APPENDIX A

AIR QUALITY AND GREENHOUSE GAS EMISSIONS TECHNICAL REPORTS

Air Quality and Greenhouse Gas Modeling

1. Air Quality

Ambient air quality standards (AAQS) have been adopted at State and federal levels for criteria air pollutants. In addition, both the State and federal government regulate the release of toxic air contaminants (TACs). The project site is in the San Francisco Bay Area Air Basin (SFBAAB) and is subject to the rules and regulations imposed by the Bay Area Air Quality Management District (BAAQMD), as well as the California AAQS adopted by the California Air Resources Board (CARB) and national AAQS adopted by the United States Environmental Protection Agency (EPA). Federal, State, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below. The discussion also identifies the natural factors in the air basin that affect air pollution.

1.3 REGULATORY FRAMEWORK

1.3.1 Ambient Air Quality Standards

The Clean Air Act (CAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS, based on even greater health and welfare concerns.

These National AAQS and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 1, these pollutants include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Ozone (O_3)[3]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)[4]	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[5]	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Vinyl Chloride	24 hours	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: California Air Resources Board (CARB). 2016, October 1. Ambient Air Quality Standards. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.
Notes: ppm: parts per million; µg/m^3: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
1 California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2 National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
4 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
5 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- AB 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building and Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

1.3.2 Air Pollutants of Concern

A substance in the air that can cause harm to humans and the environment is known as an air pollutant. Pollutants can be in the form of solid particles, liquid droplets, or gases. In addition, they may be natural or man-made.

1.3.2.1 CRITERIA AIR POLLUTANTS

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. Air pollutants are categorized as primary or secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. VOC and oxides of nitrogen (NO_x) are air pollutant precursors that form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and NO_2 are the principal secondary pollutants. A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

Carbon Monoxide (CO) is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen-carrying capacity. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death. [1]

Volatile Organic Compounds (VOC) are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as O_3. There are no AAQS established for ROGs. However, because they contribute to the formation of O_3, the Air District has established a significance threshold for this pollutant.

Nitrogen Oxides (NO_x) are a by-product of fuel combustion and contribute to the formation of O_3, PM_{10}, and $PM_{2.5}$. The two major components of NO_x are nitric oxide (NO) and NO_2. The principal component of NO_x produced by combustion is NO, but NO reacts with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure.[2] NO_2 acts as an acute irritant and in equal concentrations is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 parts per million (ppm). [3]

Sulfur Dioxide (SO_2) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When SO_2 forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_x). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. [4]

Suspended Particulate Matter (PM_{10} and $PM_{2.5}$) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. In the San Francisco Bay Area Air Basin (SFBAAB or Air Basin), most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Two forms of fine particulates are now recognized and regulated. Inhalable coarse

1 Bay Area Air Quality Management District, 2017, Revised California Environmental Quality Act Air Quality Guidelines.
2 Bay Area Air Quality Management District, 2017, Revised California Environmental Quality Act Air Quality Guidelines.
3 Bay Area Air Quality Management District, 2017, Revised California Environmental Quality Act Air Quality Guidelines.
4 Bay Area Air Quality Management District, 2017, Revised California Environmental Quality Act Air Quality Guidelines.

particles, or PM_{10}, include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., 2.5 millionths of a meter or 0.0001 inch). Diesel particulate matter (DPM) is also classified a carcinogen.

Extended exposure to particulate matter can increase the risk of chronic respiratory disease. PM_{10} bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. The EPA scientific review concluded that $PM_{2.5}$ penetrates even more deeply into the lungs, and this is more likely to contribute to health effects—at concentrations well below current PM_{10} standards. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing). Motor vehicles are currently responsible for about half of particulates in the SFBAAB. Wood burning in fireplaces and stoves is another large source of fine particulates. [5]

Ozone (O_3) is commonly referred to as "smog" and is a gas that is formed when ROGs and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions to the formation of this pollutant. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. O_3 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. O_3 can also damage plants and trees and materials such as rubber and fabrics.[6]

Lead (Pb) is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phasing out of leaded gasoline, metal processing is currently the primary source of lead emissions. 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. Because emissions of lead are found only in projects that are permitted by the Air District, lead is not an air quality of concern for the proposed project.

1.3.2.2 TOXIC AIR CONTAMINANTS

The public's exposure to air pollutants classified as toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant (HAP) pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code §7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as

[5] Bay Area Air Quality Management District, 2017, Revised California Environmental Quality Act Air Quality Guidelines.
[6] Bay Area Air Quality Management District, 2017. Revised California Environmental Quality Act Air Quality Guidelines.

a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs.[7] Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered 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.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- 13 CCR Section 2477 and Article 8, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

[7] California Air Resources Board (CARB). 1999. California Air Resources Board (CARB). Final Staff Report: Update to the Toxic Air Contaminant List. https://ww3.arb.ca.gov/toxics/id/finalstaffreport.htm.

Community Risk

In addition, to reduce exposure to TACs, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective*[8] to provide guidance regarding the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources. CARB's recommendations on the siting of new sensitive land uses were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity to air pollution sources substantially increases exposure and the potential for adverse health effects. There are three carcinogenic toxic air contaminants that constitute the majority of the known health risks from motor vehicle traffic, DPM from trucks, and benzene and 1,3-butadiene from passenger vehicles. CARB recommendations are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

1.3.3 Bay Area Air Quality Management District

The Air District is the agency responsible for assuring that the National and California AAQS are attained and maintained in the Air Basin. Air quality conditions in the Air Basin have improved significantly since the Air District was created in 1955. The Air District prepares air quality management plans (AQMP) to attain ambient air quality standards in the Air Basin. The Air District prepares ozone attainment plans for the National O3 standard and clean air plans for the California O_3 standard. These air quality management plans are prepared in coordination with Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC). The Air District adopted the 2017 Clean Air Plan, Spare the Air, Cool the Climate (2017 Clean Air Plan) on April 19, 2017, making it the most recent adopted comprehensive plan. The 2017 Clean Air Plan incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools.

1.3.3.1 BAY AREA AIR QUALITY MANAGEMENT DISTRICT 2017 CLEAN AIR PLAN

2017 Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area

The 2017 Clean Air Plan serves as an update to the adopted Bay Area 2010 Clean Air Plan and continues in providing the framework for SFBAAB to achieve attainment of the California and National AAQS. The 2017 Clean Air Plan updates the Bay Area's ozone plan, which is based on the "all feasible measures" approach to meet the requirements of the California Clean Air Act. Additionally, it sets a goal of reducing health risk impacts to local communities by 20 percent by 2020. Furthermore, the 2017 Clean Air Plan also lays the groundwork for reducing GHG emissions in the Bay Area to meet the state's 2030 GHG reduction target and

[8] California Air Resources Board (CARB). 2005, April. Air Quality and Land Use Handbook: A Community Health Perspective. https://www.arb.ca.gov/ch/handbook.pdf.

2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following [9]:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.

A comprehensive multipollutant control strategy has been developed to be implemented in the next three to five years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, TACs, and GHG from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources; 2) transportation; 3) energy; 4) agriculture; 5) natural and working lands; 6) waste management; 7) water; and 8) super-GHG pollutants. Overall, the proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Increase efficiency of the energy and transportation systems.
- Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
- Make the electricity supply carbon-free.
- Electrify the transportation and building sectors.

1.3.3.2 BAAQMD'S COMMUNITY AIR RISK EVALUATION PROGRAM (CARE)

The BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area. Based on findings of the latest report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed 4 percent of the cancer risk-weighted emissions, and benzene contributed 3 percent. Collectively, five compounds—DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk–weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). A 75 percent reduction in DPM was predicted between 2005 and 2015 when the inventory

[9] Bay Area Air Quality Management District. 2017, April 19. Final 2017 Clean Air Plan, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. http://www.baaqmd.gov/plans-and-climate/air-quality-plans/plans-under- development.

accounted for CARB's diesel regulations. Overall, cancer risk from TACs dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for State diesel regulations and other reductions.[10]

Modeled cancer risks from TAC in 2005 were highest near sources of DPM: near core urban areas, along major roadways and freeways, and near maritime shipping terminals. The highest modeled risks were found east of San Francisco, near West Oakland, and the Maritime Port of Oakland. BAAQMD has identified seven impacted communities in the Bay Area:

- Western Contra Costa County and the cities of Richmond and San Pablo
- Western Alameda County along the Interstate 880 (I-880) corridor and the cities of Berkeley, Alameda, Oakland, and Hayward
- San Jose
- Eastern side of San Francisco
- Concord
- Vallejo
- Pittsburgh and Antioch

The project site is not within a CARE-program impacted community. The closest CARE community to the project site is the Eastern side of San Francisco impacted community.

The major contributor to acute and chronic non-cancer health effects in the Air Basin is acrolein (C_3H_4O). Major sources of acrolein are on-road mobile sources and aircraft, and areas with high acrolein emissions are near freeways and commercial and military airports.[11] Currently CARB does not have certified emission factors or an analytical test method for acrolein. Since the appropriate tools needed to implement and enforce acrolein emission limits are not available, BAAQMD does not conduct health risk screening analysis for acrolein emissions.[12]

1.3.3.3 AB 617 COMMUNITY ACTION PLANS

In July of 2017, Governor Brown signed Assembly Bill 617 to develop a new community focused program to more effectively reduce exposure to air pollution and preserve public health in environmental justice communities. The bill directs CARB and all local air districts to take measures to protect communities disproportionally impacted by air pollution through monitoring and implementing air pollution control strategies.

On September 27, 2018, CARB approved BAAQMD's recommended communities for monitoring and emission reduction planning. The state approved communities for year 1 of the program, as well as communities that would move forward over the next five years. Bay Area recommendations included all the Community Air Risk Evaluation (CARE) areas, as well as areas with large sources of air pollution (refineries,

[10] Bay Area Air Quality Management District. 2014. Improving Air Quality & Health in Bay Area Communities, Community Air Risk Program (CARE) Retrospective and Path Forward (2004–2013), April.

[11] Bay Area Air Quality Management District (BAAQMD), 2006. Community Air Risk Evaluation Program, Phase I Findings and Policy Recommendations Related to Toxic Air Contaminants in the San Francisco Bay Area.

[12] Bay Area Air Quality Management District (BAAQMD), 2010. Air Toxics NSR Program, Health Risk Screening Analysis Guidelines.

seaports, airports, etc.), areas identified via statewide screening tools as having pollution and/or health burden vulnerability, and areas with low life expectancy.[13]

- Year 1 Communities:
    - West Oakland. The West Oakland community was selected for BAAQMD's first Community Action Plan. In 2017, cancer risk in from sources in West Oakland (local sources) was 204 in a million. The primary sources of air pollution in West Oakland include heavy truck and cars, port and rail sources, large industries, and to a lesser extent other sources such as residential sources (i.e., woodburning). The majority (over 90 percent) of cancer risk is from diesel $PM_{2.5}$.[14]
        - Richmond: Richmond was selected for a community monitoring plan in year 1 of the AB 617 program. The Richmond area is in western Contra Costa County and includes most of the City of Richmond and portions of El Cerrito. It also includes communities just north and east of Richmond, such as San Pablo and several unincorporated communities, including North Richmond. The primary goals of the Richmond monitoring effort are to leverage historic and current monitoring studies, to better characterize the area's mix of sources, and to more fully understand the associated air quality and pollution impact. [15]
- Year 2-5 Communities:
    - East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, Tri-Valley, and Vallejo are slated for action in years 2-5 of the AB 617 program. [16]

1.3.3.4 REGULATION 7, ODOROUS SUBSTANCES

Sources of objectionable odors may occur within the City. BAAQMD's Regulation 7, Odorous Substances, places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property." Under BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance.

