-003 | 0.0000 | 3.6863 | 3.6863 | 1.9000e-004 | 0.0000 | 3.6911 |
| **Maximum** | **1.2380** | **0.0142** | **0.0213** | **4.0000e-005** | **1.6800e-003** | **8.6000e-004** | **2.5300e-003** | **4.5000e-004** | **8.6000e-004** | **1.3000e-003** | **0.0000** | **3.6863** | **3.6863** | **1.9000e-004** | **0.0000** | **3.6911** |

| | **ROG** | **NOx** | **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** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **1-1-2021** | **3-31-2021** | 1.2921 | 1.2921 |
| | | **Highest** | 1.2921 | 1.2921 |

## 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 | 0.8176 | 1.0000e-005 | 1.6200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3800e-003 |
| Energy | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 653.7442 | 653.7442 | 0.0244 | 7.8900e-003 | 656.7063 |
| Mobile | 8.7200e-003 | 0.0785 | 0.0550 | 4.6000e-004 | 0.0269 | 1.0800e-003 | 0.0280 | 7.6100e-003 | 1.0300e-003 | 8.6400e-003 | 0.0000 | 42.3068 | 42.3068 | 6.7000e-004 | 0.0000 | 42.3235 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 44.7209 | 0.0000 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 13.0348 | 64.6747 | 77.7094 | 1.3417 | 0.0322 | 120.8530 |
| **Total** | **0.8463** | **0.2603** | **0.2093** | **1.5500e-003** | **0.0269** | **0.0149** | **0.0418** | **7.6100e-003** | **0.0149** | **0.0225** | **57.7557** | **760.7288** | **818.4845** | **4.0097** | **0.0401** | **930.6804** |

## 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 | 0.8176 | 1.0000e-005 | 1.6200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3800e-003 |
| Energy | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 653.7442 | 653.7442 | 0.0244 | 7.8900e-003 | 656.7063 |
| Mobile | 8.7200e-003 | 0.0785 | 0.0550 | 4.6000e-004 | 0.0269 | 1.0800e-003 | 0.0280 | 7.6100e-003 | 1.0300e-003 | 8.6400e-003 | 0.0000 | 42.3068 | 42.3068 | 6.7000e-004 | 0.0000 | 42.3235 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 33.5407 | 0.0000 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 10.4278 | 51.7397 | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| **Total** | **0.8463** | **0.2603** | **0.2093** | **1.5500e-003** | **0.0269** | **0.0149** | **0.0418** | **7.6100e-003** | **0.0149** | **0.0225** | **43.9685** | **747.7939** | **791.7624** | **3.0807** | **0.0337** | **878.8112** |

| | **ROG** | **NOx** | **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** | **23.87** | **1.70** | **3.26** | **23.17** | **16.08** | **5.57** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Architectural Coating | Architectural Coating | 1/1/2021 | 1/26/2021 | 5 | 18 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 266,505; Non-Residential Outdoor: 88,835; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 1 | 15.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Architectural Coating - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.2353 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.9700e-003 | 0.0137 | 0.0164 | 3.0000e-005 | | 8.5000e-004 | 8.5000e-004 | | 8.5000e-004 | 8.5000e-004 | 0.0000 | 2.2979 | 2.2979 | 1.6000e-004 | 0.0000 | 2.3019 |
| **Total** | **1.2372** | **0.0137** | **0.0164** | **3.0000e-005** | | **8.5000e-004** | **8.5000e-004** | | **8.5000e-004** | **8.5000e-004** | **0.0000** | **2.2979** | **2.2979** | **1.6000e-004** | **0.0000** | **2.3019** |

**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 | 7.5000e-004 | 4.9000e-004 | 4.9200e-003 | 2.0000e-005 | 1.6800e-003 | 1.0000e-005 | 1.6900e-003 | 4.5000e-004 | 1.0000e-005 | 4.6000e-004 | 0.0000 | 1.3884 | 1.3884 | 3.0000e-005 | 0.0000 | 1.3892 |
| **Total** | **7.5000e-004** | **4.9000e-004** | **4.9200e-003** | **2.0000e-005** | **1.6800e-003** | **1.0000e-005** | **1.6900e-003** | **4.5000e-004** | **1.0000e-005** | **4.6000e-004** | **0.0000** | **1.3884** | **1.3884** | **3.0000e-005** | **0.0000** | **1.3892** |

## 3.2 Architectural Coating - 2021

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.2353 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.9700e-003 | 0.0137 | 0.0164 | 3.0000e-005 | | 8.5000e-004 | 8.5000e-004 | | 8.5000e-004 | 8.5000e-004 | 0.0000 | 2.2979 | 2.2979 | 1.6000e-004 | 0.0000 | 2.3019 |
| **Total** | **1.2372** | **0.0137** | **0.0164** | **3.0000e-005** | | **8.5000e-004** | **8.5000e-004** | | **8.5000e-004** | **8.5000e-004** | **0.0000** | **2.2979** | **2.2979** | **1.6000e-004** | **0.0000** | **2.3019** |

**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 | 7.5000e-004 | 4.9000e-004 | 4.9200e-003 | 2.0000e-005 | 1.6800e-003 | 1.0000e-005 | 1.6900e-003 | 4.5000e-004 | 1.0000e-005 | 4.6000e-004 | 0.0000 | 1.3884 | 1.3884 | 3.0000e-005 | 0.0000 | 1.3892 |
| **Total** | **7.5000e-004** | **4.9000e-004** | **4.9200e-003** | **2.0000e-005** | **1.6800e-003** | **1.0000e-005** | **1.6900e-003** | **4.5000e-004** | **1.0000e-005** | **4.6000e-004** | **0.0000** | **1.3884** | **1.3884** | **3.0000e-005** | **0.0000** | **1.3892** |

## 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 | 8.7200e-003 | 0.0785 | 0.0550 | 4.6000e-004 | 0.0269 | 1.0800e-003 | 0.0280 | 7.6100e-003 | 1.0300e-003 | 8.6400e-003 | 0.0000 | 42.3068 | 42.3068 | 6.7000e-004 | 0.0000 | 42.3235 |
| Unmitigated | 8.7200e-003 | 0.0785 | 0.0550 | 4.6000e-004 | 0.0269 | 1.0800e-003 | 0.0280 | 7.6100e-003 | 1.0300e-003 | 8.6400e-003 | 0.0000 | 42.3068 | 42.3068 | 6.7000e-004 | 0.0000 | 42.3235 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Heavy Industry | 3.55 | 3.55 | 3.55 | 64,672 | 64,672 |
| Total | 3.55 | 3.55 | 3.55 | 64,672 | 64,672 |

## 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 |
| General Heavy Industry | 50.00 | 50.00 | 50.00 | 59.00 | 28.00 | 13.00 | 100 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Heavy Industry | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

## 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 | 455.8726 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 455.8726 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| NaturalGas Mitigated | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| NaturalGas Unmitigated | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |

