Air Quality Assessment
Oyster Cove Project
City of Petaluma, California

Prepared by:

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LIST OF ABBREVIATED TERMS

AQMP	air quality management plan
AB	Assembly Bill
ADT	average daily traffic
BAAQMD	Bay Area Air Quality Management District
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAAQS	California Ambient Air Quality Standards
CCAA	California Clean Air Act
CalEEMod	California Emissions Estimator Model
CEQA	California Environmental Quality Act
CO	carbon monoxide
cy	cubic yards
DPM	diesel particulate matter
EPA	Environmental Protection Agency
FCAA	Federal Clean Air Act
H_2S	hydrogen sulfide
Pb	Lead
LST	local significance threshold
$\mu g/m^3$	micrograms per cubic meter
mg/m^3	milligrams per cubic meter
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
O_3	Ozone
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppm	parts per million
ROG	reactive organic gases
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SRA	source receptor area
SF	square foot
SO_{4-2}	Sulfates
SO_2	sulfur dioxide
TAC	toxic air contaminant
C_2H_3Cl	vinyl chloride
VOC	volatile organic compound

1 INTRODUCTION

This report describes the air quality conditions in the Project area. The current condition and air quality was used as the baseline against which to compare potential impacts of the Project. The purpose of this Air Quality Assessment is to evaluate potential short- and long-term noise impacts resulting from implementation of the proposed Oyster Cove Project (proposed Project) in the City of Petaluma (City).

1.1 PROJECT LOCATION

The proposed Project is located at 100 and 310 East D Street in Petaluma. Figure 1: Regional Map and Figure 2: Project Vicinity Map depict the Project site in a regional and local context. The Project site is located in an urban area with a mix of surrounding uses including commercial, office, and industrial uses. The Project site is located in downtown Petaluma near Petaluma's Historic Commercial District, the Sonoma Marin Rapid Transit ("SMART") Petaluma Downtown Station, and immediately adjacent to the Steamer Landing/River Park. The site is bounded by East D Street to the west, the Petaluma River Park to the east, a T5 zoned unused rail spur to the north, the Petaluma River to the south, and by Civic Space/Trail owned by the City that surrounds the McNear Canal.

The site is partially developed with three one-story industrial buildings. The existing one-story buildings are located on the southern half of the Project site. A majority of the Project site remains undeveloped and is vegetated with pavement and gravel surrounding the existing buildings.

1.2 PROJECT DESCRIPTION

The proposed Project would demolish two of the existing industrial buildings, located in the southeastern portion of the Project site, and would renovate and adaptively reuse the existing building located in the southwestern corner of the Project site. The building-to-remain is approximately 9,000 square feet (sf) and is proposed to be a combination of commercial and boat storage. Construction of the Project is expected to commence in early 2023 and last for approximately two years. The proposed development would result in 122 three-story townhomes and 10 live/work units varying in size from approximately 1,350 sf to 2,130 sf. A new public pedestrian and bike path connecting East D Street to the Petaluma River Park is proposed. Proposed site work also includes site lighting and utility infrastructure as required to support Project operations. Figure 3: Site Plan, shows the proposed layout of the Project site.

Primary access to the Project site is from East D Street, directly across from its intersection with Copeland Street. The Project proposes a reconfiguration of current circulation patterns that would relocate vehicular traffic to the interior of the site, leaving the entire waterfront to be enjoyed by pedestrians and cyclists.

The Project site is designated as Mixed Use (MU) and River Dependent Industrial (RDI). MU allows for a combination of uses, including retail, residential, service commercial, and/or office. RDI allows for heavy industrial manufacturing, raw material processing, and related uses that require river access as an integral part of daily operations. The Project site is zoned as Urban Center (T-5) and River Dependent Industrial District (D3).

Source: USGS, 2021

Figure 1: Regional Map

Oyster Cove Project

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Source: Nearmap, 2022

Figure 2: Project Vicinity Map

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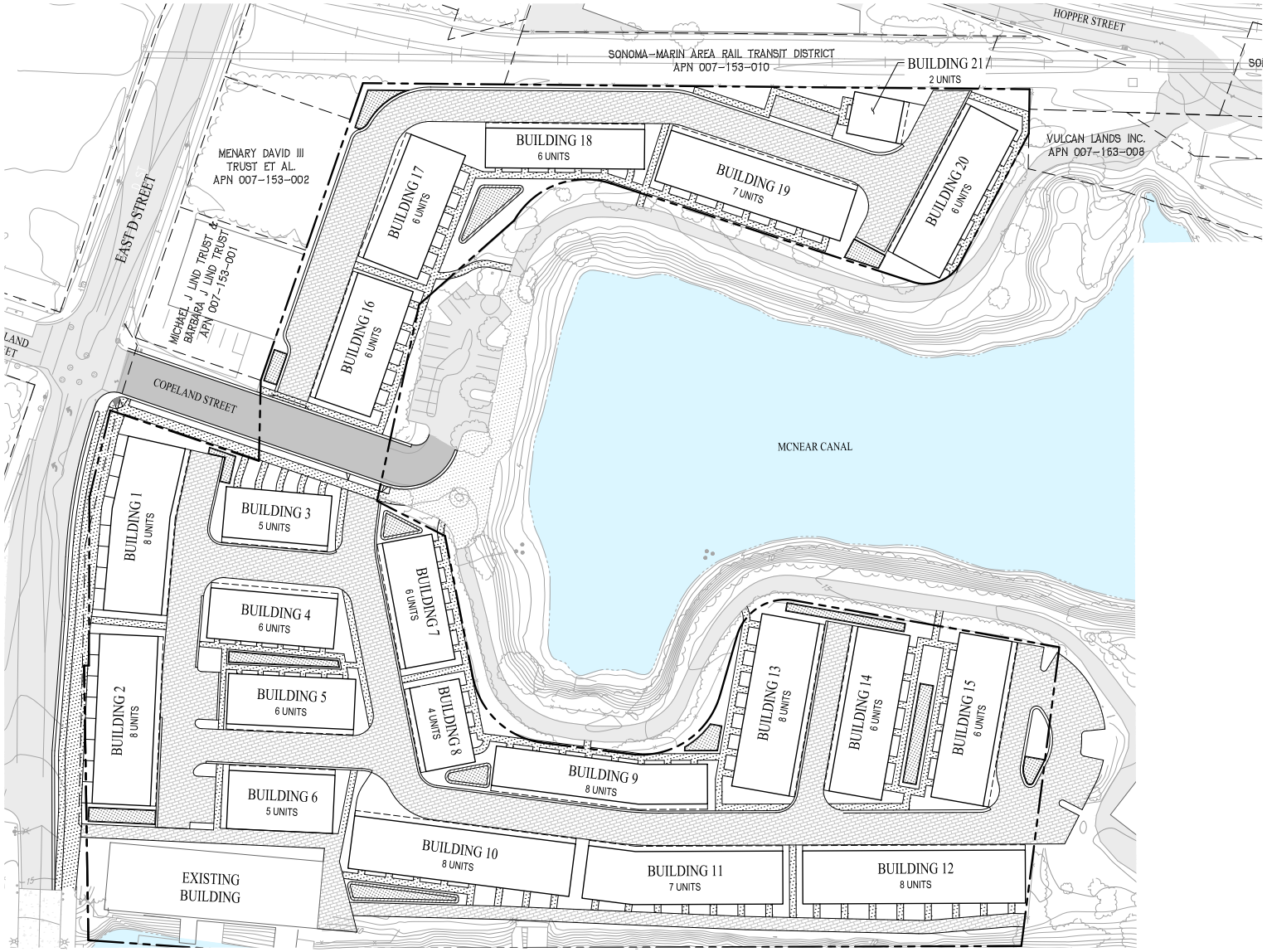

Source: CBG Civil Engineers, 2022

Figure 3: Site Plan

Oyster Cove Project

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2 ENVIRONMENTAL SETTING

2.1 CLIMATE AND METEOROLOGY

The California Air Resources Board (CARB) divides the State into 15 air basins that share similar meteorological and topographical features. The Project is located within the San Francisco Bay Area Air Basin (Basin). This Basin comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, the southern portion of Sonoma County, and the southwestern portion of Solano County. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions. These factors along with applicable regulations are discussed below. The Bay Area Air Quality Management District (BAAQMD) is responsible for local control and monitoring of criteria air pollutants throughout the Basin.

Climate, or the average weather condition, affects air quality in several ways. Wind patterns can remove or add air pollutants emitted by stationary or mobile sources. Inversion, a condition where warm air traps cooler air underneath it, can hold pollutants near the ground by limiting upward mixing (dilution). Topography also affects the local climate, as valleys often trap emissions by limiting lateral dispersal.

The inversions typical of winter, called radiation inversions, are formed as heat quickly radiates from the earth's surface after sunset, causing the air in contact with it to rapidly cool. Radiation inversions are strongest on clear, low-wind, cold winter nights, allowing the build-up of such pollutants as carbon monoxide and particulate matter. When wind speeds are low, there is little mechanical turbulence to mix the air, resulting in a layer of warm air over a layer of cooler air next to the ground. During radiation inversions downwind transport is slow, the mixing depths are shallow, and turbulence is minimal, all factors which contribute to ozone formation.

The frequency of hot, sunny days during the summer months in the Basin is another important factor that affects air pollution potential. It is at the higher temperatures that ozone is formed. In the presence of ultraviolet sunlight and warm temperatures, reactive organic gases and oxides of nitrogen react to form secondary photochemical pollutants, including ozone.

The climate is dominated by the location and strength of a semi-permanent, subtropical high-pressure cell. In the summer, the Pacific cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below the surface because of the northwesterly flow produces a band of cold water off the coast which results in condensation and the presence of fog and stratus clouds along the coast. In the winter, the high-pressure cell weakens and shifts southward, resulting in increased wind flow offshore, the absence of upwelling, and the occurrence of storms.

The Basin is characterized by moderately wet winters (November through March) and dry summers. The rainfall in the mountains reaches 40 inches while the valley sees less than 16 inches. Generally, coastal temperatures can be 35 degrees Fahrenheit cooler than temperatures 15 to 20 miles inland. At night, this contrast usually decreases to less than 10 degrees Fahrenheit. In the winter, the relationship of minimum and maximum temperatures is reversed.

The Project site is located in the City of Petaluma and Sonoma County, in the North Bay region of the San Francisco Bay Area. The City has a generally mild climate, with average temperatures in the high 70's Fahrenheit in the summer and high 50's Fahrenheit in the winter. The annual rainfall is approximately 30 inches in the City, primarily between October and May. The regulatory section below discusses the various buffer zones around sources of air pollution sufficient to avoid adverse health and nuisance impacts on nearby receptors.

2.2 AIR POLLUTANTS OF PRIMARY CONCERN

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state laws. These regulated air pollutants are known as "criteria air pollutants" and are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxide (NO_X), sulfur dioxide (SO_2), coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead are primary air pollutants. Of these, CO, NO_X, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. ROG and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. For example, the criteria pollutant ozone (O_3) is formed by a chemical reaction between ROG and NO_X in the presence of sunlight. O_3 and nitrogen dioxide (NO_2) are the principal secondary pollutants. Sources and health effects commonly associated with criteria pollutants are summarized in Table 1: Air Contaminants and Associated Public Health Concerns.

Ozone, or smog, is not emitted directly into the environment, but is formed in the atmosphere by complex chemical reactions between ROG and NO_X in the presence of sunlight. Ozone formation is greatest on warm, windless, sunny days. The main sources of NO_X and ROG, often referred to as ozone precursors, are combustion processes (including motor vehicle engines) the evaporation of solvents, paints, and fuels, and biogenic sources. Automobiles are the single largest source of ozone precursors in the Basin. Tailpipe emissions of ROG are highest during cold starts, hard acceleration, stop-and-go conditions, and slow speeds. They decline as speeds increase up to about 50 miles per hour (mph), then increase again at high speeds and high engine loads. ROG emissions associated with evaporation of unburned fuel depend on vehicle and ambient temperature cycles. Nitrogen oxide emissions exhibit a different curve; emissions decrease as the vehicle approaches 30 mph and then begin to increase with increasing speeds.

Ozone levels usually build up during the day and peak in the afternoon hours. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. Ozone can also damage plants and trees, and materials such as rubber and fabrics.

Table 1: Air Contaminants and Associated Public Health Concerns

Pollutant	Major Man-Made Sources	Human Health Effects
Particulate Matter (PM_{10} and $PM_{2.5}$)	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; asthma; chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility.
Ozone (O_3)	Formed by a chemical reaction between reactive organic gases/volatile organic compounds (ROG or VOC)[1] and nitrogen oxides (NO_X) in the presence of sunlight. Motor vehicle exhaust industrial emissions, gasoline storage and transport, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
Sulfur Dioxide (SO_2)	A colorless gas formed when fuel containing sulfur is burned and when gasoline is extracted from oil. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone. Contributes to global warming and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Lead (Pb)	Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Due to the phase out of leaded gasoline, metals processing is the major source of lead emissions to the air today. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.	Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children, resulting in learning deficits and lowered IQ.

[1] Volatile Organic Compounds (VOCs or Reactive Organic Gases [ROG]) are hydrocarbons/organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases including ROGs and VOCs. Both ROGs and VOCs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. The major sources of hydrocarbons are combustion engine exhaust, oil refineries, and oil-fueled power plants; other common sources are petroleum fuels, solvents, dry cleaning solutions, and paint (via evaporation).

Source: California Air Pollution Control Officers Association (CAPCOA), *Health Effects*, capcoa.org/health-effects/, accessed March 2, 2021.

Toxic Air Contaminants

Toxic air contaminants (TACs) are airborne substances that can cause short-term (acute) or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes more than 200 compounds, including particulate emissions from diesel-fueled engines.

CARB identified diesel particulate matter (DPM) as a toxic air contaminant. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine. Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

Table 2: Ambient Air Quality Data

Pollutant	Sebastopol - 103 Morris Street[1]		
	2018	2019	2020
Ozone (O_3)			
1-hour Maximum Concentration (ppm)	0.071	0.070	0.069
8-hour Maximum Concentration (ppm)	0.053	0.059	0.058
Number of Days Standard Exceeded			
CAAQS 1-hour (>0.09 ppm)	0	0	0
NAAQS 8-hour (>0.070 ppm)	0	0	0
Carbon Monoxide (CO)			
1-hour Maximum Concentration (ppm)	1.394	1.447	1.71
Number of Days Standard Exceeded			
NAAQS 1-hour (>35 ppm)	0	0	0
CAAQS 1 hour (>20 ppm)	0	0	0
Nitrogen Dioxide (NO_2)			
1-hour Maximum Concentration (ppm)	0.0651	0.0319	0.0363
Number of Days Standard Exceeded			
NAAQS 1-hour (>0.100 ppm)	0	0	0
CAAQS 1-hour (>0.18 ppm)	0	0	0
Particulate Matter Less Than 2.5 Microns ($PM_{2.5}$)			
National 24-hour Maximum Concentration	175.3	28.0	124.3
State 24-hour Maximum Concentration	158.2	28.0	124.3
Number of Days Standard Exceeded			
NAAQS 24-hour (>150 µg/m^3)	13	0	7
CAAQS 24-hour (>50 µg/m^3)	8	8	8

Pollutant	Sebastopol - 103 Morris Street[1]		
	2018	2019	2020
Particulate Matter Less Than 10 Microns (PM_{10})			
National 24-hour Maximum Concentration	216.4	48.8	140.6
State 24-hour Maximum Concentration	234.3	51.7	146.2
Number of Days Standard Exceeded			
NAAQS 24-hour (>150 µg/m^3)	2	0	0
CAAQS 24-hour (>50 µg/m^3)	13	1	8

NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; ppm = parts per million; µg/m^3 = micrograms per cubic meter; NM = not measured

[1] Measurements taken at the Sebastopol Monitoring Station located at 103 Morris Street Sebastopol, California 95472 (CARB# 49891).