1.3.3.5 OTHER BAAQMD REGULATIONS

In addition to the plans and programs described above, BAAQMD administers a number of specific regulations on various sources of pollutant emissions that would apply to individual development projects:

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[13] BAAQMD. 2019, April 16. San Francisco Bay Area Community Health Protection Program. https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en

[14] BAAQMD. 2019, October 2. West Oakland Community Action Plan.. https://www.baaqmd.gov/community-health/community-health-protection-program/west-oakland-community-action-plan

[15] BAAQMD. 2019, April 16. San Francisco Bay Area Community Health Protection Program. https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en

[16] BAAQMD. 2019, April 16. San Francisco Bay Area Community Health Protection Program. https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en

- BAAQMD, Regulation 2, Rule 2, New Source Review
- BAAQMD, Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants
- BAAQMD Regulation 6, Rule 1, General Requirements
- BAAQMD Regulation 6, Rule 2, Commercial Cooking Equipment
- BAAQMD Regulation 8, Rule 3, Architectural Coatings
- BAAQMD Regulation 8, Rule 4, General Solvent and Surface Coatings Operations
- BAAQMD Regulation 8, Rule 7, Gasoline Dispensing Facilities
- BAAQMD Regulation 11, Rule 2, Asbestos, Demolition, Renovation and Manufacturing)
- BAAQMD Regulation 11, Rule 18, Reduction of Risk from Air Toxic Emissions at Existing Facilities

1.3.4 Plan Bay Area

Plan Bay Area is the Bay Area's Regional Transportation Plan/Sustainable Community Strategy. The 2040 update to Plan Bay Area was adopted jointly by the ABAG and MTC on July 26, 2017. The 2040 Plan Bay Area update serves as a limited and focused update to the 2013 Plan Bay Area, with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last several years.[17] It lays out a development scenario for the region, which when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by the Air Resources Board.

1.3.5 Alameda County Transportation Commission

The Alameda County Transportation Commission (Alameda CTC) is the congestion management agency for Alameda County, tasked with developing a comprehensive transportation improvement program among local jurisdictions that will reduce traffic congestion and improve land use decision-making and air quality. Alameda CTC's latest congestion management program (CMP) is called the 2019 Alameda County Congestion Management Program. Alameda CTC's countywide transportation model must be consistent with the regional transportation model developed by the MTC with ABAG data. The countywide transportation model is used to help evaluate cumulative transportation impacts of local land use decisions on the CMP system. In addition, Alameda CTC's updated CMP describes strategies to measure the performance of the county's multimodal transportation system, address roadway congestion and improve the performance of a multimodal system, and connect transportation and land use planning to reduce regional vehicle miles traveled (VMT) in accordance with Senate Bill 375 (SB 375). The 2019 CMP update incorporates several actions identified as next steps in the 2017 CMP and closely aligns the CMP with the 2016 Countywide Transportation Plan, the 2040 Plan Bay Area, and other related efforts and legislative requirements (e.g., AB 32 and SB 375) to better integrate transportation and land use for achieving GHG reductions.

[17] Metropolitan Transportation Commission and Association of Bay Area Governments, 2017. Plan Bay Area 2040 Plan.

ENVIRONMENTAL SETTING

1.3.6 San Francisco Bay Area Air Basin

The BAAQMD is the regional air quality agency for the SFBAAB, which 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.[18]

1.3.6.1 METEOROLOGY

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range splits, resulting in a western coast gap, Golden Gate, and an eastern coast gap, Carquinez Strait, which allow air to flow in and out of the SFBAAB and the Central Valley.

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure 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 California coast.

The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of uvpwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

1.3.6.2 WIND PATTERNS

During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more directly from the west as they stream through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San Jose when it meets the East Bay hills.

Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate, or the San Bruno gap. For example, the average wind speed at San Francisco International Airport in July is about 17 knots (from 3:00 p.m. to 4:00 p.m.), compared with only 7 knots at San Jose and less than 6 knots at the Farallon Islands.

The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part

[18] This section describing the air basin is from Bay Area Air Quality Management District, 2017, May, Appendix C: Sample Air Quality Setting, in *California Environmental Quality Act Air Quality Guidelines*.

upon the height and strength of the inversion. If the inversion is low and strong, and hence stable, the flow of the sea breeze will be inhibited, and stagnant conditions are likely to result.

In the winter, the SFBAAB frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the SFBAAB.

1.3.6.3 TEMPERATURE

Summertime temperatures in the SFBAAB are determined in large part by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of cold water from the ocean bottom along the coast. On summer afternoons the temperatures at the coast can be 35 degrees Fahrenheit (ºF) cooler than temperatures 15 to 20 miles inland. At night this contrast usually decreases to less than 10ºF.

In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large. The climatological station nearest to the project site with temperature data is the Orinda Bowman, California Monitoring Station (ID No. 046502). The lowest average temperature is reported at 34.3°F in January, and the highest average temperature is 82.5°F in September.[19]

1.3.6.4 PRECIPITATION

The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains (November through March) account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another, even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys.

During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing (an upward and downward movement of air) are usually high, and thus pollution levels tend to be low (i.e. air pollutants are dispersed more readily into the atmosphere rather than accumulate under stagnant conditions). However, during the winter, frequent dry periods do occur, when mixing and ventilation are low and pollutant levels build up. Rainfall historically averages 30.53 inches per year in the project area. [20]

[19] Western Regional Climate Center (WRCC). 2020, November 13 (accessed). Orinda Bowman, California ([Station ID] 046502): Period of Record Monthly Climate Summary, 08/01/1944 to 06/30/1960. Western U.S. Climate Summaries. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6502.

[20] Western Regional Climate Center (WRCC). 2020, November 13 (accessed). Orinda Bowman, California ([Station ID] 046502): Period of Record Monthly Climate Summary, 08/01/1944 to 06/30/1960. Western U.S. Climate Summaries. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6502.

1.3.6.5 WIND CIRCULATION

Low wind speed contributes to the buildup of air pollution because it allows more pollutants to be emitted into the air mass per unit of time. Light winds occur most frequently during periods of low sun (fall and winter, and early morning) and at night. These are also periods when air pollutant emissions from some sources are at their peak, namely, commuter traffic (early morning) and wood-burning appliances (nighttime). The problem can be compounded in valleys, when weak flows carry the pollutants up-valley during the day, and cold air drainage flows move the air mass down-valley at night. Such restricted movement of trapped air provides little opportunity for ventilation and leads to buildup of pollutants to potentially unhealthful levels.

1.3.6.6 INVERSIONS

An inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth, i.e. the vertical depth in the atmosphere available for diluting air contaminants near the ground. There are two types of inversions that occur regularly in the SFBAAB. Elevation inversions are more common in the summer and fall, and radiation inversions are more common during the winter. The highest air pollutant concentrations in the SFBAAB generally occur during inversions.

1.3.7 Existing Ambient Air Quality

1.3.7.1 ATTAINMENT STATUS OF THE SFBAAB

Areas that meet AAQS are classified attainment areas, and areas that do not meet these standards are classified nonattainment areas. Severity classifications for O_3 range from marginal, moderate, and serious to severe and extreme. The attainment status for the air basin is shown in Table 2. The air basin is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS.

Table 2 Attainment Status of Criteria Pollutants in the San Francisco Bay Area Air Basin

Pollutant	State	Federal[1]
Ozone – 1-hour	Nonattainment	Classification revoked (2005)
Ozone – 8-hour	Nonattainment (serious)	Nonattainment
PM_{10}	Nonattainment	Unclassified/Attainment
$PM_{2.5}$	Nonattainment	Unclassified/Attainment
CO	Attainment	Attainment
NO_2	Attainment	Unclassified
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	Unclassified/Attainment
All others	Unclassified/Attainment	Unclassified/Attainment

Source: California Air Resources Board, 2019, August, October. Area Designations Maps: State and National. https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations.

[1] Federal designations current as of June 30, 2020

1.3.7.2 EXISTING AMBIENT AIR QUALITY

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project area have been documented and measured by the BAAQMD. BAAQMD has 24 permanent monitoring stations located around the Bay Area. The nearest station is the Oakland - 9925 International Blvd Monitoring Station, which monitors O_3, NO_2, and $PM_{2.5}$. Data from this monitoring stations is summarized in Table 3. The data show regular violations of the State and federal O_3 standards and federal $PM_{2.5}$ standard.

Table 3 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2015	2016	2017	2018	2019
Ozone (O_3)					
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	0	0	2	0	1
State 8-hour ≥ 0.07 ppm (days exceed threshold)	2	0	2	0	2
Federal 8-Hour > 0.075 ppm (days exceed threshold)	0	0	2	0	0
Max. 1-Hour Conc. (ppm)	0.094	0.082	0.136	0.061	0.098
Max. 8-Hour Conc. (ppm)	0.074	0.057	0.100	0.052	0.073
Nitrogen Dioxide (NO_2)					
State 1-Hour ≥ 0.18 (ppm)	0	0	0	0	0
Maximum 1-Hour Conc. (ppb)	0.0480	0.0592	0.0649	0.0729	0.0618
Fine Particulates ($PM_{2.5}$)					
Federal 24-Hour > 35 µg/m^3 (days exceed threshold)	1	0	7	13	0
Max. 24-Hour Conc. (µg/m^3)	44.7	15.5	70.2	172.1	24.7

Source: California Air Resources Board (CARB). 2020. Air Pollution Data Monitoring Cards (2015, 2016, 2017, 2018, and 2019). https://www.arb.ca.gov/adam/topfour/topfour1.php

Notes: ppm: parts per million; parts per billion, µg/m^3: micrograms per cubic meter. Data for obtained from the Oakland - 9925 International Blvd Monitoring Station

1.3.7.3 EXISTING EMISSIONS

The project site is currently developed with two existing structures which generate air pollutant emissions associated with the burning of fossil fuels in cars (mobile sources); energy use for cooling, heating, and cooking (energy); and landscape equipment use (area sources).

1.3.8 Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. Residential areas are also considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, since the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the

population. The nearest sensitive receptors to the project site are the multi-family residences to the east of the project site on Hyde Street.

1.4 METHODOLOGY

The BAAQMD "CEQA Air Quality Guidelines" were prepared to assist in the evaluation of air quality impacts of projects and plans proposed in the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and greenhouse gas emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Guidelines. In May 2011, the updated BAAQMD CEQA Air Quality Guidelines were amended to include a risk and hazards threshold for new receptors and modified procedures for assessing impacts related to risk and hazard impacts; however, this later amendment regarding risk and hazards was the subject of the December 17, 2015 Supreme Court decision (*California Building Industry Association v BAAQMD*), which clarified that CEQA does not require an evaluation of impacts of the environment on a project.[21]

1.4.1 Criteria Air Pollutant Emissions

The proposed project qualifies as a project-level project under BAAQMD's criteria. For project-level analyses, BAAQMD has adopted screening criteria and significance criteria that would be applicable to the proposed project. If a project exceeds the screening level, it would be required to conduct a full analysis using BAAQMD's significance criteria.[22]

[21] On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the BAAQMD CEQA Air Quality Guidelines. The court did not determine whether the thresholds of significance were valid on their merits, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD complied with CEQA. Following the court's order, the BAAQMD released revised CEQA Air Quality Guidelines in May of 2012 that include guidance on calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures, and which set aside the significance thresholds. The Alameda County Superior Court, in ordering BAAQMD to set aside the thresholds, did not address the merits of the science or evidence supporting the thresholds, and in light of the subsequent case history discussed below, the science and reasoning contained in the BAAQMD 2011 CEQA Air Quality Guidelines provide the latest state-of-the-art guidance available. On August 13, 2013, the First District Court of Appeal ordered the trial court to reverse the judgment and upheld the BAAQMD's CEQA Guidelines. (*California Building Industry Association versus BAAQMD, Case No. A135335 and A136212 (Court of Appeal, First District, August 13, 2013*).)