## 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 | | | | | |
| General Heavy Industry | 3.70797e+006 | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| **Total** | | **0.0200** | **0.1818** | **0.1527** | **1.0900e-003** | | **0.0138** | **0.0138** | | **0.0138** | **0.0138** | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

**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 | | | | | |
| General Heavy Industry | 3.70797e+006 | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| **Total** | | **0.0200** | **0.1818** | **0.1527** | **1.0900e-003** | | **0.0138** | **0.0138** | | **0.0138** | **0.0138** | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| **Total** | | **455.8726** | **0.0206** | **4.2600e-003** | **457.6589** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| **Total** | | **455.8726** | **0.0206** | **4.2600e-003** | **457.6589** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.8176 | 1.0000e-005 | 1.6200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3800e-003 |
| Unmitigated | 0.8176 | 1.0000e-005 | 1.6200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3800e-003 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.1235 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.6939 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 1.5000e-004 | 1.0000e-005 | 1.6200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3800e-003 |
| **Total** | **0.8176** | **1.0000e-005** | **1.6200e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **3.1700e-003** | **3.1700e-003** | **1.0000e-005** | **0.0000** | **3.3800e-003** |

## 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 | 0.1235 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.6939 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 1.5000e-004 | 1.0000e-005 | 1.6200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3800e-003 |
| **Total** | **0.8176** | **1.0000e-005** | **1.6200e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **3.1700e-003** | **3.1700e-003** | **1.0000e-005** | **0.0000** | **3.3800e-003** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| Unmitigated | 77.7094 | 1.3417 | 0.0322 | 120.8530 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 41.0862 / 0 | 77.7094 | 1.3417 | 0.0322 | 120.8530 |
| **Total** | | **77.7094** | **1.3417** | **0.0322** | **120.8530** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 32.8689 / 0 | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| **Total** | | **62.1675** | **1.0734** | **0.0258** | **96.6824** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Unmitigated | 44.7209 | 2.6429 | 0.0000 | 110.7942 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 220.31 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| **Total** | | **44.7209** | **2.6429** | **0.0000** | **110.7942** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 165.233 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| **Total** | | **33.5407** | **1.9822** | **0.0000** | **83.0957** |

## 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

# CalEEMod Output

# Operations – Heavy Duty Truck (GHG 2030)

# Kamm Ave Pistachio Plant HD Truck Only 2030 GHG

**Fresno County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Heavy Industry | 177.67 | 1000sqft | 4.08 | 177,670.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 3 | | | **Operational Year** | 2030 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 641.35 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Project Characteristics -

Land Use - Site Area 315 Acres

Construction Phase - Developers schedule

Off-road Equipment -

Off-road Equipment - Increased equipment amount to reflect site size

Trips and VMT - Vendor trips include cement trucks for foundations, and delivery trucks for building materials

Grading -

Architectural Coating - Rule 4601 Architectural Coatings rule compliance.  Parking lot 1.08 acres.

Vehicle Trips - Truck trips only. Trip gen 0.31 trips/ksf, Trip Length 34.1miles

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings compliance

Water Mitigation -

Waste Mitigation -

Fleet Mix - HHD Trucks Only

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintParkingCheck | False | True |
| tblFleetMix | HHD | 0.13 | 1.00 |
| tblFleetMix | LDA | 0.52 | 0.00 |
| tblFleetMix | LDT1 | 0.03 | 0.00 |
| tblFleetMix | LDT2 | 0.18 | 0.00 |
| tblFleetMix | LHD1 | 9.7000e-003 | 0.00 |
| tblFleetMix | LHD2 | 3.4040e-003 | 0.00 |
| tblFleetMix | MCY | 4.5630e-003 | 0.00 |
| tblFleetMix | MDV | 0.09 | 0.00 |
| tblFleetMix | MH | 4.3600e-004 | 0.00 |
| tblFleetMix | MHD | 0.03 | 0.00 |
| tblFleetMix | OBUS | 2.3060e-003 | 0.00 |
| tblFleetMix | SBUS | 9.9800e-004 | 0.00 |
| tblFleetMix | UBUS | 1.1850e-003 | 0.00 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblVehicleTrips | CC_TL | 6.60 | 34.10 |
| tblVehicleTrips | CNW_TL | 6.60 | 34.10 |
| tblVehicleTrips | CW_TL | 14.70 | 34.10 |
| tblVehicleTrips | DV_TP | 5.00 | 0.00 |
| tblVehicleTrips | PB_TP | 3.00 | 0.00 |
| tblVehicleTrips | PR_TP | 92.00 | 100.00 |
| tblVehicleTrips | ST_TR | 1.50 | 0.31 |
| tblVehicleTrips | SU_TR | 1.50 | 0.31 |
| tblVehicleTrips | WD_TR | 1.50 | 0.31 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 1.2380 | 0.0142 | 0.0213 | 4.0000e-005 | 1.6800e-003 | 8.6000e-004 | 2.5300e-003 | 4.5000e-004 | 8.6000e-004 | 1.3000e-003 | 0.0000 | 3.6863 | 3.6863 | 1.9000e-004 | 0.0000 | 3.6911 |
| **Maximum** | **1.2380** | **0.0142** | **0.0213** | **4.0000e-005** | **1.6800e-003** | **8.6000e-004** | **2.5300e-003** | **4.5000e-004** | **8.6000e-004** | **1.3000e-003** | **0.0000** | **3.6863** | **3.6863** | **1.9000e-004** | **0.0000** | **3.6911** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 1.2380 | 0.0142 | 0.0213 | 4.0000e-005 | 1.6800e-003 | 8.6000e-004 | 2.5300e-003 | 4.5000e-004 | 8.6000e-004 | 1.3000e-003 | 0.0000 | 3.6863 | 3.6863 | 1.9000e-004 | 0.0000 | 3.6911 |
| **Maximum** | **1.2380** | **0.0142** | **0.0213** | **4.0000e-005** | **1.6800e-003** | **8.6000e-004** | **2.5300e-003** | **4.5000e-004** | **8.6000e-004** | **1.3000e-003** | **0.0000** | **3.6863** | **3.6863** | **1.9000e-004** | **0.0000** | **3.6911** |

| | **ROG** | **NOx** | **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** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **1-1-2021** | **3-31-2021** | 1.2921 | 1.2921 |
| | | **Highest** | 1.2921 | 1.2921 |

## 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 | 0.8176 | 1.0000e-005 | 1.6200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3800e-003 |
| Energy | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 653.7442 | 653.7442 | 0.0244 | 7.8900e-003 | 656.7063 |
| Mobile | 0.0693 | 1.8805 | 0.4305 | 0.0116 | 0.2920 | 4.1900e-003 | 0.2962 | 0.0802 | 4.0100e-003 | 0.0843 | 0.0000 | 1,102.8138 | 1,102.8138 | 0.0446 | 0.0000 | 1,103.9288 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 44.7209 | 0.0000 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 13.0348 | 64.6747 | 77.7094 | 1.3417 | 0.0322 | 120.8530 |
| **Total** | **0.9069** | **2.0622** | **0.5848** | **0.0127** | **0.2920** | **0.0180** | **0.3100** | **0.0802** | **0.0178** | **0.0981** | **57.7557** | **1,821.2358** | **1,878.9915** | **4.0537** | **0.0401** | **1,992.2857** |