Source: All pollutant measurements are from the CARB Aerometric Data Analysis and Management system database (arb.ca.gov/adam) except for CO, which were retrieved from the CARB Air Quality and Meteorological Information System (https://www.arb.ca.gov/aqmis2/aqdselect.php, https://www.arb.ca.gov/qaweb/siteinfo.php).

2.3 SENSITIVE RECEPTORS

Sensitive populations are more susceptible to the effects of air pollution than the general population. Sensitive receptors in proximity to localized sources of toxics are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

The Project site is located in an urban area in City of Petaluma. The surrounding land uses are predominantly commercial and industrial, with some residences to the north and south. Additionally, a hotel is located to the northeast of the Project site. Table 3: Sensitive Receptors, lists the distances and locations of nearby sensitive receptors. Figure 4: Sensitive Receptor Locations shows location of the nearest sensitive receptors.

Table 3: Sensitive Receptors

Receptor Description	Distance and Direction from the Project Site
1. Multi-family residential community	220 feet south
2. Single-family residential community	410 feet north
3. Hampton Inn Petaluma	500 feet northeast
4. Single-family residential community	950 feet southeast
5. Single-family residential community	1,250 feet south
6. San Antonio High School	1,500 feet northeast
7. Petaluma Historical Library and Museum	1,520 feet southwest
8. Children's Corner Preschool	1,600 feet north

Source: Nearmap, 2022

Figure 4: Sensitive Receptor Locations

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3 REGULATORY SETTING

3.1 FEDERAL

Federal Clean Air Act

Air quality is federally protected by the Federal Clean Air Act (FCAA) and its amendments. Under the FCAA, the EPA developed the primary and secondary National Ambient Air Quality Standards (NAAQS) for the criteria air pollutants including ozone, NO_2, CO, SO_2, PM_{10}, $PM_{2.5}$, and lead. Depending on whether the standards are met or exceeded, the local air basin is classified as in "attainment" or "nonattainment." Some areas are unclassified, which means no monitoring data are available. Unclassified areas are considered to be in attainment. Proposed projects in or near nonattainment areas could be subject to more stringent air-permitting requirements. The FCAA requires that each state prepare a State Implementation Plan (SIP) to demonstrate how it will attain the NAAQS within the federally imposed deadlines.

The U.S. Environmental Protection Agency (EPA) has designated enforcement of air pollution control regulations to the individual states. Applicable federal standards are summarized in Table 4: State of California.

California Air Resources Board

CARB administers California's air quality policy. The California Ambient Air Quality Standards (CAAQS) were established in 1969 pursuant to the Mulford-Carrell Act. These standards, included with the NAAQS in Table 4, are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility reducing particulates, hydrogen sulfide, and sulfates. In general, the Bay Area experiences low concentrations of most pollutants when compared to federal standards, except for O_3 and PM, for which standards are exceeded periodically. With respect to federal standards, the Bay Area's attainment status for 8-hour ozone is classified as "marginal nonattainment" and "nonattainment" for $PM_{2.5}$. The region is also considered to be in nonattainment with the CAAQS for PM_{10} and $PM_{2.5}$. Area sources generate most of these airborne particulate emissions. The Basin is considered in attainment or unclassified with respect to the CO, NO_2 and SO_2 NAAQS and CAAQS.

The California Clean Air Act (CCAA), which was approved in 1988, requires that each local air district prepare and maintain an Air Quality Management Plan (AQMP) to achieve compliance with CAAQS. These AQMPs also serve as the basis for the preparation of the SIP for meeting federal clean air standards for the State of California. Like the EPA, CARB also designates areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events such as wildfires, volcanoes, etc. are not considered violations of a State standard, and are not used as a basis for designating areas as nonattainment. The applicable State standards are summarized in Table 4.

Table 4: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	State Standards[1]		Federal Standards[2]	
		Concentration	Attainment Status	Concentration[3]	Attainment Status
Ozone (O_3)	8 Hour	0.070 ppm (137 µg/m³)	N[9]	0.070 ppm	N[4]
	1 Hour	0.09 ppm (180 µg/m³)	N	NA	N/A[5]
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m³)	A	9 ppm (10 mg/m³)	A[6]
	1 Hour	20 ppm (23 mg/m³)	A	35 ppm (40 mg/m³)	A
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/m³)	A	0.100 ppm[11]	U
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)	-	0.053 ppm (100 µg/m³)	A
Sulfur Dioxide[12] (SO_2)	24 Hour	0.04 ppm (105 µg/m³)	A	0.14 ppm (365 µg/m³)	A
	1 Hour	0.25 ppm (655 µg/m³)	A	0.075 ppm (196 µg/m³)	A
	Annual Arithmetic Mean	NA	-	0.03 ppm (80 µg/m³)	A
Particulate Matter (PM_{10})	24-Hour	50 µg/m³	N	150 µg/m³	-U
	Annual Arithmetic Mean	20 µg/m³	N[7]	NA	-
Fine Particulate Matter ($PM_{2.5}$) [15]	24-Hour	NA	-	35 µg/m³	U/A
	Annual Arithmetic Mean	12 µg/m³	N[7]	12 µg/m³	N
Sulfates (SO_{4-2})	24 Hour	25 µg/m³	A	NA	-
Lead (Pb)[13, 14]	30-Day Average	1.5 µg/m³	-	NA	A
	Calendar Quarter	NA	-	1.5 µg/m³	A
	Rolling 3-Month Average	NA	-	0.15 µg/m³	-
Hydrogen Sulfide (H_2S)	1 Hour	0.03 ppm (42 µg/m³)	U	NA	-
Vinyl Chloride (C_2H_3Cl)	24 Hour	0.01 ppm (26 µg/m³)	-	NA	-
Visibility Reducing Particles[8]	8 Hour (10:00 to 18:00 PST)	-	U	-	-

A = attainment; N = nonattainment; U = unclassified; N/A = not applicable or no applicable standard; ppm = parts per million; µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter; – = not indicated or no information available.

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.
2. National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.070 ppm (70 ppb) or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m$_3$. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m³.
   Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.
3. National air quality standards are set by the EPA at levels determined to be protective of public health with an adequate margin of safety.

4. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. EPA will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.
5. The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005.
6. In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.
7 In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.
8 Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.
9. The 8-hour CA ozone standard was approved by the Air Resources Board on April 28, 2005 and became effective on May 17, 2006.
10. On January 9, 2013, EPA issued a final rule to determine that the Bay Area attains the 24-hour $PM_{2.5}$ national standard. This EPA rule suspends key SIP requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this EPA action, the Bay Area will continue to be designated as "nonattainment" for the national 24-hour $PM_{2.5}$ standard until such time as the Air District submits a "redesignation request" and a "maintenance plan" to EPA, and EPA approves the proposed redesignation.
11. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100ppm (effective January 22, 2010). The US Environmental Protection Agency (EPA) expects to make a designation for the Bay Area by the end of 2017.
12. On June 2, 2010, the U.S. EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS however must continue to be used until one year following U.S. EPA initial designations of the new 1-hour SO_2 NAAQS.
13. CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure below which there are no adverse health effects determined.
14. National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.
15. In December 2012, EPA strengthened the annual $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) from 15.0 to 12.0 micrograms per cubic meter ($\mu g/m^3$). In December 2014, EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

Source: Bay Area Air Quality Management District, *Air Quality Standards and Attainment Status*, 2017 http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status.

3.2 REGIONAL

Bay Area Air Quality Management District

The BAAQMD is the regional agency with jurisdiction over the nine-county region located in the Basin. The Association of Bay Area Governments (ABAG), Metropolitan Transportation Commission (MTC), county transportation agencies, cities and counties, and various nongovernmental organizations also join in the efforts to improve air quality through a variety of programs. These programs include the adoption of regulations and policies, as well as implementation of extensive education and public outreach programs.

Clean Air Plan

Air quality plans developed to meet federal requirements are referred to as State Implementation Plans. The federal and state Clean Air Acts require plans to be developed for areas designated as nonattainment (except for areas designated as nonattainment for the state PM_{10} standard). The BAAQMD is responsible for developing a Clean Air Plan, which guides the region's air quality planning efforts to attain the CAAQS. The BAAQMD adopted the 2017 Clean Air Plan: Spare the Air, Cool the Climate on April 19, 2019, by the BAAQMD.

BAAQMD periodically develops air quality plans that outline the regional strategy to improve air quality and protect the climate. The most recent plan, 2017 Bay Area Clean Air Plan, includes a wide range of control measures designed to reduce emissions of air pollutants and GHGs, including the following

examples that may be relevant to this project: reduce emissions of toxic air contaminants by adopting more stringent limits and methods for evaluating toxic risks; implement pricing measures to reduce travel demand; accelerate the widespread adoption of electric vehicles; promote the use of clean fuels; promote energy efficiency in both new and existing buildings; and promote the switch from natural gas to electricity for space and water heating in Bay Area buildings.

The 2017 Clean Air Plan provides a regional strategy to protect public health and protect the climate. To protect public health, the plan describes how the BAAQMD will continue progress toward attaining all state and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities. To protect the climate, the 2017 Clean Air Plan defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious greenhouse gas (GHG) reduction targets for 2030 and 2050 and provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve those GHG reduction targets. The 2017 Clean Air Plan contains district-wide control measures to reduce ozone precursor emissions (i.e., ROG and NO_X), particulate matter, TACs, and greenhouse gas emissions. The Bay Area 2017 Clean Air Plan updates the Bay Area 2010 Clean Air Plan in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone; provides a control strategy to reduce ozone, PM, TACs, and greenhouse gases in a single, integrated plan; reviews progress in improving air quality in recent years; and establishes emission control measures to be adopted or implemented in both the short term and through 2050.

The 2017 Clean Air Plan includes a wide range of control measures designed to decrease emissions of the air pollutants that are most harmful to Bay Area residents, such as particulate matter, ozone, and toxic air contaminants; to reduce emissions of methane and other "super-GHGs" that are potent climate pollutants in the near-term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

The following BAAQMD rules would limit emissions of air pollutants from construction and operation of the Project:

- Regulation 8, Rule 3 – Architectural Coatings. This rule governs the manufacture, distribution, and sale of architectural coatings and limits the reactive organic gases content in paints and paint solvents. Although this rule does not directly apply to the project, it does dictate the ROG content of paint available for use during the construction.

- Regulation 8, Rule 15 – Emulsified and Liquid Asphalts. This rule dictates the reactive organic gases content of asphalt available for use during construction through regulating the sale and use of asphalt and limits the ROG content in asphalt. Although this rule does not directly apply to the project, it does dictate the ROG content of asphalt for use during the construction.

- Regulation 9, Rule 8 – Organic Compounds. This rule limits the emissions of nitrogen oxides and carbon monoxide from stationary internal combustion engines with an output rated by the manufacturer at more than 50 brake horsepower.

BAAQMD prepared an Ozone Attainment Demonstration Plan to satisfy the federal 1-hour ozone planning requirement because of the Air Basin's nonattainment for federal and State ozone standards. The U.S. EPA revoked the 1-hour ozone standard and adopted an 8-hour ozone standard. The BAAQMD will address the new federal 8-hour ozone planning requirements once they are established.

3.3 LOCAL

City of Petaluma General Plan 2025

The Petaluma General Plan includes the following policies intended to control or reduce air pollution impacts:

Goal 4-G-3: **Air Quality.** Improve air quality and meet all Federal and State ambient air quality standards and goals by reducing the generation of air pollutants from stationary and mobile sources.

Policy 4-P-15: Improve air quality by reducing emissions from stationary sources of air pollution (e.g. equipment at commercial and industrial facilities) and stationary area sources (e.g. wood-burning fireplaces & gas powered lawn mowers) which cumulatively emit large quantities of emissions.

A. Continue to work with the Bay Area Air Quality Management District to achieve emissions reductions for non attainment pollutants; including carbon monoxide, ozone, and PM-10, by implementation of air pollution control measures as required by State and federal statutes.

   The BAAQMD's CEQA Guidelines should be used as the foundations for the City's review of air quality impacts under CEQA.

B. Continue to use Petaluma's development review process and the California Environmental Quality Act (CEQA) regulations to evaluate and mitigate the local and cumulative effects of new development on air quality.

C. Continue to require development projects to abide by the standard construction dust abatement measures included in BAAQMD's CEQA Guidelines.

   These measures would reduce exhaust and particulate emissions from construction and grading activities.

D. Reduce emissions from residential and commercial uses by requiring the following:

   - Use of high efficiency heating and other appliances, such as cooking equipment, refrigerators, and furnaces, and low NOx water heaters in new and existing residential units;

   - Compliance with or exceed requirements of CCR Title 24 for new residential and commercial buildings;

- Incorporation of passive solar building design and landscaping conducive to passive solar energy use for both residential and commercial uses, i.e., building orientation in a south to southeast direction, encourage planting of deciduous trees on west sides of structures, landscaping with drought resistant species, and use of groundcovers rather than pavement to reduce heat reflection;

- Encourage the use of battery-powered, electric, or other similar equipment that does not impact local air quality for non-residential maintenance activities;

- Provide natural gas hookups to fireplaces or require residential use of EPA-certified wood stoves, pellet stoves, or fireplace inserts

  Current building code standards generally ban the installation of open-hearth, wood-burning fireplaces and wood stoves in new construction. It does, however, allow for the use of low-polluting wood stoves and inserts in fireplaces approved by the federal Environmental Protection Agency, as well as fireplaces fueled by natural gas.

Policy 4-P-16: To reduce combustion emissions during construction and demolition phases, the contractor of future individual projects shall encourage the inclusion in construction contracts of the following requirements or measures shown to be equally effective:

- Maintain construction equipment engines in good condition and in proper tune per manufacturer's specification for the duration of construction;

- Minimize idling time of construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment

- Use alternative fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline);

- Use add-on control devices such as diesel oxidation catalysts or particulate filters;

- Use diesel equipment that meets the ARB's 2000 or newer certification standard for off-road heavy-duty diesel engines;

- Phase construction of the project;

- Limit the hours of operation of heavy duty equipment.

Policy 4-P-11: To avoid potential health effects and citizen complaints that may be caused by sources of odors, dust from agricultural uses, or toxic air contaminants the following measures may be considered:

- Locate new stationary sources of air pollutants, such as industrial facilities, at sufficient distances away from residential areas and facilities that serve sensitive receptors to avoid significant impacts caused by odors, dust, and toxic air contaminants.

- Include buffer zones within new residential and sensitive receptor site plans to separate those uses from potential sources of odors, dust from agricultural uses, and stationary sources of toxic air contaminants.

Goal 4-G-4: **Energy.** Reduce reliance on non-renewable energy sources in existing and new development.

Policy 4-P-19: Encourage use and development of renewable or nontraditional sources of energy.