[22] Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines.

Regional Significance Criteria

The BAAQMD criteria for regional significance for projects that exceed the screening thresholds are shown in Table 4. Criteria for both construction and operational phases of the project are shown.

Table 4 BAAQMD Regional (Mass Emissions) Criteria Air Pollutant Significance Thresholds

	Construction Phase	Operational Phase	
Pollutant	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (Tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
PM_{10} and $PM_{2.5}$ Fugitive Dust	Best Management Practices	None	None

Source: Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

The BAAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals exposed to elevated concentrations of air pollutants in the Air Basin and has established thresholds that would be protective of these individuals. To achieve the health-based standards established by the EPA, BAAQMD prepares the Clean Air Plan that details regional programs to attain the AAQS. Mass emissions in Table 4 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the Air Basin. The thresholds are based on the trigger levels for the federal New Source Review (NSR) Program. The NSR Program was created to ensure projects are consistent with attainment of health-based federal AAQS. Regional emissions from a single project do not single-handedly trigger a regional health impact, and it is speculative to identify how many more individuals in the air basin would be affected by the health effects listed above. Projects that do not exceed the BAAQMD regional significance thresholds in Table 4 would not violate any air quality standards or contribute substantially to an existing or projected air quality violation.

If projects exceed the emissions in Table 4 emissions would cumulatively contribute to the nonattainment status and would contribute in elevating health effects associated to these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants. However, for projects that exceed the emissions in Table 4 it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health effects cited above.

The BAAQMD has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health in order to address the issue raised in *Sierra Club v. County of Fresno* (Friant Ranch, L.P.) (2018) 6 Cal.5th 502, Case No. S21978. Ozone concentrations are dependent upon a variety of

complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations in relation to the National AAQS and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. However, if a project in the Bay Area exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until such time the attainment standard are met in the Air Basin.

Local CO Hotspots

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the California AAQS for CO, which is 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). However, with the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the California and National AAQS, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, BAAQMD does not require a CO hotspot analysis if the following criteria are met:

- Project is consistent with an applicable congestion management program established by the County Congestion Management Agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.
- The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project traffic would not increase traffic volumes at affected intersection to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g. tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).[23]

Odors

The BAAQMD 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. In addition, odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property. Under BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance. In addition, BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater

[23] Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants.[24]

1.4.2 Toxic Air Contaminants

The BAAQMD significance thresholds for local community risk and hazard impacts apply to the siting of a new source. Local community risk and hazard impacts are associated with TACs and $PM_{2.5}$ because emissions of these pollutants can have significant health impacts at the local level. The purpose of this environmental evaluation is to identify the significant effects of the proposed project on the environment, not the significant effects of the environment on the proposed project (*California Building Industry Association v. Bay Area Air Quality Management District [2015] 62 Cal.4th 369 [Case No. S213478]*). While CEQA does not require an environmental evaluation to analyze the environmental effects of attracting development and people to an area, the environmental evaluation must analyze the impacts of environmental hazards on future users when the proposed project exacerbates an existing environmental hazard or condition or if there is an exception to this exemption identified in the Public Resources Code. Schools, residential, commercial, and office uses do not use substantial quantities of TACs and typically do not exacerbate existing hazards, so these thresholds are typically applied to new industrial projects.

For assessing community risk and hazards, sources within a 1,000-foot radius are considered. Sources are defined as freeways, high volume roadways (with volume of 10,000 vehicles or more per day or 1,000 trucks per day), and permitted sources.[25,26]

The proposed project would generate TACs and $PM_{2.5}$ during construction activities that could elevate concentrations of air pollutants at the surrounding residential receptors. The BAAQMD has adopted screening tables for air toxics evaluation during construction.[27] Construction-related TAC and $PM_{2.5}$ impacts should be addressed on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and proximity to off-site receptors, as applicable.[28]

The project threshold identified below is applied to the proposed project's construction phase emissions:

Community Risk and Hazards – Project

Project-level construction emissions of TACs or $PM_{2.5}$ from the proposed project to individual sensitive receptors within 1,000 feet of the project site that exceed any of the thresholds listed below are considered a potentially significant community health risk:

- Non-compliance with a qualified Community Risk Reduction Plan;
- An excess cancer risk level of more than 10 in one million, or a non-cancer (i.e. chronic or acute) hazard index greater than 1.0 would be a significant cumulatively considerable contribution;

[24] Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines.
[25] Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.
[26] Bay Area Air Quality Management District. 2012. Recommended Methods for Screening and Modeling Local Risks and Hazards.
[27] Bay Area Air Quality Management District. 2010. Screening Tables for Air Toxics Evaluations during Construction.
[28] Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ from a single source would be a significant, cumulatively considerable contribution.[29]

Community Risk and Hazards – Cumulative

Cumulative sources represent the combined total risk values of each of the individual sources within the 1,000-foot evaluation zone.

A project would have a cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source or location of a receptor, plus the contribution from the project, exceeds the following:

- Non-compliance with a qualified Community Risk Reduction Plan; or
- An excess cancer risk levels of more than 100 in one million or a chronic non-cancer hazard index (from all local sources) greater than 10.0; or
- 0.8 $\mu g/m^3$ annual average $PM_{2.5}$.[30]

Current BAAQMD guidance recommends the determination of cancer risks using the Office of Environmental Health Hazard Assessment's (OEHHA) methodology, which was originally adopted in 2003.[31,32] In February 2015, OEHHA adopted new health risk assessment guidance which includes several efforts to be more protective of children's health. These updated procedures include the use of age sensitivity factors to account for the higher sensitivity of infants and young children to cancer causing chemicals, and age-specific breathing rates.[33] However, BAAQMD has not formally adopted the new OEHHA methodology into their CEQA guidance. To be conservative, the cancer risks associated with project implementation and significance conclusions were determined using the new 2015 OEHHA guidance for risk assessments.

[29] Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.
[30] Bay Area Air Quality Management District. 2017, May. California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.
[31] Bay Area Air Quality Management District. 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards.
[32] Office of Environmental Health Hazard Assessment. 2003. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.
[33] Office of Environmental Health Hazard Assessment. 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.

2. Greenhouse Gas Emissions

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. Climate change is the variation of Earth's climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor,[34] carbon (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.[35, 36] The major GHG are briefly described below.

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g. manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.
- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.
- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high global-warming-potential (GWP) gases.
    - ***Chlorofluorocarbons (CFCs***) are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

[34] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop rather than a primary cause of change.

[35] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (California Air Resources Board (CARB). 2017, March 14. Final Proposed Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/shortlived.htm). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

[36] Intergovernmental Panel on Climate Change (IPCC). 2001. Third Assessment Report: Climate Change 2001. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/03/WGI_TAR_full_report.pdf.

- ***Perfluorocarbons (PFCs)*** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.

- ***Sulfur Hexafluoride (SF_6)*** is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.

- ***Hydrochlorofluorocarbons (HCFCs)*** contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.

- ***Hydrofluorocarbons (HFCs)*** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs.[37,38]

GHGs are dependent on the lifetime or persistence of the gas molecule in the atmosphere. Some GHGs have stronger greenhouse effects than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 5. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fourth Assessment Report (AR4) GWP values for CH_4, a project that generates 10 MT of CH_4 would be equivalent to 250 MT of CO_2.[39,40]

[37] Intergovernmental Panel on Climate Change (IPCC). 2001. Third Assessment Report: Climate Change 2001. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/03/WGI_TAR_full_report.pdf.

[38] US Environmental Protection Agency (USEPA). 2019. Overview of Greenhouse Gases. http://www3.epa.gov/climatechange/ghgemissions/gases.html.

[39] CO_2-equivalence is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

[40] Intergovernmental Panel on Climate Change (IPCC). 2013. Fifth Assessment Report: Climate Change 2013. New York: Cambridge University Press.

Table 5 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2

GHGs	Carbon Dioxide (CO_2)	Methane[1] (CH_4)	Nitrous Oxide (N_2O)
Second Assessment			
Atmospheric Lifetime (Years)	50 to 200	12 (±3)	120
Global Warming Potential Relative to CO_2[2]	1	21	310
Fourth Assessment			
Atmospheric Lifetime (Years)	50 to 200	12	114
Global Warming Potential Relative to CO_2[2]	1	25	298
Fifth Assessment[3]			
Atmospheric Lifetime (Years)	50 to 200	12	121
Global Warming Potential Relative to CO_2[2]	1	28	265

Source: Intergovernmental Panel on Climate Change (IPCC). 1995. Second Assessment Report: Climate Change 1995 https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_sar_wg_I_full_report.pdf; Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/02/ar4_syr_full_report.pdf; Intergovernmental Panel on Climate Change (IPCC). 2013. Fifth Assessment Report: Climate Change 2013. New York: Cambridge University Press.

Notes:

1 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

2 Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.

3 The GWP values in the IPCC's Fifth Assessment Report (2013)[41] reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2.

2.3 CALIFORNIA'S GREENHOUSE GAS SOURCES AND RELATIVE CONTRIBUTION

In 2020, the statewide GHG emissions inventory was updated for 2000 to 2018 emissions using the GWPs in IPCC's AR4.[42] Based on these GWPs, California produced 425.3 $MMTCO_2e$ GHG emissions in 2018. California's transportation sector was the single largest generator of GHG emissions, producing 39.9 percent of the state's total emissions. Industrial sector emissions made up 21.0 percent, and electric power generation made up 14.8 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (9.7 percent), agriculture and forestry (7.7 percent) high GWP (4.8 percent), and recycling and waste (2.1 percent).[43]

Since the peak level in 2004, California statewide GHG emissions dropped below the 2020 GHG limit of 431 $MMCO_2e$ in 2016 and have remained below the 2020 GHG limit since then. In 2018, emissions from routine GHG emitting activities statewide were 6 $MMTCO_2e$ lower than the 2020 GHG limit. Per capita GHG emissions in California have dropped from a 2001 peak of 14.0 $MTCO_2e$ per person to 10.7 $MTCO_2e$ per person in 2018, a 24 percent decrease. Transportation emissions decreased in 2018 compared to the previous year, which is the first year over year decrease since 2013. Since 2008, California's electricity sector has followed an overall downward trend in emissions. In 2018, solar power generation has continued its rapid growth since 2013. Emissions from high-GWP gases increased 2.3 percent in 2018 (2000-2018 average year-over-year increase is 6.8 percent), continuing the increasing trend as they replace Ozone Depleting Substances

41 Intergovernmental Panel on Climate Change (IPCC). 2013. Fifth Assessment Report: Climate Change 2013. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_all_final.pdf.

42 Intergovernmental Panel on Climate Change (IPCC). 2013. Fifth Assessment Report: Climate Change 2013. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_all_final.pdf.

43 California Air Resources Board (CARB). 2020. 2020 California Greenhouse Gas 2000-2018 Emissions Trends and Indicators Report. https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2018/ghg_inventory_trends_00-18.pdf.

(ODS) being phased out under the 1987 Montreal Protocol. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product (GDP)) is declining, representing a 43 percent decline since the 2001 peak, while the state's GDP has grown 59 percent during this period.[44]

2.4 HUMAN INFLUENCE ON CLIMATE CHANGE

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that is attributable to human activities. The amount of CO_2 in the atmosphere has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million per year since 1960, mainly due to combustion of fossil fuels and deforestation.[45] These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants.[46] In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime.[47]

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty. For example, there are varying degrees of certainty on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.
- An increase in frequency of warm spells/heat waves over most land areas.
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Intense tropical cyclone activity increases.
- Increased incidence of extreme high sea level (excluding tsunamis).

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[44] California Air Resources Board (CARB). 2020. 2020 California Greenhouse Gas 2000-2018 Emissions Trends and Indicators Report. https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2018/ghg_inventory_trends_00-18.pdf.