## 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 | 0.8176 | 1.0000e-005 | 1.6200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3800e-003 |
| Energy | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 653.7442 | 653.7442 | 0.0244 | 7.8900e-003 | 656.7063 |
| Mobile | 0.0693 | 1.8805 | 0.4305 | 0.0116 | 0.2920 | 4.1900e-003 | 0.2962 | 0.0802 | 4.0100e-003 | 0.0843 | 0.0000 | 1,102.8138 | 1,102.8138 | 0.0446 | 0.0000 | 1,103.9288 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 33.5407 | 0.0000 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 10.4278 | 51.7397 | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| **Total** | **0.9069** | **2.0622** | **0.5848** | **0.0127** | **0.2920** | **0.0180** | **0.3100** | **0.0802** | **0.0178** | **0.0981** | **43.9685** | **1,808.3009** | **1,852.2694** | **3.1246** | **0.0337** | **1,940.4166** |

| | ROG | NOx | 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** | **23.87** | **0.71** | **1.42** | **22.92** | **16.08** | **2.60** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Architectural Coating | Architectural Coating | 1/1/2021 | 1/26/2021 | 5 | 18 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 266,505; Non-Residential Outdoor: 88,835; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 1 | 15.00 | 0.00 | 0.00 | 16.80 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Architectural Coating - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.2353 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.9700e-003 | 0.0137 | 0.0164 | 3.0000e-005 | | 8.5000e-004 | 8.5000e-004 | | 8.5000e-004 | 8.5000e-004 | 0.0000 | 2.2979 | 2.2979 | 1.6000e-004 | 0.0000 | 2.3019 |
| **Total** | **1.2372** | **0.0137** | **0.0164** | **3.0000e-005** | | **8.5000e-004** | **8.5000e-004** | | **8.5000e-004** | **8.5000e-004** | **0.0000** | **2.2979** | **2.2979** | **1.6000e-004** | **0.0000** | **2.3019** |

**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 | 7.5000e-004 | 4.9000e-004 | 4.9200e-003 | 2.0000e-005 | 1.6800e-003 | 1.0000e-005 | 1.6900e-003 | 4.5000e-004 | 1.0000e-005 | 4.6000e-004 | 0.0000 | 1.3884 | 1.3884 | 3.0000e-005 | 0.0000 | 1.3892 |
| **Total** | **7.5000e-004** | **4.9000e-004** | **4.9200e-003** | **2.0000e-005** | **1.6800e-003** | **1.0000e-005** | **1.6900e-003** | **4.5000e-004** | **1.0000e-005** | **4.6000e-004** | **0.0000** | **1.3884** | **1.3884** | **3.0000e-005** | **0.0000** | **1.3892** |

## 3.2 Architectural Coating - 2021

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.2353 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.9700e-003 | 0.0137 | 0.0164 | 3.0000e-005 | | 8.5000e-004 | 8.5000e-004 | | 8.5000e-004 | 8.5000e-004 | 0.0000 | 2.2979 | 2.2979 | 1.6000e-004 | 0.0000 | 2.3019 |
| **Total** | **1.2372** | **0.0137** | **0.0164** | **3.0000e-005** | | **8.5000e-004** | **8.5000e-004** | | **8.5000e-004** | **8.5000e-004** | **0.0000** | **2.2979** | **2.2979** | **1.6000e-004** | **0.0000** | **2.3019** |

**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 | 7.5000e-004 | 4.9000e-004 | 4.9200e-003 | 2.0000e-005 | 1.6800e-003 | 1.0000e-005 | 1.6900e-003 | 4.5000e-004 | 1.0000e-005 | 4.6000e-004 | 0.0000 | 1.3884 | 1.3884 | 3.0000e-005 | 0.0000 | 1.3892 |
| **Total** | **7.5000e-004** | **4.9000e-004** | **4.9200e-003** | **2.0000e-005** | **1.6800e-003** | **1.0000e-005** | **1.6900e-003** | **4.5000e-004** | **1.0000e-005** | **4.6000e-004** | **0.0000** | **1.3884** | **1.3884** | **3.0000e-005** | **0.0000** | **1.3892** |

## 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 | 0.0693 | 1.8805 | 0.4305 | 0.0116 | 0.2920 | 4.1900e-003 | 0.2962 | 0.0802 | 4.0100e-003 | 0.0843 | 0.0000 | 1,102.8138 | 1,102.8138 | 0.0446 | 0.0000 | 1,103.9288 |
| Unmitigated | 0.0693 | 1.8805 | 0.4305 | 0.0116 | 0.2920 | 4.1900e-003 | 0.2962 | 0.0802 | 4.0100e-003 | 0.0843 | 0.0000 | 1,102.8138 | 1,102.8138 | 0.0446 | 0.0000 | 1,103.9288 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Heavy Industry | 55.08 | 55.08 | 55.08 | 683,646 | 683,646 |
| Total | 55.08 | 55.08 | 55.08 | 683,646 | 683,646 |

## 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 |
| General Heavy Industry | 34.10 | 34.10 | 34.10 | 59.00 | 28.00 | 13.00 | 100 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Heavy Industry | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 1.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

## 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 | 455.8726 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 455.8726 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| NaturalGas Mitigated | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| NaturalGas Unmitigated | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |

## 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 | | | | | |
| General Heavy Industry | 3.70797e+006 | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| **Total** | | **0.0200** | **0.1818** | **0.1527** | **1.0900e-003** | | **0.0138** | **0.0138** | | **0.0138** | **0.0138** | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

**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 | | | | | |
| General Heavy Industry | 3.70797e+006 | 0.0200 | 0.1818 | 0.1527 | 1.0900e-003 | | 0.0138 | 0.0138 | | 0.0138 | 0.0138 | 0.0000 | 197.8716 | 197.8716 | 3.7900e-003 | 3.6300e-003 | 199.0474 |
| **Total** | | **0.0200** | **0.1818** | **0.1527** | **1.0900e-003** | | **0.0138** | **0.0138** | | **0.0138** | **0.0138** | **0.0000** | **197.8716** | **197.8716** | **3.7900e-003** | **3.6300e-003** | **199.0474** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| **Total** | | **455.8726** | **0.0206** | **4.2600e-003** | **457.6589** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Heavy Industry | 1.56705e+006 | 455.8726 | 0.0206 | 4.2600e-003 | 457.6589 |
| **Total** | | **455.8726** | **0.0206** | **4.2600e-003** | **457.6589** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.8176 | 1.0000e-005 | 1.6200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3800e-003 |
| Unmitigated | 0.8176 | 1.0000e-005 | 1.6200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3800e-003 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.1235 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.6939 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 1.5000e-004 | 1.0000e-005 | 1.6200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3800e-003 |
| **Total** | **0.8176** | **1.0000e-005** | **1.6200e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **3.1700e-003** | **3.1700e-003** | **1.0000e-005** | **0.0000** | **3.3800e-003** |