A. Participate in state and local efforts to develop appropriate policies and review procedures for the institution of renewable energy sources such as solar, wind, geothermal, and hydroelectric power.

One such effort began in August 2005, when the City adopted a resolution requiring developers of residential projects of 5 or more units to wire all units for future photo voltaic arrays.

In addition, the State's Emerging Renewables Buydown Program provides rebates to consumers who install qualifying energy systems, such as photo voltaic, wind turbines, and fuel cells. As of July 2005, nearly 80 participants from within Petaluma have been involved with the program through the use solar energy systems.

B. Implement green building code to allow use of alternative building materials and methods.

D. Consider the feasibility of requiring a percentage of new development to meet 50% of their energy needs from fossil fuel alternatives (e.g. solar panels, etc.).

4 SIGNIFICANCE CRITERIA AND METHODOLOGY

4.1 AIR QUALITY THRESHOLDS

State CEQA Guidelines Appendix G

Based upon the criteria derived from State CEQA Guidelines Appendix G, a project normally would have a significant effect on the environment if it would:

AQ-1 Conflict with or obstruct implementation of the applicable air quality plan?

AQ-2 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

AQ-3 Expose sensitive receptors to substantial pollutant concentrations?

AQ-4 Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Air Quality Thresholds

Under the California Environmental Quality Act (CEQA), the Bay Area Air Quality Management District (BAAQMD) is an expert commenting agency on air quality within its jurisdiction or impacting its jurisdiction. Under the Federal Clean Air Act (FCAA), the BAAQMD has adopted Federal attainment plans for O_3 and $PM_{2.5}$. The BAAQMD reviews projects to ensure that they would not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any Federal attainment plan.

The BAAQMD Options and Justification Report (dated October 2009) establishes thresholds based on substantial evidence, and the thresholds are consistent with the thresholds outlined within the 2010/2011 BAAQMD CEQA Air Quality Guidelines (and current 2017 CEQA Air Quality Guidelines). The thresholds have been developed by the BAAQMD in order to attain State and Federal ambient air quality standards. Therefore, projects below these thresholds would not violate an air quality standard and would not contribute substantially to an existing or projected air quality violation.

The BAAQMD's CEQA Air Quality Guidelines provides significance thresholds for both construction and operation of projects. Ultimately the lead agency determines the thresholds of significance for impacts. However, if a project proposes development in excess of the established thresholds, as outlined in Table 5: Bay Area Air Quality Management District Emissions Thresholds, a significant air quality impact may occur and additional analysis is warranted to fully assess the significance of impacts.

Table 5: Bay Area Air Quality Management District Emissions Thresholds

Criteria Air Pollutants and Precursors (Regional)	Construction-Related	Operational-Related	
	Average Daily Emissions (pounds/day)	Average Daily Emission (pounds/day)	Annual Average Emission (tons/year)
Reactive Organic Gases (ROG)	54	54	10
Nitrogen Oxides (NO_X)	54	54	10
Coarse Particulates (PM_{10})	82 (exhaust)	82	15
Fine Particulates ($PM_{2.5}$)	54 (exhaust)	54	10
PM_{10} / $PM_{2.5}$ (fugitive dust)	Best Management Practices	None	
Local CO	None	9.0 ppm (8-hour average) 20.0 ppm (1-hour average)	
Risk and Hazards for new sources and receptors (Individual Project)	Risk and Hazards for new sources and receptors (Individual Project)	Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index Ambient $PM_{2.5}$ increase: > 0.3 µg/m^3 annual average	

Source: Bay Area Air Quality Management District, 2017 CEQA Air Quality Guidelines, 2017.

4.2 METHODOLOGY

This air quality impact analysis considers construction and operational impacts associated with the Project. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod). CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Air quality impacts were assessed according to methodologies recommended by CARB and the BAAQMD.

Construction equipment, trucks, worker vehicles, and ground-disturbing activities associated with Project construction would generate emissions of criteria air pollutants and precursors. Air quality impacts were assessed according to CARB and BAAQMD recommended methodologies. Daily regional construction emissions are estimated by assuming construction occurs at the earliest feasible date (i.e., a conservative estimate of construction activities) and applying off-road, fugitive dust, and on-road emissions factors in CalEEMod.

Project operations would result in emissions of area sources (consumer products), energy sources (natural gas usage), and mobile sources (motor vehicles from Project generated vehicle trips). Project-generated increases in operational emissions would be predominantly associated with motor vehicle use. The increase of traffic over existing conditions as a result of the Project was obtained from the Project's Transportation Analysis prepared by Kimley-Horn (March 2022). Other operational emissions from area, energy, and stationary sources were quantified in CalEEMod based on land use activity data.

As discussed above, the BAAQMD provides significance thresholds for emissions associated with proposed Project construction and operations. The proposed Project's construction and operational emissions are compared to the daily criteria pollutant emissions significance thresholds in order to determine the significance of the Project's impact on regional air quality.

5 POTENTIAL IMPACTS AND MITIGATION

5.1 AIR QUALITY ANALYSIS

Threshold AQ-1: Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The most recently adopted plan, the Clean Air Plan, in the Basin outlines how the San Francisco area will attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions.

The Clean Air Plan assumptions for projected air emissions and pollutants in the City Petaluma are based on the Petaluma 2025 General Plan Land Use Designation Map which designates the Project site use as "Mixed Use (MU1A)". The Project site is zoned "Mixed Use (MU1A)". The MU Zoning District allows for mixed use of pedestrian-oriented residential and commercial space consistent with the mixed-use classification of the general plan. The Project would be consistent with the development assumptions for the land use. Therefore, the Project is consistent with the General Plan assumptions. The proposed Project consists of 6.01 (gross area) of mixed use space consistent with the Petaluma 2025 General Plan FEIR land use designation. Using the California Department of Finance (E-5) estimates, the Project could result a local population increase of 346 people. However, based on Association of Bay Area Governments (ABAG) projections, the Project size and impact to would not increase regional population growth by significant portion nor cause changes in vehicle traffic that would obstruct implementation of the Clean Air Plan in the San Francisco Bay Area Basin.

As described below, construction and operational air quality emissions generated by the proposed Project would not exceed the BAAQMD's emissions thresholds. Since the proposed Project would not exceed these thresholds, the proposed Project would not be considered by the BAAQMD to be a substantial emitter of criteria air pollutants and would not contribute to any non-attainment areas in the Basin.

The Project is anticipated to generate additional residential dwelling units within the City that could attract new population. ABAG predicts that population in the city of Petaluma will grow from 59,425 in 2015 to 67,390 by 2040. The Project is consistent with the City General Plan; therefore, the addition of new residences would be within the ABAG growth projections for the City of approximately 7,190 job by 2040 and would not exceed the ABAG growth projections for the City (ABAG Projections and Forecasting). The Project would not exceed the level of population or housing in regional planning efforts. Therefore, population growth from the Project would be consistent with ABAG's projections for the City and with the City's General Plan.

A project would be consistent with the 2017 Clean Air Plan Progress Report if it would not exceed the growth assumptions in the plan. The primary method of determining consistency with the 2017 Clean Air Plan growth assumptions is consistency with the General Plan land use designations and zoning designations for the site. It should be noted that the Clean Air Plan does not make a specific assumption for development on the site, but bases assumptions on growth in population, travel, and business, based on socioeconomic forecasts. As noted above, the Project would not exceed the growth assumptions in the General Plan. Therefore, the growth assumptions in the Clean Air Plan would not be exceeded.

In addition, projects are considered consistent with the 2017 Clean Air Plan if they incorporate all applicable and feasible control measures from the 2017 Clean Air Plan and would not disrupt or hinder implementation of any 2017 Clean Air Plan control measures.

The Project is consistent with the 2017 Clean Air Plan policies that are applicable to the Project site. As discussed in Table 6: Project Consistency with Applicable Clean Air Plan Control Measures, the Project would comply with City, State, and regional requirements.

Table 6: Project Consistency with Applicable Clean Air Plan Control Measures

Control Measure	Project Consistency
Stationary Source Control Measures	
SS21: New Source Review of Toxic Air Contaminants	**Consistent**. The Project would not include new stationary uses that would generate new sources of TAC that would impact nearby sensitive receptors.
SS25: Coatings, Solvents, Lubricants, Sealants and Adhesives	**Consistent**. The Project would comply with Regulation 8, Rule 3: Architectural Coatings, which would dictate the ROG content of paint available for use during construction.
SS26: Surface Prep and Cleaning Solvent	
SS29: Asphaltic Concrete	**Consistent**. Paving activities associated with the Project would be required to utilize asphalt that does not exceed BAAQMD emission standards in Regulation 8, Rule 15.
SS31: General Particulate Matter Emissions Limitation	**Consistent**. This control measure is implemented by the BAAQMD through Regulation 6, Rule 1. This Rule Limits the quantity of particulate matter in the atmosphere by controlling emission rates, concentration, visible emissions and opacity. The Project would be required to comply with applicable BAAQMD rules.
SS32: Emergency Back-up Generators	**Consistent**. Use of back-up generators by the Project is currently not anticipated. However, if emergency generators were to be installed, they would be required to meet the BAAQMD's emissions standards for back-up generators.
SS34: Wood Smoke	**Consistent**. The Project would comply with BAAQMD Regulation 6, Rule 3 and prohibit the construction of wood burning appliances/ fireplaces.
SS36: Particulate Matter from Trackout	**Consistent**. Mud and dirt that may be tracked out onto the nearby public roads during construction activities would be removed promptly by the contractor based on BAAQMD's requirements.
SS37: Particulate Matter from Asphalt Operations	**Consistent**. Paving and roofing activities associated with the Project would be required to utilize best management practices to minimize the particulate matter created from the transport and application of road and roofing asphalt.
SS38: Fugitive Dust	**Consistent**. Material stockpiling and track out during grading activities as well as smoke and fumes from paving and roofing asphalt operations would be required to utilize best management practices, such as watering exposed surfaces twice a day, covering haul trucks, keeping vehicle speeds on unpaved roads under 15 mph, to minimize the creation of fugitive dust.
SS40: Odors	**Consistent**. The Project is a residential development and is not anticipated to generate odors. The Project would comply with BAAQMD Regulation 7 to strengthen odor standards and enhance enforceability.

Control Measure	Project Consistency
Transportation Control Measures	
TR2: Trip Reduction Programs	**Consistent**. The Project is a residential development that would not require on-site employees and delivery vehicle trips. The Project is a residential development, in the vicinity of different land use types, and nearby the Downtown Petaluma SMART Station and additional transit stops on Copeland Street and East D Street, which would encourage alternative transportation modes, which would help reduce vehicle miles traveled (VMT) and mobile greenhouse gas emissions.
TR8: Ridesharing and Last-Mile Connections	
TR9: Bicycle and Pedestrian Access Facilities	**Consistent**. Bicycle facilities in the area include East D Street and Lakeville Street which provide Class II and Class III bike lanes. The Class II bike lanes on a portion of Lakeville Street feature green paint markings in potential conflict areas. Bicycle parking in the surrounding area is limited to the Petaluma Downtown SMART Station. The proposed Project includes a new public pedestrian and bike path connecting East D Street to the Petaluma River Park.
TR10: Land Use Strategies	**Consistent**. This measure is a BAAQMD funding tool to maintain and disseminate information on current climate action plans and other local best practices and collaborate with regional partners to identify innovative funding mechanisms to help local governments address air quality and climate change in their general plans. In addition, the proposed Project site is located within 2,000 feet of transit stops at Copeland Street, Washington Street / Lakeville Street intersection, and the Petaluma Downtown SMART Station. Therefore, employment opportunities would be easily accessible via transit, furthering the City's General Plan goals to support a healthy community, reduce traffic congestion and decrease greenhouse gas emissions and energy consumption. The Project would not conflict with implementation of this measure.
TR13: Parking Policies	**Consistent**. The proposed Project would be sufficient for the proposed uses and would comply with applicable City parking requirements.
TR19: Medium and Heavy Duty Trucks	**Consistent.** The Project includes residential uses that would not generate truck trips.
TR22: Construction, Freight and Farming Equipment	**Consistent**. The Project would comply through implementation of the BAAQMD standard condition, which requires construction equipment to be properly maintained.
Energy and Climate Control Measures	
EN1: Decarbonize Electricity Generation	**Consistent**. The Project would be constructed in accordance with the latest California Building Code and green building regulations/CalGreen. The proposed development would be constructed in compliance with the City's General Plan Goal 2-G-18 implementing Green Building Standards.
EN2: Decrease Electricity Demand	
Buildings Control Measures	
BL1: Green Buildings	**Consistent**. The Project would be constructed in accordance with the latest California Building Code and green building regulations/CalGreen. The proposed development would be constructed in compliance with the City's General Plan Goal 2-G-18 implementing Green Building Standards.
L2: Decarbonize Buildings	

Control Measure	Project Consistency
BL4: Urban Heat Island Mitigation	**Consistent**. The Project would demolish two of the existing industrial buildings. The Project would include landscaping to mitigate the urban heat island effect.
Natural and Working Lands Control Measures	
NW2: Urban Tree Planting	**Not Applicable**. The Project site includes existing warehouse buildings. The Project includes landscaping with native vegetation and trees.
Waste Management Control Measures	
WA1: Landfills	**Consistent**. The waste service provider for the Project would be required to meet the AB 341 and SB 939, 1374, and 1383 requirements that require waste service providers to divert and recycle waste. Per Cal Green requirements the Project would recycle construction waste.
WA3: Green Waste Diversion	
WA4: Recycling and Waste Reduction	
Water Control Measures	
WR2: Support Water Conservation	**Consistent**. The Project would implement water conservation measures and low flow fixtures as required by Title 24, CalGreen, and the City of Petaluma's Municipal Code Chapter 15.17 Landscape Water Use Efficiency Standards, which includes various specifications for plant types, water features, and irrigation design etc.
Source: BAAQMD, Clean Air Plan, 2017 and Kimley-Horn & Associates, 2022.	

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold AQ-2: Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Construction Emissions

Project construction activities would generate short-term emissions of criteria air pollutants. The criteria pollutants of primary concern within the Project area include ozone-precursor pollutants (i.e., ROG and NO_X) and PM_{10} and $PM_{2.5}$. Construction-generated emissions are short term and temporary, lasting only while construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the BAAQMD's thresholds of significance.

Construction results in the temporary generation of emissions during demolition, site preparation, site grading, road paving, motor vehicle exhaust associated with construction equipment and worker trips, and the movement of construction equipment, especially on unpaved surfaces. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities, as well as weather conditions and the appropriate application of water.

The duration of construction activities associated with the Project are estimated to last approximately 24 months, beginning in January 2023, and concluding at the end of 2024. The Project's construction-related emissions were calculated using the BAAQMD recommended CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. Project demolition and site preparation are anticipated to begin in January 2023 and last

approximately one month. Project grading is anticipated to begin in March 2023 and last approximately four months and will export approximately 12,500 cubic yards (cy) of soil. Building construction was modeled to occur for approximately seven months and paving would occur for one month after building construction. Architectural Coating to be completed at the end of building construction and concluding in August 2024. The exact construction timeline is unknown; however, to be conservative, earlier dates were utilized in the modeling. This approach is conservative given that emissions factors decrease in future years due to regulatory and technological improvements and fleet turnover. See Appendix A: Air Quality Data for additional information regarding the construction assumptions used in this analysis. The Project's predicted maximum daily construction-related emissions are summarized in Table 7: Construction-Related Emissions.