[45] Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press.

[46] California Climate Action Team (CAT). 2006, March. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

[47] Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press.

2.5 POTENTIAL CLIMATE CHANGE IMPACTS FOR CALIFORNIA

Observed changes over the last several decades across the western United States reveal clear signs of climate change. Statewide, average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada.[48] The years from 2014 through 2016 have shown unprecedented temperatures with 2014 being the warmest.[49] By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1 to 8.6°F, depending on emissions levels. [50]

In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures; 2) a smaller fraction of precipitation falling as snow; 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones; 4) advanced shift in the timing of snowmelt of 5 to 30 days earlier in the spring; and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms.[51] Overall, California has become drier over time, with five of the eight years of severe to extreme drought occurring between 2007 and 2016, with unprecedented dry years occurring in 2014 and 2015. [52] Statewide precipitation has become increasingly variable from year to year, with the driest consecutive four years occurring from 2012 to 2015.[53] According to the California Climate Action Team—a committee of state agency secretaries and the heads of agencies, boards, and departments, led by the Secretary of the California Environmental Protection Agency—even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks to California are shown in Table 6 and include impacts to public health, water resources, agriculture, coastal sea level, forest and biological resources, and energy.

[48] California Climate Change Center (CCCC). 2012, July. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.

[49] Office of Environmental Health Hazards Assessment (OEHHA). 2018, May. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf.

[50] California Climate Change Center (CCCC). 2012, July. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.

[51] California Climate Action Team (CAT). 2006, March. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

[52] Office of Environmental Health Hazards Assessment (OEHHA). 2018, May. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf.

[53] Office of Environmental Health Hazards Assessment (OEHHA). 2018, May. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf.

Table 6 Summary of GHG Emissions Risks to California

Impact Category	Potential Risk
Public Health Impacts	Heat waves will be more frequent, hotter, and longer Fewer extremely cold nights Poor air quality made worse Higher temperatures increase ground-level ozone levels
Water Resources Impacts	Decreasing Sierra Nevada snow pack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coastal Sea Level Impacts	Accelerated sea level rise Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure
Forest and Biological Resource Impacts	Increased risk and severity of wildfires Lengthening of the wildfire season Movement of forest areas Conversion of forest to grassland Declining forest productivity Increasing threats from pest and pathogens Shifting vegetation and species distribution Altered timing of migration and mating habits Loss of sensitive or slow-moving species
Energy Demand Impacts	Potential reduction in hydropower Increased energy demand

Sources: California Energy Commission (CEC). 2006. Our Changing Climate: Assessing the Risks to California. 2006 Biennial Report. CEC-500-2006-077. California Climate Change Center; California Energy Commission (CEC). 2009, May. The Future Is Now: An Update on Climate Change Science, Impacts, and Response Options for California. CEC-500-2008-0077; California Climate Change Center (CCCC). 2012, July. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California; and California Natural Resources Agency (CNRA). 2014, July. Safeguarding California: Reducing Climate Risk: An Update to the 2009 California Climate Adaptation Strategy. https://resources.ca.gov/CNRALegacyFiles/docs/climate/Final_Safeguarding_CA_Plan_July_31_2014.pdf.

1.1 REGULATORY FRAMEWORK

2.5.1 Federal Regulations

The US Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 US Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings did not themselves impose any emission reduction requirements but allowed the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.[54]

To regulate GHGs from passenger vehicles, EPA was required to issue an endangerment finding. The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the proposed project's GHG emissions inventory because they constitute the majority of GHG emissions; they are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

2.5.1.1 US MANDATORY REPORTING RULE FOR GREENHOUSE GASES (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 $MTCO_2e$ or more per year are required to submit an annual report.

2.5.1.2 UPDATE TO CORPORATE AVERAGE FUEL ECONOMY STANDARDS (2021 TO 2026)

The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. However, on March 30, 2020, the EPA finalized an updated CAFE and GHG emissions standards for passenger cars and light trucks and established new standards, covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021-2026. Under SAFE, the fuel economy standards will increase 1.5 percent per year compared to the 5 percent per year under the CAFE standards established in 2012. Overall, SAFE requires a fleet average of 40.4 MPG and 202 g/mi of CO_2 emissions for model year 2026 vehicles.[55] However, consortium of automakers and California have agreed on a voluntary framework to reduce emissions that can serve as an alternative path forward for clean vehicle standards nationwide. Automakers who agreed to the framework are Ford, Honda, BMW of North America, and Volkswagen Group of America. The framework supports continued annual reductions of vehicle greenhouse gas emissions through the 2026 model year, encourages innovation to accelerate the transition to electric vehicles, and provides industry the certainty needed to make investments and create jobs. This commitment means

[54] US Environmental Protection Agency (USEPA). 2009, December. EPA: Greenhouse Gases Threaten Public Health and the Environment. Science overwhelmingly shows greenhouse gas concentrations at unprecedented levels due to human activity. https://archive.epa.gov/epapages/newsroom_archive/newsreleases/08d11a451131bca585257685005bf252.html.

[55] The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks: Final Rule, Vol. 85 Federal Register, No. 84 (April 30, 2020).

that the auto companies party to the voluntary agreement will only sell cars in the United States that meet the CAFE standards established in 2021 for model years 2017 to 2025.[56]

2.5.1.3 EPA REGULATION OF STATIONARY SOURCES UNDER THE CLEAN AIR ACT (ONGOING)

Pursuant to its authority under the Clean Air Act, the EPA has been developing regulations for new, large stationary sources of emissions such as power plants and refineries. Under former President Obama's 2013 Climate Action Plan, the EPA was directed to develop regulations for existing stationary sources as well. On June 19, 2019, the EPA issued the final Affordable Clean Energy (ACE) rule which became effective on August 19, 2019. The ACE rule was crafted under the direction of President Trump's Energy Independence Executive Order. It officially rescinds the Clean Power Plan rule issued during the Obama Administration and sets emissions guidelines for states in developing plans to limit CO_2 emissions from coal-fired power plants.

2.5.2 State Regulations

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Orders S-03-05 and B-30-15, Assembly Bill (AB) 32, Senate Bill (SB) 32, and SB 375.

2.5.2.1 EXECUTIVE ORDER S-03-05

Executive Order S-03-05, signed June 1, 2005. Executive Order S-03-05 set the following GHG reduction targets for the State:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

2.5.2.2 ASSEMBLY BILL 32, THE GLOBAL WARMING SOLUTIONS ACT

State of California guidance and targets for reductions in GHG emissions are generally embodied in the Global Warming Solutions Act, adopted with passage of AB 32. AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 emissions reduction goal established in Executive Order S-03-05.

CARB 2008 Scoping Plan

The first Scoping Plan was adopted by CARB on December 11, 2008. The 2008 Scoping Plan identified that GHG emissions in California are anticipated to be 596 $MMTCO_2e$ in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 $MMTCO_2e$ (471 million tons) for the state.[57] To effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 $MTCO_2e$ per year,

[56] California Air Resources Board (CARB). 2019, September 5 (accessed). California and major automakers reach groundbreaking framework agreement on clean emission standards. https://ww2.arb.ca.gov/news/california-and-major-automakers-reach-groundbreaking-framework-agreement-clean-emission.

[57] California Air Resources Board (CARB). 2008, December. Climate Change Scoping Plan. https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/document/adopted_scoping_plan.pdf.

prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.

First Update to the Scoping Plan

CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Update to the Scoping Plan, adopted May 22, 2014, highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated AR4 GWPs, and the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, are slightly higher at 431 $MMTCO_2e$. [58]

As identified in the Update to the Scoping Plan, California is on track to meet the goals of AB 32. The update also addresses the state's longer-term GHG goals in a post-2020 element. The post-2020 element provides a high-level view of a long-term strategy for meeting the 2050 GHG goal, including a recommendation for the state to adopt a midterm target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals.[59] CARB identified that reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit. [60]

2.5.2.3 EXECUTIVE ORDER B-30-15

Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions in the state to 40 percent below 1990 levels by year 2030. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in Executive Order S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in state planning and investment decisions.

2.5.2.4 SENATE BILL 32 AND ASSEMBLY BILL 197

In September 2016, Governor Brown signed Senate Bill 32 and Assembly Bill 197, making the Executive Order goal for year 2030 into a statewide, mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direction emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

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[58] California Air Resources Board (CARB). 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006. http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm.

[59] California Air Resources Board (CARB). 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006. http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.

[60] California Air Resources Board (CARB). 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006. http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm.

2017 Climate Change Scoping Plan Update

Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 24, 2017, CARB approved the 2017 Climate Change Scoping Plan Update, which outlines potential regulations and programs, including strategies consistent with AB 197 requirements, to achieve the 2030 target. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.[61]

California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission vehicle technologies; continued investment in renewables such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conserve agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten emissions limits for criteria air pollutants and toxic air contaminants on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing zero-emission (ZE) buses and trucks.
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency by 25 percent by 2030 and utilizes near-zero emissions technology and deployment of ZE trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Continued implementation of SB 375.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to these statewide strategies, the 2017 Climate Change Scoping Plan also identified local governments as essential partners in achieving the state's long-term GHG reduction goals and recommended local actions to reduce GHG emissions—for example, statewide targets of no more than 6 $MTCO_2e$ or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. CARB recommends that local governments evaluate and adopt quantitative, locally appropriate goals that align with the statewide per capita targets and sustainable development objectives and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the state's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have discretion to develop evidenced-based numeric thresholds (mass emissions, per capita, or per service population) consistent with the Scoping Plan and the

[61] California Air Resources Board (CARB). 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

state's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from vehicle miles traveled (VMT), and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.

The Scoping Plan scenario is set against what is called the "business as usual" yardstick—that is, what would the GHG emissions look like if the state did nothing at all beyond the policies that are already required and in place to achieve the 2020 limit, as shown in Table 7. It includes the existing renewables requirements, advanced clean cars, the "10 percent" LCFS, and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years. Also shown in the table, the known commitments are expected to result in emissions that are 60 $MMTCO_2e$ above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

Table 7 2017 Climate Change Scoping Plan Emissions Reductions Gap

Modeling Scenario	2030 GHG Emissions $MMTCO_2e$
Reference Scenario (Business-as-Usual)	389
With Known Commitments	320
2030 GHG Target	260
Gap to 2030 Target with Known Commitments	60

Source: California Air Resources Board. 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

Table 8 provides estimated GHG emissions by sector compared to 1990 levels, and the range of GHG emissions for each sector estimated for 2030.

Table 8 2017 Scoping Plan Emissions Changes by Sector to Achieve the 2030 Target

Scoping Plan Sector	1990 $MMTCO_2e$	2030 Proposed Plan Ranges $MMTCO_2e$	% Change from 1990
Agricultural	26	24-25	-8% to -4%
Residential and Commercial	44	38-40	-14% to -9%
Electric Power	108	30-53	-72% to -51%
High GWP	3	8-11	267% to 367%
Industrial	98	83-90	-15% to -8%
Recycling and Waste	7	8-9	14% to 29%
Transportation (including TCU)	152	103-111	-32% to -27%
Net Sink[a]	-7	TBD	TBD
Sub Total	431	294-339	-32% to -21%
Cap-and-Trade Program	NA	24-79	NA
Total	431	260	-40%

Source: California Air Resources Board. 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

Notes: TCU = Transportation, Communications, and Utilities; TBD: To Be Determined.

[a] Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.