## 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 | 0.1235 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.6939 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 1.5000e-004 | 1.0000e-005 | 1.6200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1700e-003 | 3.1700e-003 | 1.0000e-005 | 0.0000 | 3.3800e-003 |
| **Total** | **0.8176** | **1.0000e-005** | **1.6200e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **3.1700e-003** | **3.1700e-003** | **1.0000e-005** | **0.0000** | **3.3800e-003** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| Unmitigated | 77.7094 | 1.3417 | 0.0322 | 120.8530 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 41.0862 / 0 | 77.7094 | 1.3417 | 0.0322 | 120.8530 |
| **Total** | | **77.7094** | **1.3417** | **0.0322** | **120.8530** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Heavy Industry | 32.8689 / 0 | 62.1675 | 1.0734 | 0.0258 | 96.6824 |
| **Total** | | **62.1675** | **1.0734** | **0.0258** | **96.6824** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| Unmitigated | 44.7209 | 2.6429 | 0.0000 | 110.7942 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 220.31 | 44.7209 | 2.6429 | 0.0000 | 110.7942 |
| **Total** | | **44.7209** | **2.6429** | **0.0000** | **110.7942** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Heavy Industry | 165.233 | 33.5407 | 1.9822 | 0.0000 | 83.0957 |
| **Total** | | **33.5407** | **1.9822** | **0.0000** | **83.0957** |

## 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

# Appendix B: San Joaquin Valley Air Pollution Control District Amicus Brief on Friant Ranch Supreme Court Decision

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SUPREME COURT COPY

**CASE NO. S219783**

**IN THE SUPREME COURT OF CALIFORNIA**

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SIERRA CLUB, REVIVE THE SAN JOAQUIN, and
LEAGUE OF WOMEN VOTERS OF FRESNO,
*Plaintiffs and Appellants*

v.

COUNTY OF FRESNO,
*Defendant and Respondent*

FRIANT RANCH, L.P.,
*Real Party in Interest and Respondent*

SUPREME COURT
FILED

APR 13 2015

Frank A. McGuire Clerk

Deputy

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After a Decision by the Court of Appeal, filed May 27, 2014
Fifth Appellate District Case No. F066798

Appeal from the Superior Court of California, County of Fresno
Case No. 11CECG00726

---

# APPLICATION FOR LEAVE TO FILE AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO AND REAL PARTY IN INTEREST AND RESPONDENT, FRIANT RANCH, L.P.

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## APPLICATION

Pursuant to California Rules of Court 8.520(f)(1), proposed Amicus Curiae San Joaquin Valley Unified Air Pollution Control District hereby requests permission from the Chief Justice to file an amicus brief in support of Defendant and Respondent, County of Fresno, and Defendant and Real Parties in Interest Friant Ranch, L.P. Pursuant to Rule 8.520(f)(5) of the California Rules of Court, the proposed amicus curiae brief is combined with this Application. The brief addresses the following issue certified by this Court for review:

> Is an EIR adequate when it identifies the health impacts of air pollution and quantifies a project's expected emissions, or does CEQA further require the EIR to *correlate* a project's air quality emissions to specific health impacts?

As of the date of this filing, the deadline for the final reply brief on the merits was March 5, 2015. Accordingly, under Rule 8.520(f)(2), this application and brief are timely.

### 1. Background and Interest of San Joaquin Valley Unified Air Pollution Control District

The San Joaquin Valley Unified Air Pollution Control District ("Air District") regulates air quality in the eight counties comprising the San Joaquin Valley ("Central Valley"): Kern, Tulare, Madera, Fresno, Merced, San Joaquin, Stanislaus, and Kings, and is primarily responsible for attaining air quality standards within its jurisdiction. After billions of dollars of investment by Central Valley businesses, pioneering air quality regulations, and consistent efforts by residents, the Central Valley air basin has made historic improvements in air quality.

The Central Valley's geographical, topographical and meteorological features create exceptionally challenging air quality

conditions. For example, it receives air pollution transported from the San Francisco Bay Area and northern Central Valley communities, and the southern portion of the Central Valley includes three mountain ranges (Sierra, Tehachapi, and Coastal) that, under some meteorological conditions, effectively trap air pollution. Central Valley air pollution is only a fraction of what the Bay Area and Los Angeles produce, but these natural conditions result in air quality conditions that are only marginally better than Los Angeles, even though about ten times more pollution is emitted in the Los Angeles region. Bay Area air quality is much better than the Central Valley's, even though the Bay Area produces about six times more pollution. The Central Valley also receives air pollution transported from the Bay Area and northern counties in the Central Valley, including Sacramento, and transboundary anthropogenic ozone from as far away as China.

Notwithstanding these challenges, the Central Valley has reduced emissions at the same or better rate than other areas in California and has achieved unparalleled milestones in protecting public health and the environment:

- In the last decade, the Central Valley became the first air basin classified by the federal government under the Clean Air Act as a "serious nonattainment" area to come into attainment of health-based National Ambient Air Quality Standard ("NAAQS") for coarse particulate matter (PM10), an achievement made even more notable given the Valley's extensive agricultural sector. Unhealthy levels of particulate matter can cause and exacerbate a range of chronic and acute illnesses.
- In 2013, the Central Valley became the first air basin in the country to improve from a federal designation of "extreme" nonattainment to

actually attain (and quality for an attainment designation) of the 1-hour ozone NAAQS; ozone creates "smog" and, like PM10, causes adverse health impacts.

- The Central Valley also is in full attainment of federal standards for lead, nitrogen dioxide, sulfur dioxide, and carbon monoxide.
- The Central Valley continues to make progress toward compliance with its last two attainment standards, with the number of exceedences for the 8-hour ozone NAAQS reduced by 74% (for the 1997 standard) and 38% (for the 2008 standard) since 1991, and for the small particulate matter (PM2.5) NAAQS reduced by 85% (for the 1997 standard) and 61% (for the 2006 standard).

Sustained improvement in Central Valley air quality requires a rigorous and comprehensive regulatory framework that includes prohibitions (e.g., on wood-burning fireplaces in new residences), mandates (e.g., requiring the installation of best available pollution reduction technologies on new and modified equipment and industrial operations), innovations (e.g., fees assessed against residential development to fund pollution reduction actions to "offset" vehicular emissions associated with new residences), incentive programs (e.g., funding replacements of older, more polluting heavy duty trucks and school buses)[1], ongoing planning for continued air quality improvements, and enforcement of Air District permits and regulations.

The Air District is also an expert air quality agency for the eight counties and cities in the San Joaquin Valley. In that capacity, the Air District has developed air quality emission guidelines for use by the Central

---

[1] San Joaquin's incentive program has been so successful that through 2012, it has awarded over $ 432 million in incentive funds and has achieved 93,349 tons of lifetime emissions reductions. *See* SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 2012 PM2.5 PLAN, 6-6 (2012) *available at* http://www.valleyair.org/Workshops/postings/2012/12-20-12PM25/FinalVersion/06%20Chapter%206%20Incentives.pdf.