Table 7: Construction-Related Emissions

Construction Year	Pollutant (maximum pounds per day)[1]					
	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_x)	Exhaust		Fugitive Dust	
			Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
2023	2.73	27.56	1.27	1.17	8.54	4.36
2024	23.14	14.77	0.63	0.59	1.1	0.29
Maximum	**23.14**	**27.56**	**1.27**	**1.17**	**8.54**	**4.36**
BAAQMD Significance Threshold [2, 3]	*54*	*54*	*82*	*54*	*BMPs*	*BMPs*
Exceed BAAQMD Threshold?	**No**	**No**	**No**	**No**	**N/A**	**N/A**

1. Emissions were calculated using CalEEMod. Mitigated emissions include compliance with the BAAQMD's Basic Construction Mitigation Measures Recommended for All Projects and the City of San José Environmental Standard Conditions. These measures include the following: water exposed surfaces two times daily; cover haul trucks; clean track outs with wet powered vacuum street sweepers; limit speeds on unpaved roads to 15 miles per hour; complete paving as soon as possible after grading; limit idle times to 5 minutes; properly maintain mobile and other construction equipment; and post a publicly visible sign with contact information to register dust complaints and take corrective action within 48 hours.
2. Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines, updated May 2017.
3. BMPs = Best Management Practices. The BAAQMD recommends the implementation of all Basic Construction Mitigation Measures, whether or not construction-related emissions exceed applicable significance thresholds. Implementation of Basic Construction Mitigation measures are considered to mitigate fugitive dust emissions to be less than significant.

Source: Refer to the CalEEMod outputs provided in Appendix A, *Air Quality Modeling Data*.

Fugitive Dust Emissions. Fugitive dust emissions are associated with land clearing, ground excavation, cut-and-fill operations, demolition, and truck travel on unpaved roadways. Dust emissions also vary substantially from day to day, depending on the level of activity, the specific operations, and weather conditions. Fugitive dust emissions may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the Project vicinity. Uncontrolled dust from construction can become a nuisance and potential health hazard to those living and working nearby. The BAAQMD recommends the implementation of all Basic Construction Control Measures, whether or not construction-related emissions exceed applicable significance. The Project would implement these practices during construction activities.

BAAQMD Basic Construction Control Measures

The following construction measures, as periodically amended by BAAQMD, are required for all proposed development projects to reduce construction-related fugitive dust and exhaust emissions:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered twice per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
5. All parking lots, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. A publicly visible sign with the telephone number and person to contact at the City of Petaluma regarding dust complaints shall be posted. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Construction Equipment and Worker Vehicle Exhaust. Exhaust emission factors for typical diesel-powered heavy equipment are based on the CalEEMod program defaults. Variables factored into estimating the total construction emissions include: level of activity, length of construction period, number of pieces/types of equipment in use, site characteristics, weather conditions, number of construction personnel, and the amount of materials to be transported onsite or offsite. Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the Project site, emissions produced on site as the equipment is used, and emissions from trucks transporting materials and workers to and from the site. Emitted pollutants would include ROG, NO_X, PM_{10}, and $PM_{2.5}$. The BAAQMD recommends the implementation of all Basic Construction Control Measures, whether or not construction-related emissions exceed applicable significance thresholds. The See the above listed Standard Permit Conditions. As detailed in Table 7, Project construction emissions would not exceed the BAAQMD thresholds and construction emissions would not result in a potentially significant impact.

ROG Emissions. In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions, which are O_3 precursors. In accordance with the methodology prescribed by the BAAQMD, the ROG emissions associated with paving have been quantified with CalEEMod. The highest concentration of ROG emissions would be generated from architectural coating beginning in 2024 and lasting approximately four months. This phase includes the interior and exterior painting as well as

striping of all paved parking areas and driveways. Paints would be required to comply with BAAQMD Regulation 8, Rule 3: Architectural Coating. Regulation 8, Rule 3 provides specifications on painting practices and regulates the ROG content of paint.

Asbestos. It is possible that asbestos containing materials (ACMs) may be present within existing buildings that may be demolished in the Project site because due to the age of the existing buildings. Therefore, the possibility exists that asbestos fibers may be released into the air should no asbestos assessment or removal (if needed) take place prior to demolition. The release of asbestos is regulated in the California Health and Safety Code section 39658(b)(1), which establishes the Asbestos National Emissions Standards for Hazardous Air Pollutants (NESHAP) as an airborne toxic control measure enforceable by CARB. The Asbestos NESHAP protects the public and environment by minimizing the release of asbestos fibers during renovation and demolition activities. The Asbestos NESHAP requires owners and operators to provide written notification of regulated demolition and renovation activities. All potentially friable ACMs are required to be removed in accordance with NESHAP guidelines prior to demolition or renovation activities that may disturb ACMs. All demolition activities are also required to be undertaken in accordance with Cal/OSHA standards contained in Title 8, CCR, Section 1529, to protect workers from asbestos exposure.

Additionally, a registered asbestos abatement contractor would be retained to develop an abatement plan and remove the ACMs, in accordance with local, State, and Federal requirements (including NESHAP standards). After removal, demolition may proceed without significant concern to the release of asbestos fibers into the air. Materials containing more than one-percent asbestos are also subject to BAAQMD Regulation 11, Rule 2 (Asbestos Demolition, Renovation and Manufacturing). Removal of materials containing more than one-percent asbestos would be completed in accordance with BAAQMD requirements and notifications. Compliance with the state regulations and BAAQMD Regulation 11, Rule 2 would ensure that impacts associated with ACMs would be less than significant. Therefore, compliance with State and federal regulations would result in a less than significant impact.

Summary. As shown in Table 7, all criteria pollutant emissions would remain below their respective thresholds. The BAAQMD considers fugitive dust emissions to be potentially significant without implementation of the Construction Control Measures which help control fugitive dust. NO_X emissions are primarily generated by engine combustion in construction equipment, haul trucks, and employee commuting, requiring the use of newer construction equipment with better emissions controls would reduce construction-related NO_X emissions. The proposed Project's construction would not worsen ambient air quality, create additional violations of federal and state standards, or delay the Basin's goal for meeting attainment standards. Implementation of the BAAQMD's Basic Construction Control Measures recommended for all projects would further reduce emissions. Impacts would be less than significant.

Operational Emissions

Operational emissions for industrial developments are typically generated from mobile sources (burning of fossil fuels in cars); energy sources (cooling and heating); and area sources (landscape equipment and household products). Table 8: Maximum Daily Project Operational Emissions shows that the Project's maximum emissions would not exceed BAAQMD operational thresholds.

Table 8: Maximum Daily Project Operational Emissions

Emissions Source	Pollutant (maximum pounds per day)[1]					
			Exhaust		Fugitive Dust	
	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO_X)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Existing Project Site						
Area	0.41	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.02	0.00	0.00	0.00	0.00
Mobile	0.60	0.89	0.01	0.01	0.93	0.25
Total Emissions	**1.01**	**0.91**	**0.01**	**0.01**	**0.93**	**0.25**
Proposed Project						
Area	5.23	0.72	2.27	2.27	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	1.99	2.47	0.03	0.03	3.00	0.80
Total Project Emissions	**7.23**	**3.20**	**2.30**	**2.30**	**3.00**	**0.80**
Net Emissions						
Existing Project Site	1.01	0.91	0.01	0.01	0.93	0.25
Proposed Project	7.23	3.20	2.30	2.30	3.00	0.80
Net Change	**+6.22**	**+2.29**	**+2.29**	**+2.29**	**+2.07**	**+0.55**
BAAQMD Significance Threshold[3]	*54*	*54*	*82*	*54*	*N/A*	*N/A*
BAAQMD Threshold Exceeded?	**No**	**No**	**No**	**No**	**N/A**	**N/A**

1. Emissions were calculated using CalEEMod.
2. The proposed Project would not include natural gas, per the City of Petaluma Municipal Code, Chapter 15.17.
3. Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, 2017.

Source: Refer to the CalEEMod outputs provided in Appendix A, *Air Quality and GHG Data*.

Area Source Emissions Area source emissions would be generated due to the use consumer products, architectural coating, and landscaping.

Energy Source Emissions. Energy source emissions would be generated as a result of electricity usage associated with the Project. The primary use of electricity by the Project would be for space heating and cooling, water heating, ventilation, lighting, appliances, and electronics.

Mobile Sources. Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_X, PM_{10}, and $PM_{2.5}$ are all pollutants of regional concern (NO_X and ROG react with sunlight to form O_3 [photochemical smog], and wind currents readily transport PM_{10} and $PM_{2.5}$). However, CO tends to be a localized pollutant, dispersing rapidly at the source.

Project-generated vehicle emissions have been estimated using CalEEMod. Trip generation rates associated with the Project were based on the Project Transportation Memo prepared by Kimley-Horn (2022). Based on the Transportation Memo, the Project would result in a gross total of 631 daily vehicle trips. With applicable trip reductions including taking credit for internal capture and pass-by use trips, the Project would result in a net of 481 more trips than the existing use.

Total Operational Emissions. As indicated in Table 8, net Project operational emissions would not exceed BAAQMD thresholds and, as discussed before, most pollutants generated by the Project would incrementally more than the existing use. As noted above, the BAAQMD has set its CEQA significance threshold based on the trigger levels for the federal NSR Program and BAAQMD's Regulation 2, Rule 2 for new or modified sources. The NSR Program was created to ensure projects are consistent with attainment of health-based federal ambient air quality standards. The federal ambient air quality standards establish the levels of air quality necessary, with an adequate margin of safety, to protect the public health. Therefore, the Project would not violate any air quality standards or contribute substantially to an existing or projected air quality violation and no criteria pollutant health impacts would occur. Project operational emissions would be less than significant.

Cumulative Short-Term Emissions

The SFBAAB is designated nonattainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards and nonattainment for O_3 and $PM_{2.5}$ for Federal standards. As discussed above, the Project's construction-related emissions by themselves would not have the potential to exceed the BAAQMD significance thresholds for any of the criteria pollutants. The BAAQMD developed the construction thresholds of significance based on the level above which a project's individual emissions would result in a cumulatively considerable contribution to the Basin's existing air quality conditions. Therefore, a project that exceeds the BAAQMD thresholds would also be a cumulatively considerable contribution to a significant cumulative impact.[1]

Project-related construction emissions would not be cumulatively considerable because they do not exceed BAAQMD project level thresholds. Since BAAQMD thresholds indicate whether an individual project's emissions have the potential to affect cumulative regional air quality, it can be expected that an individual project that exceeds these thresholds would result in a cumulative short-term impact. Project level cumulative construction emissions would not exceed threshold. Furthermore, the BAAQMD recommends Basic Construction Mitigation Measures for all projects whether construction-related emissions exceed the thresholds of significance. Other projects would comply with the recommended measures through individual CEQA review and through compliance with BAAQMD Regulations. Compliance with BAAQMD construction-related mitigation requirements is considered to reduce cumulative impacts at a Basin-wide level. As a result, construction emissions associated with the Project would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

Cumulative Long-Term Impacts

The BAAQMD has not established separate significance thresholds for cumulative operational emissions. The nature of air emissions is largely a cumulative impact. As a result, no single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. The BAAQMD developed the operational thresholds of significance based on the level above which a project's individual emissions would result in a cumulatively considerable contribution to the Basin's existing air quality

[1] In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions (BAAQMD CEQA Guidelines page 2-1).

conditions. Therefore, a project that exceeds the BAAQMD operational thresholds would also be a cumulatively considerable contribution to a significant cumulative impact.

As shown in Table 8, the Project's operational emissions would not exceed BAAQMD thresholds. As a result, operational emissions associated with the Project would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

Level of Significance: Less than significant impact with compliance with Standard Development Requirements and City policies.

Threshold AQ-3: Would the Project expose sensitive receptors to substantial pollutant concentrations?

Sensitive land uses are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. The State CEQA Guidelines indicate that a potentially significant impact could occur if a project would expose sensitive receptors to substantial pollutant concentrations.

Construction Toxic Air Contaminants

Construction equipment and associated heavy-duty truck traffic generates diesel particulate matter (DPM) which is a known Toxic Air Contaminants (TAC). DPM from construction equipment exhaust operating at the site poses a health risk to nearby sensitive receptors. However, the use of diesel-powered construction equipment would be temporary and episodic. The duration of exposure would be short and exhaust from construction equipment dissipates rapidly. Current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 30, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. The California Office of Environmental Health Hazard Assessment (OEHHA) has not identified short-term health effects from DPM. Construction is temporary and would be transient throughout the site (i.e., move from location to location) and would not generate emissions in a fixed location for extended periods of time which would limit the exposure of any proximate individual sensitive receptor to TACs.

Additionally, construction is subject to and would comply with California regulations (e.g., California Code of Regulations, Title 13, Division 3, Article 1, Chapter 10, Sections 2485 and 2449), which reduce DPM and criteria pollutant emissions from in-use off-road diesel-fueled vehicles and limit the idling of heavy-duty construction equipment to no more than five minutes. These regulations would further reduce nearby sensitive receptors' exposure to temporary and variable DPM emissions.

An evaluation of health risk from construction was conducted in accordance with the BAAQMD *Air Toxics NSR Program Health Risk Assessment Guidelines* (December 2016) and the OEHHA *Air Toxics Hot Spots Program Risk Assessment Guidelines* (February 2015). Construction-related activities would result in Project-generated emissions of DPM from the exhaust of off-road, heavy-duty diesel equipment for demolition; site preparation (e.g., clearing, grading); building construction; paving; application of architectural coatings; on-road truck travel; and other miscellaneous activities. For construction activity, DPM is the primary toxic air contaminant of concern. On-road diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment are less of a concern because they would

not stay on the site for long durations. Diesel exhaust from construction equipment operating at the site poses a health risk to nearby sensitive receptors.

PM_{10} exhaust construction emissions rates in grams per second were calculated from the total annual on-site exhaust emissions reported in CalEEMod during construction. PM_{10} exhaust construction emissions over the entire construction period were used in AERMOD, a U.S. EPA-approved dispersion model, to approximate construction DPM emissions. AERMOD is a steady-state, multiple-source, Gaussian dispersion model designed for use with emission sources situated in terrain where ground elevations can exceed the stack heights of the emission sources. AERMOD requires hourly meteorological data consisting of wind vector, wind speed, temperature, stability class, and mixing height. Uniform Cartesian receptors were used to evaluate the locations of the maximally exposed sensitive receptors. Surface and upper air meteorological data from the Gnoss Field Monitoring Station provided by the CARB was selected as being the most representative meteorology. In addition, National Elevation Dataset (NED) terrain data was imported into AERMOD for the Project.

Risk levels were calculated using the CARB Risk Assessment Standalone Tool (RAST), which is based on OEHHA methodology and BAAQMD guidance. BAAQMD's threshold for cancer risk is ten in-one-million and the noncancer hazard index is one. Projects that do not exceed these thresholds would not result in a significant impact.

The surrounding land use is a mix of vacant land, residential, and commercial. Using AERMOD, the maximum (worst case) PM_{10} exhaust construction emissions over the entire construction period at residential properties, potential worker locations, and the closest school (student locations) were identified to approximate construction DPM concentrations. Results of this assessment are summarized in Table 9: Construction Risk.