2.5.2.5 SENATE BILL 375 – SUSTAINABLE COMMUNITIES STRATEGY

In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPOs). The Metropolitan Transportation Commission (MTC) is the MPO for the nine-county San Francisco Bay Area region. MTC's targets are a 7 percent per capita reduction in GHG emissions from 2005 by 2020, and 15 percent per capita reduction from 2005 levels by 2035.[62]

2017 Update to the SB 375 Targets

CARB is required to update the targets for the MPOs every eight years. In June 2017, CARB released updated targets and technical methodology and recently released another update in February 2018. The updated targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update, while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005. This excludes reductions anticipated from implementation of state technology and fuels strategies and any potential future state strategies such as statewide road user pricing. The proposed targets call for greater per capita GHG emission reductions from SB 375 than are currently in place, which for 2035, translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted

[62] California Air Resources Board. 2010. Staff Report, Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375, August.

sustainable communities strategies (SCS). As proposed, CARB staff's proposed targets would result in an additional reduction of over 8 MMTCO$_2$e in 2035 compared to the current targets. For the next round of SCS updates, CARB's updated targets for the MTC/ABAG region are a 10 percent per capita GHG reduction in 2020 from 2005 levels (compared to 7 percent under the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 15 percent).[63]

2.5.2.6 OTHER APPLICABLE MEASURES

Transportation

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 light-duty vehicles (see also the discussion on the update to the Corporate Average Fuel Economy standards under *Federal Laws*, above). In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases with requirements for greater numbers of ZE vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025 new automobiles will emit 34 percent less global warming gases and 75 percent less smog-forming emissions.

Executive Order S-1-07

On January 18, 2007, the state set a new LCFS for transportation fuels sold in the state. Executive Order S-01-07 sets a declining standard for GHG emissions measured in CO$_2$e gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels, and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

Executive Order B-16-2012

On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate ZE vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directed the number of ZE vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are

[63] California Air Resources Board (CARB). 2018, February. Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. https://www.arb.ca.gov/cc/inventory/data/data.htm.

ZE by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions 80 percent below 1990 levels.

Executive Order N-79-20

On September 23, 2020 Governor Newsom signed Executive Order N-79-20 which identifies a goal that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035. Additionally, this Executive Order identified fleet goals for trucks of 100 percent of drayage trucks be zero emissions by 2035 and 100 percent of medium- and heavy-duty vehicles in the State be zero-emission by 2045, for all operations where feasible. Additionally, the Executive Order identifies a goal for the State to transition to 100 percent zero-emission off-road vehicles and equipment by 2035 where feasible.

Renewables Portfolio Standard

Senate Bills 1078, 107, X1-2, and Executive Order S-14-08

A major component of California's Renewable Energy Program is the renewables portfolio standard established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08, signed in November 2008, expanded the state's renewable energy standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

Senate Bill 350 (de Leon), was signed into law September 2015. SB 350 establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, which supersedes the SB 350 requirements. Under SB 100, the RPS for public-owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. Additionally, SB 100 also established a new RPS requirement of 50 percent by 2026. Furthermore, the bill establishes an overall state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Executive Order B-55-18

Executive Order B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Executive

Order B-55-18 directs CARB to work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Energy Efficiency

California Building Standards Code – Building Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2019 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Building Energy Efficiency Standards, which were adopted on May 9, 2018, went into effect on January 1, 2020.

The 2019 standards move towards cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multi-family buildings of 3 stories and less. Four key areas the 2019 standards will focus on include 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; 4) and nonresidential lighting requirements.[64] Based on a study of the statewide impacts of the 2019 changes to the California Energy Efficiency Standards, the reductions for newly constructed nonresidential buildings are estimated to total 10.7 percent for electricity and 1 percent for natural gas.[65]

California Green Building Standards Code – CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[66] The mandatory provisions of CALGreen became effective January 1, 2011. The 2019 CALGreen standards became effective January 1, 2020.

Section 5.408 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

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[64] California Energy Commission (CEC). 2018. News Release: Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. https://www.energy.ca.gov/news/2018-05/energy-commission-adopts-standards-requiring-solar-systems-new-homes-first.

[65] NORESCO. 2018, June 29. 2019 Update to the California Energy Efficiency Standards for Residential and Non-Residential Buildings.

[66] The green building standards became mandatory in the 2010 edition of the code.

2006 Appliance Energy Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR §§ 1601–1608) were adopted by the CEC on October 11, 2006 and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business as usual," they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

Solid Waste

AB 939

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code §§ 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses. Section 5.208 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

AB 1327

The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code §§ 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

AB 1826

In October of 2014, Governor Brown signed AB 1826 requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses and multifamily residential dwellings with five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed with food waste.

Water Efficiency

SBX7-7

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

AB 1881

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or equivalent. AB 1881 also requires the Energy Commission, in consultation with the department, to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

Short-Lived Climate Pollutant Strategy

Senate Bill 1383

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 required the state board, no later than January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also established targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the Short-Lived Climate Pollutant Reduction Strategy, which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use.[67] In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

[67] California Air Resources Board (CARB). 2017, March 14. Final Proposed Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/shortlived.htm.

2.5.3 Regional Regulations

Plan Bay Area, Strategy for a Sustainable Region

Plan Bay Area 2040 is the Bay Area's RTP/SCS and was adopted jointly by ABAG and MTC on July 26, 2017. It lays out a development scenario for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by CARB. Plan Bay Area 2040 is a limited and focused update to the 2013 Plan Bay Area, with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last several years.

As part of the implementing framework for Plan Bay Area, local governments have identified Priority Development Areas (PDAs) to focus growth. PDAs are transit-oriented, infill development opportunity areas in existing communities. Overall, well over two-thirds of all regional growth in the Bay Area by 2040 is allocated in PDAs. Per the Final Plan Bay Area 2040, while the projected number of new housing units and new jobs within PDAs would increase to 629,000 units and 707,000 jobs compared to the adopted Plan Bay Area 2013, its overall share would be reduced to 77 percent and 55 percent.[68] However, Plan Bay Area 2040 remains on track to meet a 16 percent per capita reduction of GHG emissions by 2035 and a 10 percent per capita reduction by 2020 from 2005 conditions.[69] The proposed project site is within the Downtown Transit Oriented Development in the City of San Leandro.[70]

Bay Area Clean Air Plan

BAAQMD adopted the 2017 Clean Air Plan, Spare the Air, Cool the Climate on April 19, 2017. The 2017 Clean Air Plan also lays the groundwork for reducing GHG emissions in the Bay Area to meet the state's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.[71]

A comprehensive multipollutant control strategy has been developed to be implemented in the next 3 to 5 years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, toxic air

[68] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2017, March. Plan Bay Area 2040 Plan.

[69] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2017, March. Plan Bay Area 2040 Plan.

[70] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2020, September 24 (accessed). Priority Development Areas (Plan Bay Area 2040) ArcGIS. https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=56ee3b41d6a242e5a5871b043ae84dc1.

[71] Bay Area Air Quality Management District, 2017. Final 2017 *Clean Air Plan*, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans, accessed November 21, 2019.

contaminants, and GHG from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources; 2) transportation; 3) energy; 4) agriculture; 5) natural and working lands; 6) waste management; 7) water; and 8) super-GHG pollutants. Overall, the proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Increase efficiency of the energy and transportation systems.
- Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
- Make the electricity supply carbon-free.
- Electrify the transportation and building sectors.

Bay Area Commuter Benefits Program

Under Air District Regulation 14, Model Source Emissions Reduction Measures, Rule 1, Bay Area Commuter Benefits Program, employers with 50 or more full-time employees within the BAAQMD are required to register and offer commuter benefits to employees. In partnership with the BAAQMD and MTC, the rule's purpose is to improve air quality, reduce GHG emissions, and decrease the Bay Area's traffic congestion by encouraging employees to use alternative commute modes, such as transit, vanpool, carpool, bicycling, and walking. The benefits program allows employees to choose from one of four commuter benefit options including a pre-tax benefit, employer-provided subsidy, employer-provided transit, and alternative commute benefit.

2.5.4 Local Regulations

2.5.4.1 CITY OF SAN LEANDRO MUNICIPAL CODE

The City of San Leandro Municipal Code contains ordinances for the City. Title 3, Chapter 3-7, *Construction and Demolition Debris Waste Reduction and Recycling Requirement*, establishes regulations to comply with the California Waste Management Act of 1989. The City of San Leandro has adopted construction and demolition debris diversion requirements that are consistent with the new requirements under CALGreen for mandatory construction recycling. Construction and demolition debris recycling requirements vary by project type. Pursuant to the Article 2, projects involving construction, demolition or renovation that have a project valuation in excess of $100,000 are required to adhere to the City's construction and demolition diversion requirements. Applicants for any covered project are required to recycle or divert (recycle or salvage) at least 100 percent of asphalt and concrete and recycle 50 percent of the remainder of the construction and demolition debris. Applicants of covered projects are required to complete and submit a Debris Recycling Statement (DRS) on a form approved by the City. The DRS form completed by an applicant is required to include the following:

- The estimated volume or weight of the construction and demolition debris, by type of material generated.
- The estimated volume or weight of materials that can feasibly be diverted via reuse or recycling.

- The vendor or facility that the applicant proposes to use to salvage, collect and/or receive diverted material.
- The estimated volume or weight of materials that will be deposited in a landfill.

2.5.4.2 CITY OF SAN LEANDRO CLIMATE ACTION PLAN

The City of San Leandro adopted the Climate Action Plan (EAP) in 2009 to achieve the City Council GHG reduction goal of 40 percent below 2005 levels by 2030 and 80 percent below 2005 levels by 2050.[72] The CAP serves as a guide for the City towards a sustainable future that reduces greenhouse gas emissions from current levels, while promoting economic prosperity for present and future generation. The strategies outlined in the CAP seek to not only reduce GHG emissions, but also provide energy, water, fuel, and cost savings for the City. The goals and programs established by the City's CAP aim to improve energy efficiency, encourage fuel efficient means of travel, and promote recycling and waste reduction throughout the City and within municipal operations.

2.6 ENVIRONMENTAL SETTING

2.6.1 Existing Emissions

The project site is currently developed with two existing structures, which generate GHG emissions associated with the burning of fossil fuels in cars (mobile sources); energy use for cooling, heating, and cooking (energy); water use; wastewater and solid waste generation; and landscape equipment use (area sources).

2.7 METHODOLOGY

The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential GHG emissions impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background information.

2.7.1 BAAQMD Standards of Significance

BAAQMD has adopted CEQA Guidelines to evaluate GHG emissions impacts from development projects.[73] Land use development projects include residential, commercial, industrial, and public land use facilities. Direct sources of emissions may include on-site combustion of energy, such as natural gas used for heating and cooking, emissions from industrial processes (not applicable for most land use development projects), and fuel combustion from mobile sources. Indirect emissions are emissions produced off-site from energy production, water conveyance due to a project's energy use and water consumption, and nonbiogenic emissions from waste disposal. Biogenic CO_2 emissions are not included in the quantification of a project's

[72] City of San Leandro. 2009. A Vision for a Sustainable San Leandro. https://www.sanleandro.org/depts/pw/sust/cap.asp.

[73] Bay Area Air Quality Management Agency. 2017. California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed April 9, 2020.

GHG emissions, because biogenic CO_2 is derived from living biomass (e.g., organic matter present in wood, paper, vegetable oils, animal fat, food, animal, and yard waste) as opposed to fossil fuels. BAAQMD is currently updating their CEQA Guidelines. Under the 2017 CEQA Guidelines, BAAQMD identified a tiered approach for assessing GHG emissions impacts of a project:

- **Consistency with a Qualified Greenhouse Gas Reduction Strategy.** If a project is within the jurisdiction of an agency that has a "qualified" GHG reduction strategy, the project can assess consistency of its GHG emissions impacts with the reduction strategy.

- **BAAQMD Screening Level Sizes.** BAAQMD has adopted screening criteria for development projects that would be applicable for the proposed project based on the square footage, units, acreage, students, and/or employees generated by a project. Typical projects that meet the screening criteria do not generate emissions greater than 1,100 $MTCO_2e$ and would not generate significant GHG emissions.