Valley counties and cities that implement the California Environment Quality Act (CEQA).[2] In its guidance, the Air District has distinguished between toxic air contaminants and criteria air pollutants.[3] Recognizing this distinction, the Air District's CEQA Guidance has adopted distinct thresholds of significance for *criteria* pollutants (i.e., ozone, PM2.5 and their respective precursor pollutants) based upon scientific and factual data which demonstrates the level that can be accommodated on a cumulative basis in the San Joaquin Valley without affecting the attainment of the applicable NAAQS.[4] For *toxic air* pollutants, the District has adopted different thresholds of significance which scientific and factual data demonstrates has the potential to expose sensitive receptors (i.e., children, the elderly) to levels which may result in localized health impacts.[5]

The Air District's CEQA Guidance was followed by the County of Fresno in its environment review of the Friant Ranch project, for which the Air District also served as a commenting agency. The Court of Appeal's holding, however, requiring correlation between the project's criteria

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[2] *See, e.g.*, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, PLANNING DIVISION, GUIDE FOR ASSESSING AND MITIGATING AIR QUALITY IMPACTS (2015), *available at* http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf ("CEQA Guidance").

[3] Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as birth defects. There are currently 189 toxic air contaminants regulated by the United States Environmental Protection Agency ("EPA") and the states pursuant to the Clean Air Act. 42 U.S.C. § 7412. Common TACs include benzene, perchloroethylene and asbestos. *Id.* at 7412(b).

In contrast, there are only six (6) criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead. Although criteria air pollutants can also be harmful to human health, they are distinguishable from toxic air contaminants and are regulated separately. For instance, while criteria pollutants are regulated by numerous sections throughout Title I of the Clean Air Act, the regulation of toxic air contaminants occurs solely under section 112 of the Act. Compare 42 U.S.C. §§ 7407 – 7411 & 7501 – 7515 with 42 U.S.C. § 7411.

[4] See, e.g., CEQA Guidance at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, pp. 64-66, 80.

[5] See, e.g., CEQA Guidance at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, pp. 66, 99-101.

pollutants and local health impacts, departs from the Air District's Guidance and approved methodology for assessing criteria pollutants. A close reading of the administrative record that gave rise to this issue demonstrates that the Court's holding is based on a misunderstanding of the distinction between toxic air contaminants (for which a local health risk assessment is feasible and routinely performed) and criteria air pollutants (for which a local health risk assessment is not feasible and would result in speculative results).[6] The Air District has a direct interest in ensuring the lawfulness and consistent application of its CEQA Guidance, and will explain how the Court of Appeal departed from the Air District's long-standing CEQA Guidance in addressing criteria pollutants and toxic air contaminants in this amicus brief.

### 2. How the Proposed Amicus Curiae Brief Will Assist the Court

As counsel for the proposed amicus curiae, we have reviewed the briefs filed in this action. In addition to serving as a "commentary agency" for CEQA purposes over the Friant Ranch project, the Air District has a strong interest in assuring that CEQA is used for its intended purpose, and believes that this Court would benefit from additional briefing explaining the distinction between criteria pollutants and toxic air contaminants and the different methodologies employed by local air pollution control agencies such as the Air District to analyze these two categories of air pollutants under CEQA. The Air District will also explain how the Court of Appeal's opinion is based upon a fundamental misunderstanding of these two different approaches by requiring the County of Fresno to correlate the project's *criteria* pollution emissions with *local* health impacts. In doing

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[6] CEQA does not require speculation. *See, e.g.*, *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.*, 6 Cal. 4th 1112, 1137 (1993) (upholding EIR that failed to evaluate cumulative toxic air emission increases given absence of any acceptable means for doing so).

so, the Air District will provide helpful analysis to support its position that at least insofar as criteria pollutants are concerned, CEQA does not require an EIR to correlate a project's air quality emissions to specific health impacts, because such an analysis is not reasonably feasible.

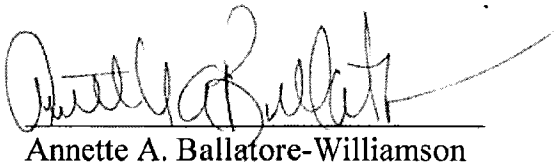
**Rule 8.520 Disclosure**

Pursuant to Cal. R. 8.520(f)(4), neither the Plaintiffs nor the Defendant or Real Party In Interest or their respective counsel authored this brief in whole or in part. Neither the Plaintiffs nor the Defendant or Real Party in Interest or their respective counsel made any monetary contribution towards or in support of the preparation of this brief.

**CONCLUSION**

On behalf of the San Joaquin Valley Unified Air Pollution Control District, we respectfully request that this Court accept the filing of the attached brief.

Dated: April 2, 2015



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SAN JOAQUIN VALLEY UNIFIED
AIR POLLUTION CONTROL
DISTRICT

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# AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO AND REAL PARTY IN INTEREST AND RESPONDENT, FRIANT RANCH, L.P.

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## I. INTRODUCTION.

The San Joaquin Valley Unified Air Pollution Control District ("Air District") respectfully submits that the Court of Appeal erred when it held that the air quality analysis contained in the Environmental Impact Report ("EIR") for the Friant Ranch development project was inadequate under the California Environmental Quality Act ("CEQA") because it did not include an analysis of the correlation between the project's criteria air pollutants and the potential adverse human health impacts. A close reading of the portion of the administrative record that gave rise to this issue demonstrates that the Court's holding is based on a misunderstanding of the distinction between toxic air contaminants and criteria air pollutants.

Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as birth defects. There are currently 189 toxic air contaminants (hereinafter referred to as "TACs") regulated by the United States Environmental Protection Agency ("EPA") and the states pursuant to the Clean Air Act. 42 U.S.C. § 7412. Common TACs include benzene, perchloroethylene and asbestos. *Id.* at 7412(b).

In contrast, there are only six (6) criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead. Although criteria air pollutants can also be harmful to human health,

they are distinguishable from TACs and are regulated separately. For instance, while criteria pollutants are regulated by numerous sections throughout Title I of the Clean Air Act, the regulation of TACs occurs solely under section 112 of the Act. *Compare* 42 U.S.C. §§ 7407 – 7411 & 7501 – 7515 *with* 42 U.S.C. § 7411.

The most relevant difference between criteria pollutants and TACs for purposes of this case is the manner in which human health impacts are accounted for. While it is common practice to analyze the correlation between an individual facility's TAC emissions and the expected localized human health impacts, such is not the case for criteria pollutants. Instead, the human health impacts associated with criteria air pollutants are analyzed and taken into consideration when EPA sets the national ambient air quality standard ("NAAQS") for each criteria pollutant. 42 U.S.C. § 7409(b)(1). The health impact of a particular criteria pollutant is analyzed on a regional and not a facility level based on how close the area is to complying with (attaining) the NAAQS. Accordingly, while the type of individual facility / health impact analysis that the Court of Appeal has required is a customary practice for TACs, it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task.