Table 9: Construction Risk

Exposure Scenario	Pollutant Concentration ($\mu g/m^3$)	Cancer Risk (per million)	Hazard Index
Residential[1]	0.03	9.4	0.006
Worker[2]	0.20	6.5	0.040
Student[3]	0.005	2.2	0.001
BAAQMD Threshold	*0.3*	*10*	*1.0*
Threshold Exceeded?	**No**	**No**	**No**
1. The maximally exposed residential receptor is located approximately 900 feet to the northeast 2. The maximally exposed worker receptor is located immediately adjacent to the northern property boundary. 3. The maximally exposed student receptor is located approximately 2,000 feet to the northeast.			
Refer to Appendix A: Modeling data.			

The maximum concentrations at the maximally exposed residential, worker, and student receptors would be 0.03 $\mu g/m^3$, 0.20 $\mu g/m^3$, and 0.005 $\mu g/m^3$ which would not exceed the BAAQMD threshold of 0.3 $\mu g/m^3$. The highest calculated carcinogenic risk from project construction would be 9.4 per one million, which would not exceed the BAAQMD threshold of 10 in one million. It should be noted that the cancer risk is conservatively based on a 3-year exposure duration as recommended by the BAAQMD even though the actual construction duration would be approximately less than two years. The non-cancer hazards for DPM would also be below BAAQMD thresholds, with residential, worker, and student hazard index computed at 0.006, 0.040, and 0.001, respectively. As described above, worst-case construction risk levels

based on conservative assumptions would be below the BAAQMD's thresholds for construction and construction risk levels would be less than significant.

Operational Health Risk

The Project proposes residential and live-work units. The project would not include a significant number of heavy-duty diesel trucks or other sources of TACs. Therefore, there would be no impact to off-site receptors. Regarding on-site risk, the project is not located in an area designated as location where further study or implementation of best management practices is required according to the BAAQMD's Planning Healthy Places mapping.[2]

Stationary sources within a 1,000-foot radius of the Project site were reviewed using BAAQMD's Stationary Source Screening Analysis Tools. There were seven stationary sources located within a 1,000-foor radius of the Project site, as indicated in Table 10: Cumulative Operational Health Risk.

Table 100: Cumulative Operational Health Risk

Emissions Sources	$PM_{2.5}$ (µg/m³)	Cancer Risk (per million	Hazard
Project Mobile Emissions	0.03	9.4	0.006
Major Street Sources[1]	0.02	1.50	0.12
Highway Sources[1]	0.05	2.98	0.20
Railway Sources[1]	0.00	0.52	0.00
Stationary Sources			
Silver Creek Valley Shell	0.00	0.17	0.00
Lind Marine Incorporated	0.00	0.00	0.00
Gasco	0.00	1.14	0.005
Kresky Signs, Inc	0.00	0.00	0.00
Rich's Collision and Repair Services Inc.	0.00	0.00	0.00
Petaluma Valero	0.00	0.37	0.002
Petaluma Chevron	0.00	0.47	0.002
Cumulative Health Risk Values	**0.1**	**16.55**	**0.34**
BAAQMD Cumulative Threshold	*0.8*	*100*	*10*
Threshold Exceeded?	**No**	**No**	**No**

1. BAAQMD GIS data.
Source: BAAQMD's Stationary Source Data and GIS Mapping Tools, 2021.

As described above in Table 10, cumulative impacts related to cancer risk and hazard would be less than cumulatively considerable and within acceptable limits. Additionally, cumulative residential $PM_{2.5}$ would not exceed the BAAQMD's cumulative threshold of 0.8 µg/m³, the primary contributor to those concentrations is the existing highway sources near the Project area. The existing highway and major

[2] Bay Area Air Quality Management District, *Planning Healthy Places Interactive Mapping*, https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=51c2d0bc59244013ad9d52b8c35cbf66

street sources have a high $PM_{2.5}$ (0.70 µg/m^3). The highway and major street sources represent approximately 70 percent of the total concentrations and are completely unrelated to the Project. The Project represents less than 30 percent of total cumulative $PM_{2.5}$ in the Project area. Therefore, the Project's cumulative impacts would be less than significant.

Carbon Monoxide Hotspots

The primary mobile-source criteria pollutant of local concern is carbon monoxide. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Transport of this criteria pollutant is extremely limited; CO disperses rapidly with distance from the source under normal meteorological conditions. Under certain meteorological conditions, however, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. CO concentration modeling is therefore typically conducted for intersections that are projected to operate at unacceptable levels of service during peak commute hours.

The Basin is designated as in attainment for carbon monoxide (CO). Emissions and ambient concentrations of CO have decreased dramatically in the Basin with the introduction of the catalytic converter in 1975. No exceedances of the CAAQS or NAAQS for CO have been recorded at nearby monitoring stations since 1991. As a result, the BAAQMD screening criteria notes that CO impacts may be determined to be less than significant if a project would not increase traffic volumes at local intersections to more than 44,000 vehicles per hour, or 24,000 vehicles per hour for locations in heavily urban areas, where "urban canyons" formed by buildings tend to reduce air circulation. Traffic would increase along surrounding roadways during long-term operational activities.

According to the Transportation Memo prepared for the Project (2022), the Project would generate 481 new daily trips. The Project's effects to existing vehicle distribution and travel speeds would be nominal. Therefore, the Project would not involve intersections with more than 24,000 or 44,000 vehicles per hour. As a result, the Project would not have the potential to create a CO hotspot and impacts would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold AQ-4: Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Construction

According to the BAAQMD, land uses associated with odor complaints typically include wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. The Project does not include any uses identified by the BAAQMD as being associated with odors.

Construction activities associated with the Project may generate detectable odors from heavy duty equipment (i.e., diesel exhaust), as well as from architectural coatings and asphalt off-gassing. Odors generated from the referenced sources are common in the man-made environment and are not known to be substantially offensive to adjacent receptors. Any construction-related odors would be short-term in nature and cease upon Project completion. As a result, impacts to existing adjacent land uses from construction-related odors would be short-term in duration and therefore would be less than significant.

Operational

BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants. BAAQMD's thresholds for odors are qualitative based on BAAQMD's Regulation 7, Odorous Substances. This rule places general limitations on odorous substances and specific emission limitations on certain odorous compounds.

The Project includes mixed residential and live/work units, which is not anticipated to generate odors. None of the above listed odor generating uses are located near the Project site. Impacts would be less than significant.

Mitigation Measures: Compliance with General Plan Policies and applicable state and local law would reduce impacts associated with odors to a less than significant level. No additional site-specific mitigation measures are required.

Level of Significance: Less than significant impact.

5.2 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

Cumulative Setting

The cumulative setting for air quality includes the City and the Air Basin. The Air Basin is designated as a nonattainment area for state standards of ozone, PM_{10}, and $PM_{2.5}$ and federal standards of ozone and $PM_{2.5,}$ attainment and serious maintenance for federal PM_{10} standards, and is designated as unclassified or attainment for all other pollutants. Cumulative growth in population and vehicle use could inhibit efforts to improve regional air quality and attain the ambient air quality standards.

Cumulative Impacts and Mitigation Measures

The BAAQMD CEQA Air Quality Guidelines do not include separate significance thresholds for cumulative operational emissions. However, with respect to regional air pollution, the development of the Project would result in population growth that is consistent with ABAG projections and the City General Plan. Therefore, the Project would be consistent with the 2017 Clean Air Plan that uses ABAG population forecasts.

As described in threshold AQ-1 above, the Project would also be consistent with the appropriate 2017 Clean Air Plan control measures, which are provided to reduce air quality emissions for the entire Bay Area region. Additionally, the discussion in threshold AQ-2 addresses cumulative impacts and demonstrates that the Project would not exceed the applicable BAAQMD thresholds for construction or

operations with implementation of Standard Development Requirements. The BAAQMD CEQA Air Quality Guidelines note that the nature of air emissions is largely a cumulative impact. As a result, no single project is sufficient in size by itself to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. Consistency with the 2017 Clean Air Plan control measures would ensure that the Project would not cumulatively contribute to air quality impacts in the Basin. Therefore, impacts would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

6 REFERENCES

1. Bay Area Air Quality Management District, *Planning Healthy Places*, 2016.
2. Bay Area Air Quality Management District, *CEQA Air Quality Guidelines,* 2017.
3. Bay Area Air Quality Management District, *Clean Air Plan*, 2017.
4. Bay Area Air Quality Management District, *Air Quality Standards and Attainment Status,* 2017.
5. Bay Area Air Quality Management District, *Current Rules*, 2017.
6. California Air Pollution Control Officers Association (CAPCOA), *Health Effects*, 2018.
7. California Air Pollution Control Officers Association (CAPCOA), *Health Risk Assessments for Proposed Land Use Projects*, 2009.
8. California Air Resources Board, *Aerometric Data Analysis and Measurement System (ADAM) Top Four Summaries from* 2018 to 2020.
9. California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, 2005.
10. California Air Resources Board, *Current Air Quality Standards*, 2016.
11. California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, 2000.
12. City of Petaluma, *General Plan,* 2008.
13. City of Petaluma, *Municipal Code*, 2021.
14. Kimley-Horn & Associates, *Oyster Cove Transportation Impact Study*, January 2022.
15. United States Environmental Protection Agency, *National Ambient Air Quality Standards Table*, 2016.
16. United States Environmental Protection Agency, *Nonattainment Areas for Criteria Pollutants*, 2018.
17. United States Environmental Protection Agency, *Policy Assessment for the Review of the Lead National Ambient Air Quality Standards*, 2013.
18. Association of Bay Area Governments (ABAG), *Forecasts and Projections,* July 2017, https://abag.ca.gov/our-work/land-use/forecasts-projections

Appendix A

Air Quality Modeling Data

Oyster Cove Existing - Sonoma-San Francisco County, Summer

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

Oyster Cove Existing

Sonoma-San Francisco County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	17.00	1000sqft	0.39	17,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2022
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Existing operational run only.

Vehicle Trips - Per traffic analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	PhaseEndDate	8/24/2022	8/17/2022
tblVehicleTrips	ST_TR	1.74	8.82
tblVehicleTrips	SU_TR	1.74	8.82
tblVehicleTrips	WD_TR	1.74	8.82

Oyster Cove Existing - Sonoma-San Francisco County, Summer

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

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0818	0.0000	0.0000	0.0818	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0818**	**0.0000**	**0.0000**	**0.0818**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0818	0.0000	0.0000	0.0818	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0818**	**0.0000**	**0.0000**	**0.0818**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	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**

Oyster Cove Existing - Sonoma-San Francisco County, Summer

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4125	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.7200e-003	3.7200e-003	1.0000e-005		3.9700e-003
Energy	1.7300e-003	0.0157	0.0132	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003		18.8493	18.8493	3.6000e-004	3.5000e-004	18.9613
Mobile	0.5967	0.7853	5.1919	9.8200e-003	0.9265	0.0106	0.9372	0.2475	0.0100	0.2575		1,004.8193	1,004.8193	0.0662	0.0507	1,021.5759
Total	**1.0110**	**0.8010**	**5.2068**	**9.9100e-003**	**0.9265**	**0.0118**	**0.9384**	**0.2475**	**0.0112**	**0.2587**		**1,023.6723**	**1,023.6723**	**0.0666**	**0.0510**	**1,040.5412**

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	0.4125	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.7200e-003	3.7200e-003	1.0000e-005		3.9700e-003
Energy	1.7300e-003	0.0157	0.0132	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003		18.8493	18.8493	3.6000e-004	3.5000e-004	18.9613
Mobile	0.5967	0.7853	5.1919	9.8200e-003	0.9265	0.0106	0.9372	0.2475	0.0100	0.2575		1,004.8193	1,004.8193	0.0662	0.0507	1,021.5759
Total	**1.0110**	**0.8010**	**5.2068**	**9.9100e-003**	**0.9265**	**0.0118**	**0.9384**	**0.2475**	**0.0112**	**0.2587**		**1,023.6723**	**1,023.6723**	**0.0666**	**0.0510**	**1,040.5412**

Oyster Cove Existing - Sonoma-San Francisco County, Summer

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	8/18/2022	8/17/2022	5	0	

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: 25,500; Non-Residential Outdoor: 8,500; Striped Parking Area: 0 (Architectural

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	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2022

Unmitigated Construction On-Site

Oyster Cove Existing - Sonoma-San Francisco County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	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**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

Oyster Cove Existing - Sonoma-San Francisco County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	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**

Mitigated Construction Off-Site

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

Oyster Cove Existing - Sonoma-San Francisco County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5967	0.7853	5.1919	9.8200e-003	0.9265	0.0106	0.9372	0.2475	0.0100	0.2575		1,004.8193	1,004.8193	0.0662	0.0507	1,021.5759
Unmitigated	0.5967	0.7853	5.1919	9.8200e-003	0.9265	0.0106	0.9372	0.2475	0.0100	0.2575		1,004.8193	1,004.8193	0.0662	0.0507	1,021.5759

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	150.01	150.01	150.01	437,950	437,950
Total	150.01	150.01	150.01	437,950	437,950

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
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.518054	0.061069	0.177567	0.134026	0.039945	0.009365	0.014425	0.006389	0.001127	0.000304	0.031388	0.001549	0.004793

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Oyster Cove Existing - Sonoma-San Francisco County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.7300e-003	0.0157	0.0132	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003		18.8493	18.8493	3.6000e-004	3.5000e-004	18.9613
NaturalGas Unmitigated	1.7300e-003	0.0157	0.0132	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003		18.8493	18.8493	3.6000e-004	3.5000e-004	18.9613

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					
Unrefrigerated Warehouse-No Rail	160.219	1.7300e-003	0.0157	0.0132	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003		18.8493	18.8493	3.6000e-004	3.5000e-004	18.9613
Total		**1.7300e-003**	**0.0157**	**0.0132**	**9.0000e-005**		**1.1900e-003**	**1.1900e-003**		**1.1900e-003**	**1.1900e-003**		**18.8493**	**18.8493**	**3.6000e-004**	**3.5000e-004**	**18.9613**

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

Oyster Cove Existing - Sonoma-San Francisco County, Summer

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

Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0.160219	1.7300e-003	0.0157	0.0132	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003		18.8493	18.8493	3.6000e-004	3.5000e-004	18.9613
Total		**1.7300e-003**	**0.0157**	**0.0132**	**9.0000e-005**		**1.1900e-003**	**1.1900e-003**		**1.1900e-003**	**1.1900e-003**		**18.8493**	**18.8493**	**3.6000e-004**	**3.5000e-004**	**18.9613**

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	0.4125	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.7200e-003	3.7200e-003	1.0000e-005		3.9700e-003
Unmitigated	0.4125	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.7200e-003	3.7200e-003	1.0000e-005		3.9700e-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	lb/day										lb/day					

Oyster Cove Existing - Sonoma-San Francisco County, Summer

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

Architectural Coating	0.0486					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3638					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.7200e-003	3.7200e-003	1.0000e-005		3.9700e-003
Total	**0.4125**	**2.0000e-005**	**1.7400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.7200e-003**	**3.7200e-003**	**1.0000e-005**		**3.9700e-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	lb/day										lb/day					
Architectural Coating	0.0486					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3638					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.7200e-003	3.7200e-003	1.0000e-005		3.9700e-003
Total	**0.4125**	**2.0000e-005**	**1.7400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.7200e-003**	**3.7200e-003**	**1.0000e-005**		**3.9700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Date: 3/7/2022 2:30 PM

Oyster Cove Existing - Sonoma-San Francisco County, Summer

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

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

Oyster Cove Existing - Sonoma-San Francisco County, Winter

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

Oyster Cove Existing

Sonoma-San Francisco County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	17.00	1000sqft	0.39	17,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2022
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Existing operational run only.