- **Brightline Screening Threshold.** BAAQMD adopted screening criteria for development projects of 1,100 $MTCO_2e$ per year that would be applicable for the proposed project. If a project exceeds the BAAQMD Guidelines' GHG screening-level sizes or screening criteria of 1,100 $MTCO_2e$.

- **Efficiency Threshold.** AB 32 requires the statewide GHG emission to be reduced to 1990 levels by 2020. On a per-capita basis, that means reducing the annual emissions of 14 tons of carbon dioxide for every person in California down to about 10 tons per person by 2020.[74] Hence, BAAQMD's per capita significance threshold is calculated based on the State's land use sector emissions inventory prepared by CARB and the demographic forecasts for the 2008 Scoping Plan. The land use sector GHG emissions for 1990 were estimated by BAAQMD, as identified in Appendix D of the BAAQMD CEQA Guidelines, to be 295.53 $MMTCO_2e$ and the 2020 California service population (SP) to be 64.3 million. Therefore, the threshold that would ensure consistency with the GHG reduction goals of AB 32 is estimated at 4.6 $MTCO_2e$ per service population per year ($MTCO_2e$/SP/yr) for year 2020.[75]

Based on the adopted 1,100 $MTCO_2e$ per year brightline screening threshold under AB 32 (i.e., 1990 levels by 2020), and the GHG reduction target for year 2030 established under SB 32 (i.e., 40 percent 1990 levels by 2030), a threshold of 660 $MTCO_2e$ per year is utilized for the proposed project. If project emissions are below this brightline screening threshold, GHG emissions impacts would be considered less than significant.

[74] California Air Resources Board, 2008. Climate Change Proposed Scoping Plan, a Framework for Change.

[75] Bay Area Air Quality Management Agency. 2017. California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed April 9, 2020.

Emissions Worksheet

Criteria Air Pollutant Emissions Summary - Construction

	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total Unmitigated		2.12	2.45	2.57	0.01	0.32	0.09	0.41	0.09	0.08	0.17

UNMITIGATED

	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total Onsite		2.00	1.60	1.65	0.00	0.02	0.08	0.11	0.01	0.08	0.09
Total Offsite		0.13	0.85	0.92	0.00	0.30	0.00	0.30	0.08	0.00	0.08
check		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

FOR CONSTRUCTION RISK ASSESSMENT - Unmitigated Run

	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2021 Onsite		0.08	0.72	0.60	0.00	0.02	0.04	0.06	0.01	0.04	0.04
2021 Offsite		0.03	0.25	0.25	0.00	0.07	0.00	0.07	0.02	0.00	0.02
2022 Onsite		0.09	0.79	0.92	0.00	0.00	0.04	0.04	0.00	0.04	0.04
2022 Offsite		0.09	0.59	0.65	0.00	0.21	0.00	0.21	0.06	0.00	0.06
2023 Onsite		1.83	0.09	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023 Offsite		0.00	0.02	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00

FOR CONSTRUCTION REGIONAL EMISSIONS - Unmitigated Run

	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total 2021		0.11	0.97	0.85	0.00	0.10	0.04	0.14	0.03	0.04	0.06
Total 2022		0.18	1.38	1.57	0.00	0.21	0.04	0.25	0.06	0.04	0.10
Total 2023		1.83	0.11	0.15	0.00	0.01	0.00	0.02	0.00	0.00	0.01
Construction Total		2	2	3	0	0	0	0	0	0	0
Check		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.2 Demolition - 2021

Unmitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.04	0.35	0.26	0.00		0.02	0.02		0.02	0.02
Total		0.04	0.35	0.26	0.00		0.02	0.02		0.02	0.02

Unmitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3 Demolition Haul - 2021

Unmitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.01	0.00	0.01	0.00	0.00	0.00
Off-Road		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00
Total		0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00

Unmitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.4 Site Preparation - 2021

Unmitigated Construction On-Site

		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	tons/yr										
Fugitive Dust						0.00	0.00	0.00	0.00	0.00	0.00
Off-Road		0.00	0.03	0.02	0.00		0.00	0.00		0.00	0.00
Total		0.00	0.03	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00

Unmitigated Construction Off-Site

		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	tons/yr										
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.5 Site Preparation Soil Haul - 2021

Unmitigated Construction On-Site

		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	tons/yr										
Fugitive Dust						0.00	0.00	0.00	0.00	0.00	0.00
Off-Road		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Unmitigated Construction Off-Site

		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	tons/yr										
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.6 Grading - 2021

Unmitigated Construction On-Site

		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	tons/yr										
Fugitive Dust						0.01	0.00	0.01	0.00	0.00	0.00
Off-Road		0.00	0.05	0.02	0.00		0.00	0.00		0.00	0.00
Total		0.00	0.05	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.01

Unmitigated Construction Off-Site

		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	tons/yr										
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7 Building Construction - 2021

Unmitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.03	0.28	0.30	0.00		0.02	0.02		0.02	0.02
Total		0.03	0.28	0.30	0.00		0.02	0.02		0.02	0.02

Unmitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.01	0.19	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker		0.03	0.02	0.19	0.00	0.06	0.00	0.06	0.02	0.00	0.02
Total		0.03	0.20	0.23	0.00	0.07	0.00	0.07	0.02	0.00	0.02

3.7 Building Construction - 2022

Unmitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.09	0.79	0.92	0.00		0.04	0.04		0.04	0.04
Total		0.09	0.79	0.92	0.00		0.04	0.04		0.04	0.04

Unmitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.02	0.54	0.11	0.00	0.03	0.00	0.03	0.01	0.00	0.01
Worker		0.07	0.05	0.54	0.00	0.18	0.00	0.18	0.05	0.00	0.05
Total		0.09	0.59	0.65	0.00	0.21	0.00	0.21	0.06	0.00	0.06

3.7 Building Construction - 2023

Unmitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00
Total		0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00

Unmitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Total		0.00	0.02	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00

3.8 Paving - 2023

Unmitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.01	0.05	0.07	0.00		0.00	0.00		0.00	0.00
Paving		0.00					0.00	0.00		0.00	0.00
Total		0.01	0.05	0.07	0.00		0.00	0.00		0.00	0.00

Unmitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9 Architectural Coating - 2023

Unmitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Archit. Coating		1.82					0.00	0.00		0.00	0.00
Off-Road		0.00	0.01	0.02	0.00		0.00	0.00		0.00	0.00
Total		1.82	0.01	0.02	0.00		0.00	0.00		0.00	0.00

Unmitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Criteria Air Pollutant Emissions Summary - Construction Unmitigated

Annual emissions divided by total construction duration to obtain average daily emissions. Average construction emissions accounts for the duration of each construction phase and the time each piece of construction equipment is onsite.

Total Construction Days	2021	2022	2023	Calendar Days
435	132	260	43	609

Unmigated Run - with Best Control Measures for Fugitive Dust

average lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total	10	11	12	0	1	0	2	0	0	1
BAAQMD Threshold	54	54	NA	NA	BMP	82	54	BMP	54	NA
Exceeds Threshold	No	No	NA	NA	NA	No	No	NA	No	NA

avg lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
TOTAL 2021	2	15	13	0	1	1	2	0	1	1
TOTAL 2022	1	11	12	0	2	0	2	0	0	1
TOTAL 2023	85	5	7	0	0	0	1	0	0	0
	79									

avg lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total Onsite	9.18	7.34	7.57	0.01	0.11	0.38	0.49	0.04	0.36	0.40
Total Offsite	0.58	3.93	4.25	0.02	1.36	0.02	1.38	0.37	0.01	0.38
	0	0			0	0		0	0	

FOR CONSTRUCTION RISK ASSESSMENT

Onsite Details

avg lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2021 Onsite	1.15	10.94	9.12	0.02	0.35	0.58	0.93	0.12	0.54	0.67
2022 Onsite	0.69	6.05	7.09	0.01	0.00	0.31	0.31	0.00	0.30	0.30
2023 Onsite	85.16	4.15	5.67	0.01	0.00	0.21	0.21	0.00	0.19	0.19
	78	14	14	0	0	1	1	0	1	1

Offsite Details

avg lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2021 Offsite	0.50	3.72	3.71	0.02	1.12	0.014	1.13	0.30	0.013	0.32
2022 Offsite	0.68	4.55	4.99	0.02	1.63	0.018	1.65	0.44	0.017	0.46
2023 Offsite	0.18	0.79	1.35	0.01	0.49	0.004	0.49	0.13	0.004	0.14
	1	5	6	0	2	0	2	1	0	1

Criteria Air Pollutant Emissions Summary - Construction

	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total Mitigated		2.00	1.92	2.70	0.01	0.32	0.01	0.33	0.09	0.01	0.10

MITIGATED with Tier 4 Interim Engines for eq. > 25 HP

	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total Onsite		1.87	1.07	1.78	0.00	0.02	0.01	0.03	0.01	0.01	0.01
Total Offsite		0.13	0.85	0.92	0.00	0.30	0.00	0.30	0.08	0.00	0.08
check		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

FOR CONSTRUCTION RISK ASSESSMENT - Mitigated Run

	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2021 Onsite		0.02	0.38	0.65	0.00	0.02	0.00	0.03	0.01	0.00	0.01
2021 Offsite		0.03	0.25	0.25	0.00	0.07	0.00	0.07	0.02	0.00	0.02
2022 Onsite		0.03	0.61	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022 Offsite		0.09	0.59	0.65	0.00	0.21	0.00	0.21	0.06	0.00	0.06
2023 Onsite		1.82	0.08	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023 Offsite		0.00	0.02	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00

FOR CONSTRUCTION REGIONAL EMISSIONS - Mitigated Run

	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total 2021		0.05	0.62	0.89	0.00	0.10	0.00	0.10	0.03	0.00	0.03
Total 2022		0.12	1.20	1.64	0.00	0.21	0.01	0.22	0.06	0.01	0.06
Total 2023		1.83	0.10	0.16	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Construction Total		2.00	1.92	2.70	0.01	0.32	0.01	0.33	0.09	0.01	0.10
Check		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.2 Demolition - 2021

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.01	0.15	0.28	0.00		0.00	0.00		0.00	0.00
Total		0.01	0.15	0.28	0.00		0.00	0.00		0.00	0.00

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3 Demolition Haul - 2021

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.01	0.00	0.01	0.00	0.00	0.00
Off-Road		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00
Total		0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.4 Site Preparation - 2021

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.00	0.00	0.00	0.00	0.00	0.00
Off-Road		0.00	0.01	0.02	0.00		0.00	0.00		0.00	0.00
Total		0.00	0.01	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.5 Site Preparation Soil Haul - 2021

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.00	0.00	0.00	0.00	0.00	0.00
Off-Road		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.6 Grading - 2021

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.01	0.00	0.01	0.00	0.00	0.00
Off-Road		0.00	0.01	0.03	0.00		0.00	0.00		0.00	0.00
Total		0.00	0.01	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7 Building Construction - 2021

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.01	0.20	0.32	0.00		0.00	0.00		0.00	0.00
Total		0.01	0.20	0.32	0.00		0.00	0.00		0.00	0.00

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.01	0.19	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker		0.03	0.02	0.19	0.00	0.06	0.00	0.06	0.02	0.00	0.02
Total		0.03	0.20	0.23	0.00	0.07	0.00	0.07	0.02	0.00	0.02

3.7 Building Construction - 2022

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.03	0.61	0.99	0.00		0.00	0.00		0.00	0.00
Total		0.03	0.61	0.99	0.00		0.00	0.00		0.00	0.00

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.02	0.54	0.11	0.00	0.03	0.00	0.03	0.01	0.00	0.01
Worker		0.07	0.05	0.54	0.00	0.18	0.00	0.18	0.05	0.00	0.05
Total		0.09	0.59	0.65	0.00	0.21	0.00	0.21	0.06	0.00	0.06

3.7 Building Construction - 2023

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.00	0.02	0.03	0.00		0.00	0.00		0.00	0.00
Total		0.00	0.02	0.03	0.00		0.00	0.00		0.00	0.00

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Total		0.00	0.02	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00

3.8 Paving - 2023

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.00	0.05	0.09	0.00		0.00	0.00		0.00	0.00
Paving		0.00					0.00	0.00		0.00	0.00
Total		0.00	0.05	0.09	0.00		0.00	0.00		0.00	0.00

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9 Architectural Coating - 2023

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Archit. Coating		1.82					0.00	0.00		0.00	0.00
Off-Road		0.00	0.01	0.02	0.00		0.00	0.00		0.00	0.00
Total		1.82	0.01	0.02	0.00		0.00	0.00		0.00	0.00

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Criteria Air Pollutant Emissions Summary - Construction Mitigated

Annual emissions divided by total construction duration to obtain average daily emissions. Average construction emissions accounts for the duration of each construction phase and the time each piece of construction equipment is onsite.