It is clear from a reading of both the administrative record and the Court of Appeal's decision that the Court did not have the expertise to fully

appreciate the difference between TACs and criteria air pollutants. As a result, the Court has ordered the County of Fresno to conduct an analysis that is not practicable and not likely yield valid information. The Air District respectfully requests that this portion of the Court of Appeal's decision be reversed.

## II. THE COURT OF APPEAL ERRED IN FINDING THE FRIANT RANCH EIR INADEQUATE FOR FAILING TO ANALYZE THE SPECIFIC HUMAN HEALTH IMPACTS ASSOCIATED CRITERIA AIR POLLUTANTS.

Although the Air District does not take lightly the amount of air emissions at issue in this case, it submits that the Court of Appeal got it wrong when it required Fresno County to revise the Friant Ranch EIR to include an analysis correlating the criteria air pollutant emissions associated with the project with specific, localized health-impacts. The type of analysis the Court of Appeal has required will not yield reliable information because currently available modeling tools are not well suited for this task. Further, in reviewing this issue de novo, the Court of Appeal failed to appreciate that it lacked the scientific expertise to appreciate the significant differences between a health risk assessment commonly performed for toxic air contaminants and a similar type of analysis it felt should have been conducted for criteria air pollutants.

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### A. Currently Available Modeling Tools are not Equipped to Provide a Meaningful Analysis of the Correlation between an Individual Development Project's Air Emissions and Specific Human Health Impacts.

In order to appreciate the problematic nature of the Court of Appeals' decision requiring a health risk type analysis for criteria air pollutants, it is important to understand how the relevant criteria pollutants (ozone and particulate matter) are formed, dispersed and regulated.

Ground level ozone (smog) is not directly emitted into the air, but is formed when precursor pollutants such as oxides of nitrogen (NOx) and volatile organic compounds (VOCs) are emitted into the atmosphere and undergo complex chemical reactions in the process of sunlight.[1] Once formed, ozone can be transported long distances by wind.[2] Because of the complexity of ozone formation, a specific tonnage amount of NOx or VOCs emitted in a particular area does not equate to a particular concentration of ozone in that area. In fact, even rural areas that have relatively low tonnages of emissions of NOx or VOCs can have high levels of ozone concentration simply due to wind transport.[3] Conversely, the San Francisco Bay Area has six times more NOx and VOC emissions per square mile than the San Joaquin Valley, but experiences lower

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[1] *See* United States Environmental Protection Agency, *Ground-level Ozone: Basic Information*, available at: http://www.epa.gov/airquality/ozonepollution/basic.html (visited March 10, 2015).
[2] *Id.*
[3] *Id.*

concentrations of ozone (and better air quality) simply because sea breezes disperse the emissions.[4]

Particulate matter ("PM") can be divided into two categories: directly emitted PM and secondary PM.[5] While directly emitted PM can have a localized impact, the tonnage emitted does not always equate to the local PM concentration because it can be transported long distances by wind.[6] Secondary PM, like ozone, is formed via complex chemical reactions in the atmosphere between precursor chemicals such as sulfur dioxides (SOx) and NOx.[7] Because of the complexity of secondary PM formation, the tonnage of PM-forming precursor emissions in an area does not necessarily result in an equivalent concentration of secondary PM in that area.

The disconnect between the *tonnage* of precursor pollutants (NOx, SOx and VOCs) and the *concentration* of ozone or PM formed is important because it is not necessarily the tonnage of precursor pollutants that causes human health effects, but the concentration of resulting ozone or PM. Indeed, the national ambient air quality standards ("NAAQS"), which are statutorily required to be set by the United States Environmental Protection

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[4] *San Joaquin Valley Air Pollution Control District 2007 Ozone Plan*, Executive Summary p. ES-6, available at: http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/03%20Executive%20Summary.pdf (visited March 10, 2015).
[5] United States Environmental Protection Agency, *Particulate Matter: Basic Information*, available at: http://www.epa.gov/airquality/particlepollution/basic.html (visited March 10, 2015).
[6] *Id.*
[7] *Id.*

Agency ("EPA") at levels that are "requisite to protect the public health," 42 U.S.C. § 7409(b)(1), are established as concentrations of ozone or particulate matter and not as tonnages of their precursor pollutants.[8]

Attainment of a particular NAAQS occurs when the concentration of the relevant pollutant remains below a set threshold on a consistent basis throughout a particular region. For example, the San Joaquin Valley attained the 1-hour ozone NAAQS when ozone concentrations remained at or below 0.124 parts per million Valley-wide on 3 or fewer days over a 3-year period.[9] Because the NAAQS are focused on achieving a particular concentration of pollution region-wide, the Air District's tools and plans for attaining the NAAQS are regional in nature.

For instance, the computer models used to simulate and predict an attainment date for the ozone or particulate matter NAAQS in the San Joaquin Valley are based on regional inputs, such as regional inventories of precursor pollutants (NOx, SOx and VOCs) and the atmospheric chemistry and meteorology of the Valley.[10] At a very basic level, the models simulate future ozone or PM levels based on predicted changes in precursor

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[8] See, e.g., United States Environmental Protection Agency, *Table of National Ambient Air Quality Standards*, available at: http://www.epa.gov/air/criteria.html#3 (visited March 10, 2015).

[9] *San Joaquin Valley Unified Air Pollution Control District 2013 Plan for the Revoked 1-Hour Ozone Standard*, Ch. 2 p. 2-16, available at: http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan2013/02Chapter2ScienceTrendsModeling.pdf (visited March 10, 2015).

[10] *Id.* at Ch. 2 p. 2-19 (visited March 12, 2015); *San Joaquin Valley Unified Air Pollution Control District 2008 PM2.5 Plan*, Appendix F, pp. F-2 – F-5, available at: http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Final_Adopted_PM2.5/20%20Appendix%20F.pdf
(visited March 19, 2015).

emissions Valley wide.[11] Because the NAAQS are set levels necessary to protect human health, the closer a region is to attaining a particular NAAQS, the lower the human health impact is from that pollutant.

The goal of these modeling exercises is not to determine whether the emissions generated by a particular factory or development project will affect the date that the Valley attains the NAAQS. Rather, the Air District's modeling and planning strategy is regional in nature and based on the extent to which *all* of the emission-generating sources in the Valley (current and future) must be controlled in order to reach attainment.[12]

Accordingly, the Air District has based its thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the Valley can accommodate without affecting the attainment date for the NAAQS.[13] The Air District has tied its CEQA significance thresholds to the level at which stationary pollution sources permitted by the Air District must "offset" their emissions.[14] This "offset"

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[11] *Id.*

[12] Although the Air District does have a dispersion modeling tool used during its air permitting process that is used to predict whether a particular project's directly emitted PM will either cause an exceedance of the PM NAAQS or contribute to an existing exceedance, this model bases the prediction on a worst case scenario of emissions and meteorology and has no provision for predicting any associated human health impacts. Further, this analysis is only performed for stationary sources (factories, oil refineries, etc.) that are required to obtain a New Source Review permit from the Air District and not for development projects such as Friant Ranch over which the Air District has no preconstruction permitting authority. *See* San Joaquin Valley Unified Air Pollution Control District Rule 2201 §§ 2.0; 3.3.9; 4.14.1, available at: http://www.valleyair.org/rules/currntrules/Rule22010411.pdf (visited March 19, 2015).