Vehicle Trips - Per traffic analysis

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	PhaseEndDate	8/24/2022	8/17/2022
tblVehicleTrips	ST_TR	1.74	8.82
tblVehicleTrips	SU_TR	1.74	8.82
tblVehicleTrips	WD_TR	1.74	8.82

2.0 Emissions Summary

Date: 3/7/2022 2:28 PM

Oyster Cove Existing - Sonoma-San Francisco County, Winter

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0818	0.0000	0.0000	0.0818	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0818**	**0.0000**	**0.0000**	**0.0818**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0818	0.0000	0.0000	0.0818	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0818**	**0.0000**	**0.0000**	**0.0818**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	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

Date: 3/7/2022 2:28 PM

Oyster Cove Existing - Sonoma-San Francisco County, Winter

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

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	0.4125	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.7200e-003	3.7200e-003	1.0000e-005		3.9700e-003
Energy	1.7300e-003	0.0157	0.0132	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003		18.8493	18.8493	3.6000e-004	3.5000e-004	18.9613
Mobile	0.5559	0.8887	5.4881	9.3600e-003	0.9265	0.0107	0.9372	0.2475	0.0100	0.2575		957.4723	957.4723	0.0742	0.0553	975.8109
Total	**0.9701**	**0.9044**	**5.5031**	**9.4500e-003**	**0.9265**	**0.0119**	**0.9384**	**0.2475**	**0.0112**	**0.2587**		**976.3253**	**976.3253**	**0.0746**	**0.0557**	**994.7762**

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	0.4125	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.7200e-003	3.7200e-003	1.0000e-005		3.9700e-003
Energy	1.7300e-003	0.0157	0.0132	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003		18.8493	18.8493	3.6000e-004	3.5000e-004	18.9613
Mobile	0.5559	0.8887	5.4881	9.3600e-003	0.9265	0.0107	0.9372	0.2475	0.0100	0.2575		957.4723	957.4723	0.0742	0.0553	975.8109
Total	**0.9701**	**0.9044**	**5.5031**	**9.4500e-003**	**0.9265**	**0.0119**	**0.9384**	**0.2475**	**0.0112**	**0.2587**		**976.3253**	**976.3253**	**0.0746**	**0.0557**	**994.7762**

	ROG	NOx	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

Oyster Cove Existing - Sonoma-San Francisco County, Winter

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

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	8/18/2022	8/17/2022	5	0	

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: 25,500; Non-Residential Outdoor: 8,500; Striped Parking Area: 0 (Architectural

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	1.00	0.00	0.00	10.80	7.30	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

Oyster Cove Existing - Sonoma-San Francisco County, Winter

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

Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	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**

Unmitigated Construction Off-Site

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

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					

Oyster Cove Existing - Sonoma-San Francisco County, Winter

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

Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	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**

Mitigated Construction Off-Site

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

Oyster Cove Existing - Sonoma-San Francisco County, Winter

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

Category	lb/day											lb/day					
Mitigated	0.5559	0.8887	5.4881	9.3600e-003	0.9265	0.0107	0.9372	0.2475	0.0100	0.2575		957.4723	957.4723	0.0742	0.0553	975.8109
Unmitigated	0.5559	0.8887	5.4881	9.3600e-003	0.9265	0.0107	0.9372	0.2475	0.0100	0.2575		957.4723	957.4723	0.0742	0.0553	975.8109

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	150.01	150.01	150.01	437,950	437,950
Total	150.01	150.01	150.01	437,950	437,950

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
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.518054	0.061069	0.177567	0.134026	0.039945	0.009365	0.014425	0.006389	0.001127	0.000304	0.031388	0.001549	0.004793

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

Oyster Cove Existing - Sonoma-San Francisco County, Winter

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

Category	lb/day										lb/day					
NaturalGas Mitigated	1.7300e-003	0.0157	0.0132	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003		18.8493	18.8493	3.6000e-004	3.5000e-004	18.9613
NaturalGas Unmitigated	1.7300e-003	0.0157	0.0132	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003		18.8493	18.8493	3.6000e-004	3.5000e-004	18.9613

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					
Unrefrigerated Warehouse-No Rail	160.219	1.7300e-003	0.0157	0.0132	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003		18.8493	18.8493	3.6000e-004	3.5000e-004	18.9613
Total		**1.7300e-003**	**0.0157**	**0.0132**	**9.0000e-005**		**1.1900e-003**	**1.1900e-003**		**1.1900e-003**	**1.1900e-003**		**18.8493**	**18.8493**	**3.6000e-004**	**3.5000e-004**	**18.9613**

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					
Unrefrigerated Warehouse-No Rail	0.160219	1.7300e-003	0.0157	0.0132	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003		18.8493	18.8493	3.6000e-004	3.5000e-004	18.9613
Total		**1.7300e-003**	**0.0157**	**0.0132**	**9.0000e-005**		**1.1900e-003**	**1.1900e-003**		**1.1900e-003**	**1.1900e-003**		**18.8493**	**18.8493**	**3.6000e-004**	**3.5000e-004**	**18.9613**

Oyster Cove Existing - Sonoma-San Francisco County, Winter

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

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	0.4125	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.7200e-003	3.7200e-003	1.0000e-005		3.9700e-003
Unmitigated	0.4125	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.7200e-003	3.7200e-003	1.0000e-005		3.9700e-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	lb/day										lb/day					
Architectural Coating	0.0486					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3638					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.7200e-003	3.7200e-003	1.0000e-005		3.9700e-003
Total	**0.4125**	**2.0000e-005**	**1.7400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.7200e-003**	**3.7200e-003**	**1.0000e-005**		**3.9700e-003**

Oyster Cove Existing - Sonoma-San Francisco County, Winter

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

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	0.0486					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3638					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.7200e-003	3.7200e-003	1.0000e-005		3.9700e-003
Total	**0.4125**	**2.0000e-005**	**1.7400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.7200e-003**	**3.7200e-003**	**1.0000e-005**		**3.9700e-003**

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

Oyster Cove Existing - Sonoma-San Francisco County, Winter

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Oyster Cove - Sonoma-San Francisco County, Summer

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

Oyster Cove

Sonoma-San Francisco County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	1.34	Acre	1.34	58,370.40	0
Apartments Low Rise	10.00	Dwelling Unit	0.63	10,000.00	29
Condo/Townhouse	122.00	Dwelling Unit	7.63	122,000.00	349
Regional Shopping Center	1.50	1000sqft	0.03	1,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Apartment Low Rise = Live/Work units (ITE 220)

Construction Phase - Per construction assumptions

Demolition - 10,000 sf building material + 64,800 sf pavement

Grading -

Vehicle Trips - Per TA

Woodstoves - No wood burning appliances per BAAQMD

Construction Off-road Equipment Mitigation - per BAAQMD rule compliance

Waste Mitigation - Per AB 393

Oyster Cove - Sonoma-San Francisco County, Summer

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

Energy Use - No natural gas per city policy

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	87.00
tblConstructionPhase	NumDays	230.00	170.00
tblConstructionPhase	NumDays	20.00	24.00
tblConstructionPhase	NumDays	20.00	133.00
tblConstructionPhase	NumDays	20.00	174.00
tblConstructionPhase	NumDays	10.00	21.00
tblEnergyUse	NT24NG	3,155.00	0.00
tblEnergyUse	NT24NG	3,155.00	0.00
tblEnergyUse	T24E	77.89	2,568.89
tblEnergyUse	T24E	52.36	3,108.36
tblEnergyUse	T24E	2.46	172.31
tblEnergyUse	T24NG	6,712.79	0.00
tblEnergyUse	T24NG	14,104.62	0.00
tblEnergyUse	T24NG	2.34	0.00
tblFireplaces	NumberWood	1.70	0.00
tblFireplaces	NumberWood	20.74	0.00
tblGrading	MaterialExported	0.00	3,000.00
tblGrading	MaterialImported	0.00	12,500.00
tblVehicleTrips	ST_TR	8.14	3.36
tblVehicleTrips	ST_TR	8.14	4.30
tblVehicleTrips	ST_TR	46.12	49.63
tblVehicleTrips	SU_TR	6.28	3.36
tblVehicleTrips	SU_TR	6.28	4.30

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

tblVehicleTrips	SU_TR	21.10	49.63
tblVehicleTrips	WD_TR	7.32	3.36
tblVehicleTrips	WD_TR	7.32	4.30
tblVehicleTrips	WD_TR	37.75	49.63

2.0 Emissions Summary

Oyster Cove - Sonoma-San Francisco County, Summer

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.7258	27.5631	20.6331	0.0507	19.8049	1.2669	21.0718	10.1417	1.1655	11.3072	0.0000	5,027.8407	5,027.8407	1.1968	0.1878	5,110.9587
2024	23.1433	14.7672	19.7100	0.0403	1.1475	0.6248	1.7723	0.3080	0.5877	0.8957	0.0000	3,946.1918	3,946.1918	0.7381	0.1008	3,992.2076
Maximum	**23.1433**	**27.5631**	**20.6331**	**0.0507**	**19.8049**	**1.2669**	**21.0718**	**10.1417**	**1.1655**	**11.3072**	**0.0000**	**5,027.8407**	**5,027.8407**	**1.1968**	**0.1878**	**5,110.9587**

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					
2023	2.7258	27.5631	20.6331	0.0507	8.5435	1.2669	9.8104	4.3561	1.1655	5.5217	0.0000	5,027.8407	5,027.8407	1.1968	0.1878	5,110.9587
2024	23.1433	14.7672	19.7100	0.0403	1.0892	0.6248	1.7139	0.2937	0.5877	0.8813	0.0000	3,946.1918	3,946.1918	0.7381	0.1008	3,992.2076
Maximum	**23.1433**	**27.5631**	**20.6331**	**0.0507**	**8.5435**	**1.2669**	**9.8104**	**4.3561**	**1.1655**	**5.5217**	**0.0000**	**5,027.8407**	**5,027.8407**	**1.1968**	**0.1878**	**5,110.9587**

Oyster Cove - Sonoma-San Francisco County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	54.03	0.00	49.55	55.50	0.00	47.53	0.00	0.00	0.00	0.00	0.00	0.00

Oyster Cove - Sonoma-San Francisco County, Summer

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.2399	0.7264	24.3989	0.0466		2.2691	2.2691		2.2691	2.2691	321.4452	508.7860	830.2312	1.5309	8.9700e-003	871.1758
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.9858	2.1810	15.3760	0.0299	3.0021	0.0276	3.0296	0.8018	0.0258	0.8276		3,094.8128	3,094.8128	0.2068	0.1558	3,146.4119
Total	**7.2256**	**2.9074**	**39.7750**	**0.0765**	**3.0021**	**2.2967**	**5.2988**	**0.8018**	**2.2950**	**3.0967**	**321.4452**	**3,603.5988**	**3,925.0440**	**1.7376**	**0.1648**	**4,017.5877**

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	5.2399	0.7264	24.3989	0.0466		2.2691	2.2691		2.2691	2.2691	321.4452	508.7860	830.2312	1.5309	8.9700e-003	871.1758
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.9858	2.1810	15.3760	0.0299	3.0021	0.0276	3.0296	0.8018	0.0258	0.8276		3,094.8128	3,094.8128	0.2068	0.1558	3,146.4119
Total	**7.2256**	**2.9074**	**39.7750**	**0.0765**	**3.0021**	**2.2967**	**5.2988**	**0.8018**	**2.2950**	**3.0967**	**321.4452**	**3,603.5988**	**3,925.0440**	**1.7376**	**0.1648**	**4,017.5877**

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/2/2023	2/2/2023	5	24	
2	Site Preparation	Site Preparation	2/3/2023	3/3/2023	5	21	
3	Grading	Grading	3/6/2023	9/6/2023	5	133	
4	Building Construction	Building Construction	9/7/2023	5/1/2024	5	170	
5	Paving	Paving	5/2/2024	12/31/2024	5	174	
6	Architectural Coating	Architectural Coating	9/2/2024	12/31/2024	5	87	

Acres of Grading (Site Preparation Phase): 31.5

Acres of Grading (Grading Phase): 133

Acres of Paving: 1.34

Residential Indoor: 267,300; Residential Outdoor: 89,100; Non-Residential Indoor: 2,250; Non-Residential Outdoor: 750; Striped Parking Area: 3,502 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

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

Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	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	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
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
Demolition	6	15.00	0.00	417.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	1,938.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	120.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	24.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Oyster Cove - Sonoma-San Francisco County, Summer

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

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.7636	0.0000	3.7636	0.5698	0.0000	0.5698			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**3.7636**	**0.9975**	**4.7611**	**0.5698**	**0.9280**	**1.4978**		**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

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

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0378	2.4531	0.5499	0.0108	0.3008	0.0176	0.3184	0.0822	0.0168	0.0990		1,168.3874	1,168.3874	0.0334	0.1847	1,224.2479
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0553	0.0324	0.4398	1.1000e-003	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0334		112.4693	112.4693	3.5500e-003	3.1400e-003	113.4926
Total	**0.0931**	**2.4855**	**0.9897**	**0.0119**	**0.4240**	**0.0183**	**0.4423**	**0.1149**	**0.0175**	**0.1324**		**1,280.8567**	**1,280.8567**	**0.0369**	**0.1878**	**1,337.7404**

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					1.6089	0.0000	1.6089	0.2436	0.0000	0.2436			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**1.6089**	**0.9975**	**2.6065**	**0.2436**	**0.9280**	**1.1716**	**0.0000**	**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

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

3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0378	2.4531	0.5499	0.0108	0.2870	0.0176	0.3046	0.0788	0.0168	0.0956		1,168.3874	1,168.3874	0.0334	0.1847	1,224.2479
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0553	0.0324	0.4398	1.1000e-003	0.1168	7.2000e-004	0.1175	0.0311	6.6000e-004	0.0318		112.4693	112.4693	3.5500e-003	3.1400e-003	113.4926
Total	**0.0931**	**2.4855**	**0.9897**	**0.0119**	**0.4038**	**0.0183**	**0.4221**	**0.1099**	**0.0175**	**0.1274**		**1,280.8567**	**1,280.8567**	**0.0369**	**0.1878**	**1,337.7404**

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Oyster Cove - Sonoma-San Francisco County, Summer

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

3.3 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0664	0.0389	0.5278	1.3200e-003	0.1479	8.6000e-004	0.1487	0.0392	8.0000e-004	0.0400		134.9631	134.9631	4.2600e-003	3.7600e-003	136.1911
Total	**0.0664**	**0.0389**	**0.5278**	**1.3200e-003**	**0.1479**	**8.6000e-004**	**0.1487**	**0.0392**	**8.0000e-004**	**0.0400**		**134.9631**	**134.9631**	**4.2600e-003**	**3.7600e-003**	**136.1911**

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					8.4034	0.0000	8.4034	4.3188	0.0000	4.3188			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**8.4034**	**1.2660**	**9.6694**	**4.3188**	**1.1647**	**5.4835**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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