Total Construction Days	2021	2022	2023	2024	Calendar Days
435	132	260	43	0	609

Mitigated Run - with Tier 4 Interim Engines for eq. > 25 HP

average lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total	9	9	12	0	1	0	2	0	0	0
BAAQMD Threshold	54	54	NA	NA	BMP	82	54	BMP	54	NA
Exceeds Threshold	No	No	NA	NA	NA	No	No	NA	No	NA

avg lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
TOTAL 2021	1	9	14	0	1	0	2	0	0	0
TOTAL 2022	1	9	13	0	2	0	2	0	0	0
TOTAL 2023	85	5	8	0	0	0	1	0	0	0
	78									

avg lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total Onsite	9	5	8	0	0	0	0	0	0	0
Total Offsite	1	4	4	0	1	0	1	0	0	0
	0	0			0	0		0	0	

FOR CONSTRUCTION RISK ASSESSMENT

Onsite Details

avg lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2021 Onsite	0.29	5.72	9.84	0.02	0.35	0.03	0.39	0.12	0.03	0.15
2022 Onsite	0.23	4.68	7.63	0.01	0.00	0.03	0.03	0.00	0.03	0.03
2023 Onsite	84.88	3.77	6.31	0.01	0.00	0.02	0.02	0.00	0.02	0.02
	77	9	16	0	0	0	0	0	0	0

Offsite Details

avg lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2021 Offsite	0.501	3.725	3.715	0.018	1.116	0.014	1.131	0.303	0.013	0.317
2022 Offsite	0.679	4.551	4.994	0.025	1.631	0.018	1.648	0.443	0.017	0.459
2023 Offsite	0.183	0.786	1.352	0.007	0.489	0.004	0.492	0.132	0.004	0.136
	1	5	6	0	2	0	2	1	0	1

Criteria Air Pollutant Emissions Summary - Operations

Proposed Project

Mitigated Operational

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area		1.01	0.02	1.46	0.00		0.01	0.01		0.01	0.01
Energy		0.02	0.13	0.08	0.00		0.01	0.01		0.01	0.01
Mobile		1.99	4.35	16.68	0.05	5.06	0.05	5.10	1.35	0.04	1.40
Waste							0.00	0.00		0.00	0.00
Water							0.00	0.00		0.00	0.00
Total		3.02	4.50	18.22	0.06	5.06	0.06	5.12	1.35	0.06	1.42
BAAQMD Threshold (T/YR)		10	10	NA	NA	NA	NA	15	NA	NA	10
Exceeds thresholds		No	No					No			No

Criteria Air Pollutant Emissions Summary - Operations

Annual emissions divided by 365 days/year to obtain average daily emissions.

Proposed Project

lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area	5.53	0.09	7.98	0.00	0.00	0.04	0.04	0.00	0.04	0.04
Energy	0.08	0.74	0.44	0.00	0.00	0.06	0.06	0.00	0.06	0.06
Mobile	10.91	23.85	91.40	0.30	27.71	0.25	27.96	7.42	0.24	7.66
Waste	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	16.53	24.68	99.83	0.30	27.71	0.35	28.06	7.42	0.34	7.76
BAAQMD Threshold (Daily)	54	54					82			54
Exceeds Threshold	No	No					No			No

GHG Emissions

Source: CalEEMod, Version 2016.3.2.25.
$MTCO_2e$=metric tons of carbon dioxide equivalent.

Construction

	$MTCO_2e$
2021	270
2022	536
2023	33
Total Construction	**840**
30-Yr Amortized Construction Emissions**	**28**

Operations		
	$MTCO_2e$/Year	**Percent of Emissions**
Area	2	0.0%
Energy	310	6%
Mobile	5,093	92%
Solid Waste	122	2%
Water	10	0.2%
30-Yr Amortized Construction Emissions**	28	1%
Total Emissions	**5,566**	100%

** Total construction emissions are amortized over 30 years per BAAQMD methodology; International Energy Agency, 2008, Energy Efficiency Requirements in Building Codes, Energy Efficiency Policies for New Buildings, March.

Assumptions Worksheet

CalEEMod Inputs - Callan and E 14th Street Infill Checklist Project, Construction

Name:	Callan and E 14th Street Infill Checklist Project
Project Number:	COSL-04.1
Project Location:	northeast corner of Callan and E14th Street
County:	Alameda County
Climate Zone:	5
Land Use Setting:	Urban
Operational Year:	2023
Utility Company:	PG&E - East Bay Community Energy CCA
Air Basin:	San Francisco Bay Area Air Basin (SFBAAB)
Air District:	BAAQMD

Project Site Acreage	1.64
Disturbed Site Acreage	1.64

Project Components			
Demolition		**SQFT**	**Tons of Debris**
Building Demolition		31,335	1,441
Basement Demolition		8,000	368
Asphalt Demolition		40,103	594
New Construction	**Number of Units**	**SQFT**	**Acres of Building Footprint**
Residential Area			
Residential	196	127,743	0.00
Utilities		612	0.00
Amenities		4,240	0.00
Circulation/Miscellaneous		21,526	0.00
Podium Courtyard		13,847	0.00
Dog Area		1,197	0.00
Private Balconies & Roof Deck		4,897	0.00
Level 1 Utilities		3,898	0.09
Level 1 Amenities		1,653	0.04
Level 1 Circulation/Miscellaneous		4,758	0.11
Level 2 Utilities		1,467	0.00
Level 2 Circulation/Miscellaneous		4,201	0.00
Total Residential*		**170,098**	**0.24**
Retail Area			
Retail 1: Grocery Store		23,208	0.53
Retail 2: Bank		2,515	0.06
Retail 3: Shopping Center		1,598	0.04
Retail 4: Coffee Shop		1,547	0.04
Total Retail		**28,868**	**0.66**
Parking Garage		86,439	0.62
Bicycle Parking		818	0.00
Total Parking		**87,257**	**0.62**
Concrete Sidewalk		5,156	0.12
	TOTAL	**286,223**	**1.64**

*does not include the area for courtyard, dog area, private balconies and roof deck

CalEEMod Land Use Inputs

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet
Residential	Apartment (Mid-Rise)	196	DU	1.52	170,098
Retail	Supermarket	23.208	1000 sqft	0.00	23,208
Commercial	Bank (with Drive Thru)	2.515	1000 sqft	0.00	2,515
Retail	Regional Shopping Center	1.598	1000 sqft	0.00	1,598
Recreational	Fast Food without Drive Through	1.547	1000 sqft	0.00	1,547
Parking	Other Non-Asphalt Surfaces	5.156	1000 sqft	0.12	5,156
Parking	Enclosed Parking with Elevator	87.257	1000 sqft	0.00	87,257
				1.64	

Demolition

Component	Amount to be Demolished (Tons)	Haul Truck Capacity (tons)	Haul Distance (miles)	Total Trip Ends	Duration (days)	Trip Ends/ day
Building	1,809	20	20	181	36	5
Asphalt	594	20	20	60	36	2
Total	2,404			241		

Soil Haul

Construction Activities	Haul Volume (CY)	Haul Truck Capacity (cy)	Haul Distance (miles)	No. of total one-way haul (trip ends)	Duration (days)	Trip Ends/day
Site Preparation - export	177	16	20	22	4	6
TOTAL	**177**			**22**		6

Architectural Coating

Percentage of Proposed Buildings' Interior Painted: 100%

Percentage of Proposed Buildings' Exterior Painted: 100%

BAAQMD Regulation 8, Rule 3

Interior Paint VOC content: 100 grams per liter

Exterior Paing VOC content: 150 grams per liter

Structures	Land Use Square Feet	CalEEMod Factor[2]	Total Paintable Surface Area	Paintable Interior Area[1]	Paintable Exterior Area[1]
RESIDENTIAL					
Apartments (Mid-Rise)	170,098	2.7	459,265	344,448	114,816
			459,265	344,448	114,816
NONRESIDENTIAL					
Retail	28,868	2.0	57,736	43,302	14,434
Parking Structure	87,257	2.0	174,514	130,886	43,629
			174,514	174,188	58,063
Parking Structure	87,257	6%	5,235	-	5,235
			5,235		5,235

[1] CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively.

[2] The program assumes the total surface for painting equals 2.7 times the floor square footage for residential and 2 times that for nonresidential square footage defined by the user. Architectural coatings for the parking lot is based on CalEEMod methodology applied to a surface parking lot (i.e., striping), in which 6% of surface area is painted.

BAAQMD Construction BMPs

Replace Ground Cover	PM10:	5	% Reduction
Replace Ground Cover	PM2.5:	5	% Reduction
	PM25:	5	% Reduction
Water Exposed Area	Frequency:	2	per day
	PM10:	55	% Reduction
	PM25:	55	% Reduction
Unpaved Roads	Vehicle Speed:	15	mph
	Clean Paved Road	9	% PM Reduction

Construction Activities and Schedule Assumptions: Callan and E 14th Street Infill Checklist Project

* normalized durations based 20 months of construction, starting July 1, 2021, provided by the Applicant

CalEEMod Defaults

		Construction Schedule		
Construction Activities	**Phase Type**	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Demolition	Demolition	7/1/2021	7/28/2021	20
Site Preparation	Site Preparation	7/29/2021	7/30/2021	2
Grading	Grading	7/31/2021	8/5/2021	4
Building Construction	Building Construction	8/6/2021	5/12/2022	200
Paving	Paving	5/13/2022	5/26/2022	10
Architectural Coating	Architectural Coating	5/27/2022	6/9/2022	10

Normalization Calculations *

CalEEMod Defaults Construction Duration			Assumed Construction Duration	
343	days of construction		7/1/2021	3/1/2023
0.94	years of construction		608	days
11.28	months of construction		19.99	months
		Norm Factor:	1.77	

		Construction Schedule		
Construction Activities	**Phase Type**	**Start Date**	**End Date**	**Duration**
Demolition	Demolition	7/1/2021	8/19/2021	36
Demolition Debris Haul	*Demolition*	*7/1/2021*	*8/19/2021*	*36*
Site Preparation	Site Preparation	8/20/2021	8/25/2021	4
Site Preparation Soil Haul	*Site Preparation*	*8/20/2021*	*8/25/2021*	*4*
Grading	Grading	8/26/2021	9/5/2021	7
Building Construction	Building Construction	9/6/2021	1/12/2023	354
Paving	Paving	1/13/2023	2/6/2023	17
Architectural Coating	Architectural Coating	2/7/2023	3/1/2023	17

CalEEMod Construction Off-Road Equipment Inputs

**Based on CalEEMod defaults, assumed equipment would not be shared for most conservative results*

General Construction Hours: 8 hours btwn 7:00 AM to 4:00 PM (with 1 hr break), Mon-Fri

Construction Equipment Details						
Equipment	**model**	**# of Equipment**	**hr/day**	**hp**	**load factor***	**total trips**
Demolition						
Concrete/Industrial Saws		1	8	81	0.73	
Rubber Tired Dozers		1	8	247	0.4	
Tractors/Loaders/Backhoes		3	8	97	0.37	
Worker Trips						13
Vendor Trips						0
Hauling Trips						0
Water Trucks						2
Demolition Debris Haul						
no additional equipment required for Demolition Debris Haul						
Worker Trips						0
Vendor Trips						0
Hauling Trips						241
Site Preparation						
Graders		1	8	187	0.41	
Rubber Tired Dozers		1	7	247	0.4	
Tractors/Loaders/Backhoes		1	8	97	0.37	
Worker Trips						8
Vendor Trips						0
Hauling Trips						0
Water Trucks						2
Site Preparation Soil Haul						
no additional equipment required for Site Preparation Soil Haul						
Worker Trips						0
Vendor Trips						0
Hauling Trips						22
Grading						
Graders		1	6	187	0.41	
Rubber Tired Dozers		1	6	247	0.4	
Tractors/Loaders/Backhoes		1	7	97	0.37	
Worker Trips						8
Vendor Trips						0
Hauling Trips						0
Water Trucks						2
Building Construction						
Cranes*		1	1	231	0.29	
Forklifts		1	6	89	0.2	
Generator Sets		1	8	84	0.74	
Tractors/Loaders/Backhoes		1	6	97	0.37	
Welders**		3	1	46	0.45	
Worker Trips						189
Vendor Trips						41
Hauling Trips						0

* The crane would be used on site only for a portion of the total building construction duration. The crane is anticipated to be used fewer than 354 hours (1 hour for each day of building construction) per piece of equipment.