[13] *San Joaquin Valley Unified Air Pollution Control District Guide to Assessing and Mitigating Air Quality Impacts*, (March 19, 2015) p. 22, available at: http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Jan%202002%20Rev.pdf (visited March 30, 2015).

[14] *Id.* at pp. 22, 25.

level allows for growth while keeping the cumulative effects of all new sources at a level that will not impede attainment of the NAAQS.[15] In the Valley, these thresholds are 15 tons per year of PM, and 10 tons of NOx or VOC per year. *Sierra Club*, *supra*, 172 Cal.Rptr.3d at 303; AR 4554. Thus, the CEQA air quality analysis for criteria pollutants is not really a localized, project-level impact analysis but one of regional, "cumulative impacts."

Accordingly, the significance thresholds applied in the Friant Ranch EIR (15 tons per year of PM and 10 tons of NOx or VOCs) are not intended to be indicative of any localized human health impact that the project may have. While the health effects of air pollution are of primary concern to the Air District (indeed, the NAAQS are established to protect human health), the Air District is simply not equipped to analyze whether and to what extent the criteria pollutant emissions of an individual CEQA project directly impact human health in a particular area. This is true even for projects with relatively high levels of emissions of criteria pollutant precursor emissions.

For instance, according to the EIR, the Friant Ranch project is estimated to emit 109.52 tons per year of ROG (VOC), 102.19 tons per year of NOx, and 117.38 tons per year of PM. Although these levels well

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[15] [15] *San Joaquin Valley Unified Air Pollution Control District Environmental Review Guidelines* (Aug. 2000) p. 4-11, available at: http://www.valleyair.org/transportation/CEQA%20Rules/ERG%20Adopted%20_August%202000_.pdf (visited March 12, 2015).

exceed the Air District's CEQA significance thresholds, this does not mean that one can easily determine the concentration of ozone or PM that will be created at or near the Friant Ranch site on a particular day or month of the year, or what specific health impacts will occur. Meteorology, the presence of sunlight, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone or PM. This is especially true for a project like Friant Ranch where most of the criteria pollutant emissions derive not from a single "point source," but from area wide sources (consumer products, paint, etc.) or mobile sources (cars and trucks) driving to, from and around the site.

In addition, it would be extremely difficult to model the impact on NAAQS attainment that the emissions from the Friant Ranch project may have. As discussed above, the currently available modeling tools are equipped to model the impact of *all* emission sources in the Valley on attainment. According to the most recent EPA-approved emission inventory, the NOx inventory for the Valley is for the year 2014 is 458.2 tons per day, or 167,243 tons per year and the VOC (or ROG) inventory is 361.7 tons per day, or 132,020.5 tons per year.[16] Running the photochemical grid model used for predicting ozone attainment with the

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[16] *San Joaquin Valley Unified Air Pollution Control District 2007 Ozone Plan*, Appendix B pp. B-6, B-9,
available at:
http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/19%20Appendix%20B%20April%202007.pdf (visited March 12, 2015).

emissions solely from the Friant Ranch project (which equate to less than one-tenth of one percent of the total NOx and VOC in the Valley) is not likely to yield valid information given the relative scale involved.

Finally, even once a model is developed to accurately ascertain local increases in concentrations of photochemical pollutants like ozone and some particulates, it remains impossible, using today's models, to correlate that increase in concentration to a specific health impact. The reason is the same: such models are designed to determine regional, population-wide health impacts, and simply are not accurate when applied at the local level.

For these reasons, it is not the norm for CEQA practitioners, including the Air District, to conduct an analysis of the localized health impacts associated with a project's criteria air pollutant emissions as part of the EIR process. When the accepted scientific method precludes a certain type of analysis, "the court cannot impose a legal standard to the contrary." *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 717 n. 8. However, that is exactly what the Court of Appeal has done in this case. Its decision upends the way CEQA air quality analysis of criteria pollutants occurs and should be reversed.

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### B. The Court of Appeal Improperly Extrapolated a Request for a Health Risk Assessment for Toxic Air Contaminants into a Requirement that the EIR contain an Analysis of Localized Health Impacts Associated with Criteria Air Pollutants.

The Court of Appeal's error in requiring the new health impact analysis for criteria air pollutants clearly stems from a misunderstanding of terms of art commonly used in the air pollution field. More specifically, the Court of Appeal (and Appellants Sierra Club et al.) appear to have confused the health risk analysis ("HRA") performed to determine the health impacts associated with a project's toxic air contaminants ("TACs"), with an analysis correlating a project's criteria air pollutants (ozone, PM and the like) with specific localized health impacts.

The first type of analysis, the HRA, is commonly performed during the Air District's stationary source permitting process for projects that emit TACs and is, thus, incorporated into the CEQA review process. An HRA is a comprehensive analysis to evaluate and predict the dispersion of TACs emitted by a project and the potential for exposure of human populations. It also assesses and quantifies both the individual and population-wide health risks associated with those levels of exposure. There is no similar analysis conducted for criteria air pollutants. Thus, the second type of analysis (required by the Court of Appeal), is not currently part of the Air District's process because, as outlined above, the health risks associated

with exposure to criteria pollutants are evaluated on a regional level based on the region's attainment of the NAAQS.

The root of this confusion between the types of analyses conducted for TACs versus criteria air pollutants appears to stem from a comment that was presented to Fresno County by the City of Fresno during the administrative process.

In its comments on the draft EIR, the City of Fresno (the only party to raise this issue) stated:

> [t]he EIR must disclose the human health related effects of the Project's air pollution impacts. (CEQA Guidelines section 15126.2(a).) The EIR fails completely in this area. The EIR should be revised to disclose and determine the significance of TAC impacts, and of human health risks due to exposure to Project-related air emissions.

(AR 4602.)

In determining that the issue regarding the correlation between the Friant Ranch project's criteria air pollutants and adverse health impacts was adequately exhausted at the administrative level, the Court of Appeal improperly read the first two sentences of the City of Fresno's comment in isolation rather than in the context of the entire comment. *See Sierra Club v. County of Fresno* (2014) 172 Cal.Rptr.3d 271, 306. Although the comment first speaks generally in terms of "human health related effects" and "air pollution," it requests only that the EIR be revised to disclose "the significance of TACs" and the "human health risks due to exposure."