3.3 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0664	0.0389	0.5278	1.3200e-003	0.1402	8.6000e-004	0.1410	0.0373	8.0000e-004	0.0381		134.9631	134.9631	4.2600e-003	3.7600e-003	136.1911
Total	**0.0664**	**0.0389**	**0.5278**	**1.3200e-003**	**0.1402**	**8.6000e-004**	**0.1410**	**0.0373**	**8.0000e-004**	**0.0381**		**134.9631**	**134.9631**	**4.2600e-003**	**3.7600e-003**	**136.1911**

3.4 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0958	0.0000	7.0958	3.4267	0.0000	3.4267			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.0958**	**0.7749**	**7.8707**	**3.4267**	**0.7129**	**4.1397**		**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

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

3.4 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0317	2.0572	0.4612	9.0400e-003	0.2523	0.0148	0.2670	0.0689	0.0141	0.0830		979.8604	979.8604	0.0280	0.1549	1,026.7074
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0553	0.0324	0.4398	1.1000e-003	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0334		112.4693	112.4693	3.5500e-003	3.1400e-003	113.4926
Total	**0.0870**	**2.0897**	**0.9010**	**0.0101**	**0.3755**	**0.0155**	**0.3910**	**0.1016**	**0.0148**	**0.1164**		**1,092.3296**	**1,092.3296**	**0.0315**	**0.1580**	**1,140.1999**

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					3.0334	0.0000	3.0334	1.4649	0.0000	1.4649			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129	0.0000	2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**3.0334**	**0.7749**	**3.8084**	**1.4649**	**0.7129**	**2.1779**	**0.0000**	**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

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

3.4 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0317	2.0572	0.4612	9.0400e-003	0.2407	0.0148	0.2555	0.0661	0.0141	0.0802		979.8604	979.8604	0.0280	0.1549	1,026.7074
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0553	0.0324	0.4398	1.1000e-003	0.1168	7.2000e-004	0.1175	0.0311	6.6000e-004	0.0318		112.4693	112.4693	3.5500e-003	3.1400e-003	113.4926
Total	**0.0870**	**2.0897**	**0.9010**	**0.0101**	**0.3575**	**0.0155**	**0.3730**	**0.0972**	**0.0148**	**0.1120**		**1,092.3296**	**1,092.3296**	**0.0315**	**0.1580**	**1,140.1999**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Oyster Cove - Sonoma-San Francisco County, Summer

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

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0265	1.1034	0.3159	4.8700e-003	0.1618	6.0700e-003	0.1678	0.0465	5.8100e-003	0.0523		521.5528	521.5528	9.5000e-003	0.0789	545.2912
Worker	0.4425	0.2593	3.5187	8.7900e-003	0.9858	5.7600e-003	0.9915	0.2615	5.3100e-003	0.2668		899.7541	899.7541	0.0284	0.0251	907.9404
Total	**0.4690**	**1.3626**	**3.8346**	**0.0137**	**1.1475**	**0.0118**	**1.1594**	**0.3080**	**0.0111**	**0.3191**		**1,421.3069**	**1,421.3069**	**0.0379**	**0.1040**	**1,453.2316**

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Oyster Cove - Sonoma-San Francisco County, Summer

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

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0265	1.1034	0.3159	4.8700e-003	0.1548	6.0700e-003	0.1609	0.0448	5.8100e-003	0.0506		521.5528	521.5528	9.5000e-003	0.0789	545.2912
Worker	0.4425	0.2593	3.5187	8.7900e-003	0.9344	5.7600e-003	0.9401	0.2489	5.3100e-003	0.2542		899.7541	899.7541	0.0284	0.0251	907.9404
Total	**0.4690**	**1.3626**	**3.8346**	**0.0137**	**1.0892**	**0.0118**	**1.1010**	**0.2937**	**0.0111**	**0.3048**		**1,421.3069**	**1,421.3069**	**0.0379**	**0.1040**	**1,453.2316**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0254	1.0935	0.3061	4.7900e-003	0.1618	6.0400e-003	0.1678	0.0465	5.7700e-003	0.0523		513.0355	513.0355	9.6900e-003	0.0776	536.3940
Worker	0.4110	0.2299	3.2370	8.5100e-003	0.9858	5.4300e-003	0.9912	0.2615	5.0000e-003	0.2665		877.4574	877.4574	0.0255	0.0232	885.0060
Total	**0.4363**	**1.3234**	**3.5431**	**0.0133**	**1.1475**	**0.0115**	**1.1590**	**0.3080**	**0.0108**	**0.3188**		**1,390.4929**	**1,390.4929**	**0.0352**	**0.1008**	**1,421.4000**

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0254	1.0935	0.3061	4.7900e-003	0.1548	6.0400e-003	0.1608	0.0448	5.7700e-003	0.0506		513.0355	513.0355	9.6900e-003	0.0776	536.3940
Worker	0.4110	0.2299	3.2370	8.5100e-003	0.9344	5.4300e-003	0.9398	0.2489	5.0000e-003	0.2539		877.4574	877.4574	0.0255	0.0232	885.0060
Total	**0.4363**	**1.3234**	**3.5431**	**0.0133**	**1.0892**	**0.0115**	**1.1006**	**0.2937**	**0.0108**	**0.3044**		**1,390.4929**	**1,390.4929**	**0.0352**	**0.1008**	**1,421.4000**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0202					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0083**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

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

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0514	0.0287	0.4046	1.0600e-003	0.1232	6.8000e-004	0.1239	0.0327	6.3000e-004	0.0333		109.6822	109.6822	3.1900e-003	2.9000e-003	110.6258
Total	**0.0514**	**0.0287**	**0.4046**	**1.0600e-003**	**0.1232**	**6.8000e-004**	**0.1239**	**0.0327**	**6.3000e-004**	**0.0333**		**109.6822**	**109.6822**	**3.1900e-003**	**2.9000e-003**	**110.6258**

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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0202					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0083**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

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

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0514	0.0287	0.4046	1.0600e-003	0.1168	6.8000e-004	0.1175	0.0311	6.3000e-004	0.0317		109.6822	109.6822	3.1900e-003	2.9000e-003	110.6258
Total	**0.0514**	**0.0287**	**0.4046**	**1.0600e-003**	**0.1168**	**6.8000e-004**	**0.1175**	**0.0311**	**6.3000e-004**	**0.0317**		**109.6822**	**109.6822**	**3.1900e-003**	**2.9000e-003**	**110.6258**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	21.8206					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**22.0014**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

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

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0822	0.0460	0.6474	1.7000e-003	0.1972	1.0900e-003	0.1982	0.0523	1.0000e-003	0.0533		175.4915	175.4915	5.1100e-003	4.6400e-003	177.0012
Total	**0.0822**	**0.0460**	**0.6474**	**1.7000e-003**	**0.1972**	**1.0900e-003**	**0.1982**	**0.0523**	**1.0000e-003**	**0.0533**		**175.4915**	**175.4915**	**5.1100e-003**	**4.6400e-003**	**177.0012**

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	21.8206					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**22.0014**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0822	0.0460	0.6474	1.7000e-003	0.1869	1.0900e-003	0.1880	0.0498	1.0000e-003	0.0508		175.4915	175.4915	5.1100e-003	4.6400e-003	177.0012
Total	**0.0822**	**0.0460**	**0.6474**	**1.7000e-003**	**0.1869**	**1.0900e-003**	**0.1880**	**0.0498**	**1.0000e-003**	**0.0508**		**175.4915**	**175.4915**	**5.1100e-003**	**4.6400e-003**	**177.0012**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Oyster Cove - Sonoma-San Francisco County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.9858	2.1810	15.3760	0.0299	3.0021	0.0276	3.0296	0.8018	0.0258	0.8276		3,094.8128	3,094.8128	0.2068	0.1558	3,146.4119
Unmitigated	1.9858	2.1810	15.3760	0.0299	3.0021	0.0276	3.0296	0.8018	0.0258	0.8276		3,094.8128	3,094.8128	0.2068	0.1558	3,146.4119

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	33.60	33.60	33.60	77,603	77,603
Condo/Townhouse	524.60	524.60	524.60	1,211,620	1,211,620
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	74.45	74.45	74.45	130,525	130,525
Total	632.65	632.65	632.65	1,419,748	1,419,748

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
Apartments Low Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

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

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.536774	0.058783	0.173424	0.127345	0.036375	0.008877	0.014453	0.006568	0.001093	0.000297	0.030119	0.001546	0.004347
Condo/Townhouse	0.536774	0.058783	0.173424	0.127345	0.036375	0.008877	0.014453	0.006568	0.001093	0.000297	0.030119	0.001546	0.004347
Parking Lot	0.536774	0.058783	0.173424	0.127345	0.036375	0.008877	0.014453	0.006568	0.001093	0.000297	0.030119	0.001546	0.004347
Regional Shopping Center	0.536774	0.058783	0.173424	0.127345	0.036375	0.008877	0.014453	0.006568	0.001093	0.000297	0.030119	0.001546	0.004347

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

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

5.2 Energy by Land Use - NaturalGas

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					
Apartments Low Rise	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
Condo/Townhouse	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
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	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
Condo/Townhouse	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
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.2399	0.7264	24.3989	0.0466		2.2691	2.2691		2.2691	2.2691	321.4452	508.7860	830.2312	1.5309	8.9700e-003	871.1758
Unmitigated	5.2399	0.7264	24.3989	0.0466		2.2691	2.2691		2.2691	2.2691	321.4452	508.7860	830.2312	1.5309	8.9700e-003	871.1758

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	0.5201					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.8776					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.5149	0.6010	13.5131	0.0460		2.2088	2.2088		2.2088	2.2088	321.4452	489.1765	810.6217	1.5121	8.9700e-003	851.0959
Landscaping	0.3273	0.1254	10.8859	5.8000e-004		0.0603	0.0603		0.0603	0.0603		19.6095	19.6095	0.0188		20.0799
Total	**5.2399**	**0.7264**	**24.3989**	**0.0466**		**2.2691**	**2.2691**		**2.2691**	**2.2691**	**321.4452**	**508.7860**	**830.2312**	**1.5309**	**8.9700e-003**	**871.1758**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5201					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.8776					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.5149	0.6010	13.5131	0.0460		2.2088	2.2088		2.2088	2.2088	321.4452	489.1765	810.6217	1.5121	8.9700e-003	851.0959
Landscaping	0.3273	0.1254	10.8859	5.8000e-004		0.0603	0.0603		0.0603	0.0603		19.6095	19.6095	0.0188		20.0799
Total	**5.2399**	**0.7264**	**24.3989**	**0.0466**		**2.2691**	**2.2691**		**2.2691**	**2.2691**	**321.4452**	**508.7860**	**830.2312**	**1.5309**	**8.9700e-003**	**871.1758**

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

Oyster Cove - Sonoma-San Francisco County, Winter

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

Oyster Cove

Sonoma-San Francisco County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	1.34	Acre	1.34	58,370.40	0
Apartments Low Rise	10.00	Dwelling Unit	0.63	10,000.00	29
Condo/Townhouse	122.00	Dwelling Unit	7.63	122,000.00	349
Regional Shopping Center	1.50	1000sqft	0.03	1,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Apartment Low Rise = Live/Work units (ITE 220)

Construction Phase - Per construction assumptions

Demolition - 10,000 sf building material + 64,800 sf pavement

Grading -

Vehicle Trips - Per TA

Woodstoves - No wood burning appliances per BAAQMD

Construction Off-road Equipment Mitigation - per BAAQMD rule compliance

Waste Mitigation - Per AB 393

Oyster Cove - Sonoma-San Francisco County, Winter

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

Energy Use - No natural gas per city policy

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	87.00
tblConstructionPhase	NumDays	230.00	170.00
tblConstructionPhase	NumDays	20.00	24.00
tblConstructionPhase	NumDays	20.00	133.00
tblConstructionPhase	NumDays	20.00	174.00
tblConstructionPhase	NumDays	10.00	21.00
tblEnergyUse	NT24NG	3,155.00	0.00
tblEnergyUse	NT24NG	3,155.00	0.00
tblEnergyUse	T24E	77.89	2,568.89
tblEnergyUse	T24E	52.36	3,108.36
tblEnergyUse	T24E	2.46	172.31
tblEnergyUse	T24NG	6,712.79	0.00
tblEnergyUse	T24NG	14,104.62	0.00
tblEnergyUse	T24NG	2.34	0.00
tblFireplaces	NumberWood	1.70	0.00
tblFireplaces	NumberWood	20.74	0.00
tblGrading	MaterialExported	0.00	3,000.00
tblGrading	MaterialImported	0.00	12,500.00
tblVehicleTrips	ST_TR	8.14	3.36
tblVehicleTrips	ST_TR	8.14	4.30
tblVehicleTrips	ST_TR	46.12	49.63
tblVehicleTrips	SU_TR	6.28	3.36
tblVehicleTrips	SU_TR	6.28	4.30

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

tblVehicleTrips	SU_TR	21.10	49.63
tblVehicleTrips	WD_TR	7.32	3.36
tblVehicleTrips	WD_TR	7.32	4.30
tblVehicleTrips	WD_TR	37.75	49.63

2.0 Emissions Summary

Oyster Cove - Sonoma-San Francisco County, Winter

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.7285	27.5723	20.6196	0.0507	19.8049	1.2669	21.0718	10.1417	1.1655	11.3072	0.0000	5,021.5150	5,021.5150	1.1973	0.1884	5,104.8334
2024	23.1490	14.8805	19.6088	0.0397	1.1475	0.6248	1.7723	0.3080	0.5877	0.8957	0.0000	3,891.2370	3,891.2370	0.7392	0.1045	3,938.4388
Maximum	**23.1490**	**27.5723**	**20.6196**	**0.0507**	**19.8049**	**1.2669**	**21.0718**	**10.1417**	**1.1655**	**11.3072**	**0.0000**	**5,021.5150**	**5,021.5150**	**1.1973**	**0.1884**	**5,104.8334**

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					
2023	2.7285	27.5723	20.6196	0.0507	8.5435	1.2669	9.8104	4.3561	1.1655	5.5217	0.0000	5,021.5150	5,021.5150	1.1973	0.1884	5,104.8334
2024	23.1490	14.8805	19.6088	0.0397	1.0892	0.6248	1.7140	0.2937	0.5877	0.8814	0.0000	3,891.2370	3,891.2370	0.7392	0.1045	3,938.4388
Maximum	**23.1490**	**27.5723**	**20.6196**	**0.0507**	**8.5435**	**1.2669**	**9.8104**	**4.3561**	**1.1655**	**5.5217**	**0.0000**	**5,021.5150**	**5,021.5150**	**1.1973**	**0.1884**	**5,104.8334**

Oyster Cove - Sonoma-San Francisco County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	54.03	0.00	49.55	55.50	0.00	47.53	0.00	0.00	0.00	0.00	0.00	0.00

Oyster Cove - Sonoma-San Francisco County, Winter

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.2399	0.7264	24.3989	0.0466		2.2691	2.2691		2.2691	2.2691	321.4452	508.7860	830.2312	1.5309	8.9700e-003	871.1758
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.8069	2.4717	16.6242	0.0285	3.0021	0.0276	3.0296	0.8018	0.0258	0.8276		2,949.9535	2,949.9535	0.2352	0.1701	3,006.5095
Total	**7.0468**	**3.1981**	**41.0231**	**0.0751**	**3.0021**	**2.2967**	**5.2988**	**0.8018**	**2.2950**	**3.0968**	**321.4452**	**3,458.7395**	**3,780.1847**	**1.7661**	**0.1790**	**3,877.6853**