The language of this request in the third sentence of the comment is significant because, to an air pollution practitioner, the language would only have indicated only that a HRA for TACs was requested, and not a separate analysis of the health impacts associated with the project's criteria air pollutants. Fresno County clearly read the comment as a request to perform an HRA for TACs and limited its response accordingly. (AR 4602.)[17] The Air District submits that it would have read the City's comment in the same manner as the County because the City's use of the terms "human health risks" and "TACs" signal that an HRA for TACs is being requested. Indeed, the Air District was also concerned that an HRA be conducted, but understood that it was not possible to conduct such an analysis until the project entered the phase where detailed site specific information, such as the types of emission sources and the proximity of the sources to sensitive receptors became available. (AR 4553.)[18] The City of Fresno was apparently satisfied with the County's discussion of human health risks, as it did not raise the issue again when it commented on the final EIR. (AR 8944 – 8960.)

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[17] Appellants do not challenge the manner in which the County addressed TACs in the EIR. (Appellants' Answer Brief p. 28 fn. 7.)

[18] Appellants rely on the testimony of Air District employee, Dan Barber, as support for their position that the County should have conducted an analysis correlating the project's criteria air pollutant emissions with localized health impacts. (Appellants Answer Brief pp. 10-11; 28.) However, Mr. Barber's testimony simply reinforces the Air District's concern that a risk assessment (HRA) be conducted once the actual details of the project become available. (AR 8863.) As to criteria air pollutants, Mr. Barber's comments are aimed at the Air District's concern about the amount of emissions and the fact that the emissions will make it "more difficult for Fresno County and the Valley to reach attainment which means that the health of Valley residents maybe [sic] adversely impacted." Mr. Barber says nothing about conducting a separate analysis of the localized health impacts the project's emissions may have.

The Court of Appeal's holding, which incorrectly extrapolates a request for an HRA for TACs into a new analysis of the localized health impacts of the project's criteria air pollutants, highlights two additional errors in the Court's decision.

First, the Court of Appeal's holding illustrates why the Court should have applied the deferential substantial evidence standard of review to the issue of whether the EIR's air quality analysis was sufficient. The regulation of air pollution is a technical and complex field and the Court of Appeal lacked the expertise to fully appreciate the difference between TACs and criteria air pollutants and tools available for analyzing each type of pollutant.

Second, it illustrates that the Court likely got it wrong when it held that the issue regarding the criteria pollutant / localized health impact analysis was properly exhausted during the administrative process. In order to preserve an issue for the court, '[t]he "exact issue" must have been presented to the administrative agency....' [Citation.] *Citizens for Responsible Equitable Environmental Development v. City of San Diego*, (2011) 196 Cal.App.4th 515, 527 129 Cal.Rptr.3d 512, 521; *Sierra Club v. City of Orange* (2008) 163 Cal.App.4th 523, 535, 78 Cal.Rptr.3d 1, 13. "'[T]he objections must be sufficiently specific so that the agency has the

opportunity to evaluate and respond to them.' [Citation.]" *Sierra Club v. City of Orange*,163 Cal.App.4th at 536.[19]

As discussed above, the City's comment, while specific enough to request a commonly performed HRA for TACs, provided the County with no notice that it should perform a new type of analysis correlating criteria pollutant tonnages to specific human health effects. Although the parties have not directly addressed the issue of failure to exhaust administrative remedies in their briefs, the Air District submits that the Court should consider how it affects the issues briefed by the parties since "[e]xhaustion of administrative remedies is a jurisdictional prerequisite to maintenance of a CEQA action." *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1199, 22 Cal.Rptr.3d 203.

## III. CONCLUSION

For all of the foregoing reasons, the Air District respectfully requests that the portion of the Court of Appeal's decision requiring an analysis correlating the localized human health impacts associated with an individual project's criteria air pollutant emissions be reversed.

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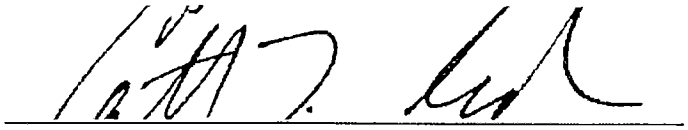
[19] *Sierra Club v. City of Orange*, is illustrative here. In that case, the plaintiffs challenged an EIR approved for a large planned community on the basis that the EIR improperly broke up the various environmental impacts by separate project components or "piecemealed" the analysis in violation of CEQA. In evaluating the defense that the plaintiffs had failed to adequately raise the issue at the administrative level, the Court held that comments such as *"the use of a single document for both a project-level and a program-level EIR [is] 'confusing',"* and *"[t]he lead agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project,"* were too vague to fairly raise the argument of piecemealing before the agency. *Sierra Club v. City of Orange*, 163 Cal.App.4th at 537.

correlating the localized human health impacts associated with an individual project's criteria air pollutant emissions be reversed.

Respectfully submitted,

Dated: April 2, 2015



Catherine T. Redmond
Attorney for Proposed Amicus Curiae

SAN JOAQUIN VALLEY
UNIFIED
AIR POLLUTION CONTROL
DISTRICT

## CERTIFICATE OF WORD COUNT

Pursuant to Rule 8.204 of the California Rules of Court, I hereby certify that this document, based on the Word County feature of the Microsoft Word software program used to compose and print this document, contains, exclusive of caption, tables, certificate of word count, signature block and certificate of service, 3806 words.

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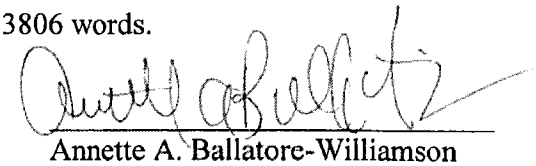

Annette A. Ballatore-Williamson
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*Sierra Club et al, v. County of Fresno, et al*
**Supreme Court of California Case No.: S219783**
Fifth District Court of Appeal Case No.: F066798
Fresno County Superior Court Case No.: 11CECG00726

## PROOF OF SERVICE

I am over the age of 18 years and not a p[arty to the above-captioned action; that my business address is San Joaquin Valley Unified Air Pollution Control District located at 1990 E. Gettysburg Avenue, Fresno, California 93726.

On April 2, 2015, I served the document described below:

**APPLICATION FOR LEAVE TO FILE AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO**

On all parties to this action at the following addresses and in the following manner:

**PLEASE SEE ATTACHED SERVICE LIST**

(XX) **(BY MAIL)** I caused a true copy of each document(s) to be laced in a sealed envelope with first-class postage affixed and placed the envelope for collection. Mail is collected daily at my office and placed in a United State Postal Service collection box for pick-up and delivery that same day.

( ) **(BY ELECTRONIC MAIL)** I caused a true and correct scanned image (.PDF file) copy to be transmitted via electronic mail transfer system in place at the San Joaquin Valley Unified Air Pollution Control District ("District"), originating from the undersigned at 1990 E. Gettysburg Avenue, Fresno, CA, to the address(es) indicated below.

( ) **(BY OVERNIGHT MAIL)** I caused a true and correct copy to be delivered via Federal Express to the following person(s) or their representative at the address(es) listed below.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that I executed this document on April 2, 2015, at Fresno, California.

Esthela Soto

## SERVICE LIST

***Sierra Club et al, v. County of Fresno, et al***
**Supreme Court of California Case No.: S219783**
Fifth District Court of Appeal Case No.: F066798
Fresno County Superior Court Case No.: 11CECG00726

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