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	5.2399	0.7264	24.3989	0.0466		2.2691	2.2691		2.2691	2.2691	321.4452	508.7860	830.2312	1.5309	8.9700e-003	871.1758
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.8069	2.4717	16.6242	0.0285	3.0021	0.0276	3.0296	0.8018	0.0258	0.8276		2,949.9535	2,949.9535	0.2352	0.1701	3,006.5095
Total	**7.0468**	**3.1981**	**41.0231**	**0.0751**	**3.0021**	**2.2967**	**5.2988**	**0.8018**	**2.2950**	**3.0968**	**321.4452**	**3,458.7395**	**3,780.1847**	**1.7661**	**0.1790**	**3,877.6853**

Oyster Cove - Sonoma-San Francisco County, Winter

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/2/2023	2/2/2023	5	24	
2	Site Preparation	Site Preparation	2/3/2023	3/3/2023	5	21	
3	Grading	Grading	3/6/2023	9/6/2023	5	133	
4	Building Construction	Building Construction	9/7/2023	5/1/2024	5	170	
5	Paving	Paving	5/2/2024	12/31/2024	5	174	
6	Architectural Coating	Architectural Coating	9/2/2024	12/31/2024	5	87	

Acres of Grading (Site Preparation Phase): 31.5

Acres of Grading (Grading Phase): 133

Acres of Paving: 1.34

Residential Indoor: 267,300; Residential Outdoor: 89,100; Non-Residential Indoor: 2,250; Non-Residential Outdoor: 750; Striped Parking Area: 3,502 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

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

Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	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	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
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
Demolition	6	15.00	0.00	417.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	1,938.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	120.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	24.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Oyster Cove - Sonoma-San Francisco County, Winter

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

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.7636	0.0000	3.7636	0.5698	0.0000	0.5698			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**3.7636**	**0.9975**	**4.7611**	**0.5698**	**0.9280**	**1.4978**		**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

Oyster Cove - Sonoma-San Francisco County, Winter

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

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0359	2.5860	0.5527	0.0108	0.3008	0.0176	0.3184	0.0822	0.0169	0.0991		1,169.1959	1,169.1959	0.0333	0.1848	1,225.1022
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0575	0.0401	0.4235	1.0300e-003	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0334		105.3351	105.3351	3.9900e-003	3.6200e-003	106.5130
Total	**0.0934**	**2.6261**	**0.9762**	**0.0118**	**0.4240**	**0.0184**	**0.4424**	**0.1149**	**0.0175**	**0.1324**		**1,274.5310**	**1,274.5310**	**0.0372**	**0.1884**	**1,331.6151**

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					1.6089	0.0000	1.6089	0.2436	0.0000	0.2436			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**1.6089**	**0.9975**	**2.6065**	**0.2436**	**0.9280**	**1.1716**	**0.0000**	**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

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

3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0359	2.5860	0.5527	0.0108	0.2870	0.0176	0.3047	0.0788	0.0169	0.0957		1,169.1959	1,169.1959	0.0333	0.1848	1,225.1022
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0575	0.0401	0.4235	1.0300e-003	0.1168	7.2000e-004	0.1175	0.0311	6.6000e-004	0.0318		105.3351	105.3351	3.9900e-003	3.6200e-003	106.5130
Total	**0.0934**	**2.6261**	**0.9762**	**0.0118**	**0.4038**	**0.0184**	**0.4222**	**0.1099**	**0.0175**	**0.1274**		**1,274.5310**	**1,274.5310**	**0.0372**	**0.1884**	**1,331.6151**

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Oyster Cove - Sonoma-San Francisco County, Winter

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

3.3 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0690	0.0481	0.5082	1.2300e-003	0.1479	8.6000e-004	0.1487	0.0392	8.0000e-004	0.0400		126.4021	126.4021	4.7900e-003	4.3400e-003	127.8155
Total	**0.0690**	**0.0481**	**0.5082**	**1.2300e-003**	**0.1479**	**8.6000e-004**	**0.1487**	**0.0392**	**8.0000e-004**	**0.0400**		**126.4021**	**126.4021**	**4.7900e-003**	**4.3400e-003**	**127.8155**

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					8.4034	0.0000	8.4034	4.3188	0.0000	4.3188			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**8.4034**	**1.2660**	**9.6694**	**4.3188**	**1.1647**	**5.4835**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Oyster Cove - Sonoma-San Francisco County, Winter

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

3.3 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0690	0.0481	0.5082	1.2300e-003	0.1402	8.6000e-004	0.1410	0.0373	8.0000e-004	0.0381		126.4021	126.4021	4.7900e-003	4.3400e-003	127.8155
Total	**0.0690**	**0.0481**	**0.5082**	**1.2300e-003**	**0.1402**	**8.6000e-004**	**0.1410**	**0.0373**	**8.0000e-004**	**0.0381**		**126.4021**	**126.4021**	**4.7900e-003**	**4.3400e-003**	**127.8155**

3.4 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0958	0.0000	7.0958	3.4267	0.0000	3.4267			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.0958**	**0.7749**	**7.8707**	**3.4267**	**0.7129**	**4.1397**		**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

Oyster Cove - Sonoma-San Francisco County, Winter

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

3.4 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0301	2.1687	0.4635	9.0500e-003	0.2523	0.0148	0.2671	0.0689	0.0142	0.0831		980.5384	980.5384	0.0279	0.1550	1,027.4238
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0575	0.0401	0.4235	1.0300e-003	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0334		105.3351	105.3351	3.9900e-003	3.6200e-003	106.5130
Total	**0.0876**	**2.2088**	**0.8870**	**0.0101**	**0.3755**	**0.0155**	**0.3910**	**0.1016**	**0.0148**	**0.1164**		**1,085.8735**	**1,085.8735**	**0.0319**	**0.1586**	**1,133.9368**

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					3.0334	0.0000	3.0334	1.4649	0.0000	1.4649			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129	0.0000	2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**3.0334**	**0.7749**	**3.8084**	**1.4649**	**0.7129**	**2.1779**	**0.0000**	**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

Oyster Cove - Sonoma-San Francisco County, Winter

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

3.4 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0301	2.1687	0.4635	9.0500e-003	0.2407	0.0148	0.2555	0.0661	0.0142	0.0802		980.5384	980.5384	0.0279	0.1550	1,027.4238
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0575	0.0401	0.4235	1.0300e-003	0.1168	7.2000e-004	0.1175	0.0311	6.6000e-004	0.0318		105.3351	105.3351	3.9900e-003	3.6200e-003	106.5130
Total	**0.0876**	**2.2088**	**0.8870**	**0.0101**	**0.3575**	**0.0155**	**0.3730**	**0.0972**	**0.0148**	**0.1120**		**1,085.8735**	**1,085.8735**	**0.0319**	**0.1586**	**1,133.9368**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Oyster Cove - Sonoma-San Francisco County, Winter

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

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0260	1.1629	0.3244	4.8800e-003	0.1618	6.1000e-003	0.1679	0.0465	5.8400e-003	0.0524		522.1231	522.1231	9.4400e-003	0.0790	545.9099
Worker	0.4602	0.3206	3.3882	8.2300e-003	0.9858	5.7600e-003	0.9915	0.2615	5.3100e-003	0.2668		842.6807	842.6807	0.0319	0.0289	852.1036
Total	**0.4862**	**1.4835**	**3.7126**	**0.0131**	**1.1475**	**0.0119**	**1.1594**	**0.3080**	**0.0112**	**0.3191**		**1,364.8038**	**1,364.8038**	**0.0414**	**0.1080**	**1,398.0135**

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Oyster Cove - Sonoma-San Francisco County, Winter

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

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0260	1.1629	0.3244	4.8800e-003	0.1548	6.1000e-003	0.1609	0.0448	5.8400e-003	0.0506		522.1231	522.1231	9.4400e-003	0.0790	545.9099
Worker	0.4602	0.3206	3.3882	8.2300e-003	0.9344	5.7600e-003	0.9401	0.2489	5.3100e-003	0.2542		842.6807	842.6807	0.0319	0.0289	852.1036
Total	**0.4862**	**1.4835**	**3.7126**	**0.0131**	**1.0892**	**0.0119**	**1.1010**	**0.2937**	**0.0112**	**0.3048**		**1,364.8038**	**1,364.8038**	**0.0414**	**0.1080**	**1,398.0135**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Oyster Cove - Sonoma-San Francisco County, Winter

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

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0248	1.1526	0.3147	4.7900e-003	0.1618	6.0700e-003	0.1678	0.0465	5.8000e-003	0.0523		513.6194	513.6194	9.6200e-003	0.0777	537.0241
Worker	0.4285	0.2842	3.1272	7.9700e-003	0.9858	5.4300e-003	0.9912	0.2615	5.0000e-003	0.2665		821.9187	821.9187	0.0288	0.0267	830.6070
Total	**0.4533**	**1.4368**	**3.4420**	**0.0128**	**1.1475**	**0.0115**	**1.1590**	**0.3080**	**0.0108**	**0.3188**		**1,335.5381**	**1,335.5381**	**0.0384**	**0.1045**	**1,367.6311**

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Oyster Cove - Sonoma-San Francisco County, Winter

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

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0248	1.1526	0.3147	4.7900e-003	0.1548	6.0700e-003	0.1609	0.0448	5.8000e-003	0.0506		513.6194	513.6194	9.6200e-003	0.0777	537.0241
Worker	0.4285	0.2842	3.1272	7.9700e-003	0.9344	5.4300e-003	0.9398	0.2489	5.0000e-003	0.2539		821.9187	821.9187	0.0288	0.0267	830.6070
Total	**0.4533**	**1.4368**	**3.4420**	**0.0128**	**1.0892**	**0.0115**	**1.1007**	**0.2937**	**0.0108**	**0.3045**		**1,335.5381**	**1,335.5381**	**0.0384**	**0.1045**	**1,367.6311**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0202					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0083**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

Oyster Cove - Sonoma-San Francisco County, Winter

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

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0536	0.0355	0.3909	1.0000e-003	0.1232	6.8000e-004	0.1239	0.0327	6.3000e-004	0.0333		102.7398	102.7398	3.6000e-003	3.3400e-003	103.8259
Total	**0.0536**	**0.0355**	**0.3909**	**1.0000e-003**	**0.1232**	**6.8000e-004**	**0.1239**	**0.0327**	**6.3000e-004**	**0.0333**		**102.7398**	**102.7398**	**3.6000e-003**	**3.3400e-003**	**103.8259**

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	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0202					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0083**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

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

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0536	0.0355	0.3909	1.0000e-003	0.1168	6.8000e-004	0.1175	0.0311	6.3000e-004	0.0317		102.7398	102.7398	3.6000e-003	3.3400e-003	103.8259
Total	**0.0536**	**0.0355**	**0.3909**	**1.0000e-003**	**0.1168**	**6.8000e-004**	**0.1175**	**0.0311**	**6.3000e-004**	**0.0317**		**102.7398**	**102.7398**	**3.6000e-003**	**3.3400e-003**	**103.8259**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	21.8206					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**22.0014**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

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

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0857	0.0568	0.6255	1.5900e-003	0.1972	1.0900e-003	0.1982	0.0523	1.0000e-003	0.0533		164.3837	164.3837	5.7600e-003	5.3500e-003	166.1214
Total	**0.0857**	**0.0568**	**0.6255**	**1.5900e-003**	**0.1972**	**1.0900e-003**	**0.1982**	**0.0523**	**1.0000e-003**	**0.0533**		**164.3837**	**164.3837**	**5.7600e-003**	**5.3500e-003**	**166.1214**

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	21.8206					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**22.0014**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0857	0.0568	0.6255	1.5900e-003	0.1869	1.0900e-003	0.1880	0.0498	1.0000e-003	0.0508		164.3837	164.3837	5.7600e-003	5.3500e-003	166.1214
Total	**0.0857**	**0.0568**	**0.6255**	**1.5900e-003**	**0.1869**	**1.0900e-003**	**0.1880**	**0.0498**	**1.0000e-003**	**0.0508**		**164.3837**	**164.3837**	**5.7600e-003**	**5.3500e-003**	**166.1214**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Oyster Cove - Sonoma-San Francisco County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.8069	2.4717	16.6242	0.0285	3.0021	0.0276	3.0296	0.8018	0.0258	0.8276		2,949.9535	2,949.9535	0.2352	0.1701	3,006.5095
Unmitigated	1.8069	2.4717	16.6242	0.0285	3.0021	0.0276	3.0296	0.8018	0.0258	0.8276		2,949.9535	2,949.9535	0.2352	0.1701	3,006.5095

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	33.60	33.60	33.60	77,603	77,603
Condo/Townhouse	524.60	524.60	524.60	1,211,620	1,211,620
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	74.45	74.45	74.45	130,525	130,525
Total	632.65	632.65	632.65	1,419,748	1,419,748

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
Apartments Low Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

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

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.536774	0.058783	0.173424	0.127345	0.036375	0.008877	0.014453	0.006568	0.001093	0.000297	0.030119	0.001546	0.004347
Condo/Townhouse	0.536774	0.058783	0.173424	0.127345	0.036375	0.008877	0.014453	0.006568	0.001093	0.000297	0.030119	0.001546	0.004347
Parking Lot	0.536774	0.058783	0.173424	0.127345	0.036375	0.008877	0.014453	0.006568	0.001093	0.000297	0.030119	0.001546	0.004347
Regional Shopping Center	0.536774	0.058783	0.173424	0.127345	0.036375	0.008877	0.014453	0.006568	0.001093	0.000297	0.030119	0.001546	0.004347

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

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

5.2 Energy by Land Use - NaturalGas

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					
Apartments Low Rise	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
Condo/Townhouse	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
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	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
Condo/Townhouse	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
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.2399	0.7264	24.3989	0.0466		2.2691	2.2691		2.2691	2.2691	321.4452	508.7860	830.2312	1.5309	8.9700e-003	871.1758
Unmitigated	5.2399	0.7264	24.3989	0.0466		2.2691	2.2691		2.2691	2.2691	321.4452	508.7860	830.2312	1.5309	8.9700e-003	871.1758

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	0.5201					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.8776					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.5149	0.6010	13.5131	0.0460		2.2088	2.2088		2.2088	2.2088	321.4452	489.1765	810.6217	1.5121	8.9700e-003	851.0959
Landscaping	0.3273	0.1254	10.8859	5.8000e-004		0.0603	0.0603		0.0603	0.0603		19.6095	19.6095	0.0188		20.0799
Total	**5.2399**	**0.7264**	**24.3989**	**0.0466**		**2.2691**	**2.2691**		**2.2691**	**2.2691**	**321.4452**	**508.7860**	**830.2312**	**1.5309**	**8.9700e-003**	**871.1758**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5201					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.8776					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.5149	0.6010	13.5131	0.0460		2.2088	2.2088		2.2088	2.2088	321.4452	489.1765	810.6217	1.5121	8.9700e-003	851.0959
Landscaping	0.3273	0.1254	10.8859	5.8000e-004		0.0603	0.0603		0.0603	0.0603		19.6095	19.6095	0.0188		20.0799
Total	**5.2399**	**0.7264**	**24.3989**	**0.0466**		**2.2691**	**2.2691**		**2.2691**	**2.2691**	**321.4452**	**508.7860**	**830.2312**	**1.5309**	**8.9700e-003**	**871.1758**

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

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