** Use of welders would be predominately used during the initial framing; and therefore, the hours of operation of the duration were reduced to one hour per day per welder to reflect the average duration for the entire 20 month construction building phase

Paving						
Cement and Mortar Mixers		1	6	9	0.56	
Pavers		1	6	130	0.42	
Paving Equipment		1	8	132	0.36	
Rollers		1	7	80	0.38	
Tractors/Loaders/Backhoes		1	8	97	0.37	
Worker Trips						13
Vendor Trips						0
Hauling Trips						0
Architectural Coating (surface lots, etc…)						
Air Compressors		1	6	78	0.48	
Worker Trips						38
Vendor Trips						0
Hauling Trips						0

Demo Haul Trip Calculation

*Conversion factors**

0.046	ton/SF
1.2641662	tons/cy
20	tons
15.82070459	CY
0.791035229	CY/ton

Building	BSF Demo	Tons/SF	Tons	Haul Truck (CY)	Haul Truck (Ton)	Round Trips	Total Trip Ends
Building Demo	31,335	0.046	1441.41	16	20.00	72	144
Basement Demo	8,000	0.046	368	16	20.00	18	37
Total	**39,335**		**1,809**			**90**	**181**

*CalEEMod User's Guide Version 2016.3.2, Appendix A

Pavement Volume to Weight Conversion

Component	Total SF of Area[1]	Assumed Thickness (foot)[2]	Debris Volume (cu. ft)	Weight of Crushed Asphalt (lbs/cf)[3]	AC Mass (lbs)	AC Mass (tons)
Asphalt Demo	40,103	0.333	13,368	89	1,188,249	594.12
Total	40,103					594

[1] Based on aerial image of existing project site.

[2] Pavements and Surface Materials. Nonpoint Education for Municipal Officials, Technical Paper Number 8. University of

[3] https://www.calrecycle.ca.gov/swfacilities/cdi/Tools/Calculations

Construction Trips Worksheet

Phase Name	Worker Trip Ends Per Day	Vendor Trip Ends Per Day	Haul Truck Trip Ends Per Day	Total Haul Truck Trip Ends	Start Date	End Date	Workdays
Demolition	13	2	0	0	7/1/2021	8/19/2021	36
Demolition Debris Haul	0	0	7	241	*7/1/2021*	*8/19/2021*	*36*
Site Preparation	8	2	0	0	8/20/2021	8/25/2021	4
Site Preparation Soil Haul	0	0	6	22	*8/20/2021*	*8/25/2021*	*4*
Grading	8	2	0	0	8/26/2021	9/5/2021	7
Building Construction	189	41	0	0	9/6/2021	1/12/2023	354
Paving	13	0	0	0	1/13/2023	2/6/2023	17
Architectural Coating	38	0	0	0	2/7/2023	3/1/2023	17

Construction Activity (Overlapping)	Worker Trip Ends Per Day	Vendor Trip Ends Per Day	Haul Truck Trip Ends Per Day	Total Trip Ends Per Day	Start Date	End Date	Workdays
Demolition and Demolition Debris Haul	13	2	7	22	7/1/2021	8/19/2021	36
Site Preparation and Soil Haul	8	2	6	16	8/20/2021	8/25/2021	4
Grading	8	2	0	10	8/26/2021	9/5/2021	7
Building Construction	189	41	0	230	9/6/2021	1/12/2023	354
Paving	13	0	0	13	1/13/2023	2/6/2023	17
Architectural Coating	38	0	0	38	2/7/2023	3/1/2023	17
Maximum Daily Trips	**189**	**41**	**7**	**230**			

CalEEMod Inputs - Callan and E 14th Street Infill Checklist Project, Operations

Name:	Callan and E 14th Street Infill Checklist Project
Project Number:	COSL-04.1
Project Location:	northeast corner of Callan and E14th Street
County:	Alameda County
Climate Zone:	5
Land Use Setting:	Urban
Operational Year:	2023
Utility Company:	PG&E - East Bay Community Energy CCA
Air Basin:	San Francisco Bay Area Air Basin (SFBAAB)
Air District:	BAAQMD

CalEEMod Land Use Inputs

Land Use Type*	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet
Residential*	Apartment (Mid-Rise)	196.000	DU	1.52	170,098
Retail	Supermarket	23.208	1000 sqft	0.00	23,208
Commercial	Bank (with Drive Thru)	2.515	1000 sqft	0.00	2,515
Retail	Regional Shopping Center	1.598	1000 sqft	0.00	1,598
Recreational	Fast Food without Drive Through	1.547	1000 sqft	0.00	1,547
Parking	Other Non-Asphalt Surfaces	5.156	1000 sqft	0.12	5,156
Parking	Enclosed Parking with Elevator	87.257	1000 sqft	0.00	87,257
				1.64	

*does not include the area for courtyard, dog area, private balconies and roof deck

Trips Information

Land Use Type	Average Weekday Trips	CalEEMod Trip Rate	Saturday Trips	CalEEMod Trip Rate	Sunday Trips*	CalEEMod Trip Rate
Residential [a]	628	**3.2053**	628	**3.2053**	628	**3.2053**
Total Residential	**628**		**628**		**628**	
Supermarket [b]	2,970	**127.9643**	3,713	**159.9943**	3,592	**154.7943**
Bank [c]	219	**87.0775**	219	**87.0775**	219	**87.0775**
Shopping Center	58	**36.4984**	72	**44.8684**	34	**21.1000**
Coffee Shop	1,079	**697.6657**	954	**616.7557**	565	**364.9357**
Total Retail	**4,326**		**4,958**		**4,410**	
	4,955		5,586		5,038	

Source: CHS Consulting. 2021. 1188 East 14th Street Mixed Use Development Transportation Impact Study

Notes:

[a] Residential Saturday and Sunday trips are assumed to be similar to average weekday trips.

[b] To show net number of trips, existing vehicle trips were subtracted from the supermarket trips

[c] Bank Saturday and Sunday trips were assumed to be similar to average weekday trips.

	Trip Type Percentages		
	Primary	Diverted	Passby
Apartments Mid Rise	86%	11%	3%
Bank (with Drive-Through)	27%	26%	47%
Enclosed Parking with Elevator	0%	0%	0%
Fast Food Restaurant w/o Drive Thru	51%	37%	12%
Other Non-Asphalt Surfaces	0%	0%	0%
Regional Shopping Center	54%	35%	11%
Supermarket	34%	30%	36%
Adjusted Trip Type Percentages	100%	0%	0%

Water Use CalEEMod Defaults

Land Use	Total (gal/day)[2]	Total (gal/yr)
Apartments Mid Rise [1]	33,400.00	12,191,000.00
TOTAL	33,400.00	12,191,000.00

*Assumes 100% aerobic treatment.

1 assigning all water use to apartments land use

[2] assumes all water is indoor water

Solid Waste CalEEMod Defaults*

Land Use	Total Solid Waste (tons/yr)
Apartments Mid Rise	90.16
Bank (with Drive-Through)	2.35
Enclosed Parking with Elevator	0.00
Fast Food Restaurant w/o Drive Thru	17.85
Other Non-Asphalt Surfaces	0.00
Regional Shopping Center	1.68
Supermarket	130.90
TOTAL	242.94

Electricity (Buildings)

Multifamily Residential Additional Electricity Reductions[2]	**2.0%**	more efficient than 2019 Title 24 electricity rates
Multifamily Residential Additional Natural Gas Reductions[2]	**5%**	more efficient than 2019 Title 24 natural gas rates
Non-residential Additional Electricity Reductions[2]	**10.7%**	more efficient than 2019 Title 24 electricity rates
Non-residential Additional Natural Gas Reductions[2]	**1%**	more efficient than 2019 Title 24 natural gas rates

Sources:

[1] California Energy Commission (CEC). 2018. 2019 Building Energy and Efficiency Standards Frequently Asked Questions. Accessed on April 3, 2019. http://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf

[2] NORESCO. 2018. 2019 Update to the California Energy Efficiency Standards for Residential and Non-Residential Buildings

Default CalEEMod Energy Use

Land Use Subtype	Title-24 Electricity Energy Intensity (kWhr/size/year)*	Nontitle-24 Electricity Energy Intensity (kWhr/size/year)	Lighting Energy Intensity (KWhr/size/year)	Title-24 Natural Gas Energy Intensity (KBTU/size/year)*	Nontitle-24 Natural Gas Energy Intensity (KBTU/size/year)
Apartments Mid Rise	**426.45**	3,054.10	741.44	**6,115.43**	2,615.00
Bank (with Drive-Through)	**1.21**	3.36	2.99	**17.85**	6.90
Enclosed Parking with Elevator	**3.92**	0.19	1.75	**0.00**	0.00
Fast Food Restaurant w/o Drive Thru	**2.67**	20.97	5.34	**39.90**	128.02
Other Non-Asphalt Surfaces	**0.00**	0.00	0.00	**0.00**	0.00
Regional Shopping Center	**2.24**	3.36	4.88	**3.90**	0.70
Supermarket	**2.72**	27.24	7.42	**24.53**	12.69

Adjusted CalEEMod Energy Use

Land Use Subtype	Title-24 Electricity Energy Intensity (kWhr/size/year)*	Nontitle-24 Electricity Energy Intensity (kWhr/size/year)	Lighting Energy Intensity (KWhr/size/year)	Title-24 Natural Gas Energy Intensity (KBTU/size/year)*	Nontitle-24 Natural Gas Energy Intensity (KBTU/size/year)
Apartments Mid Rise	**417.92**	3,054.10	741.44	**5,809.66**	2,615.00
Bank (with Drive-Through)	**1.08**	3.36	2.99	**17.67**	6.90
Enclosed Parking with Elevator	**3.50**	0.19	1.75	**0.00**	0.00
Fast Food Restaurant w/o Drive Thru	**2.38**	20.97	5.34	**39.50**	128.02
Other Non-Asphalt Surfaces	**0.00**	0.00	0.00	**0.00**	0.00
Regional Shopping Center	**2.00**	3.36	4.88	**3.86**	0.70
Supermarket	**2.43**	27.24	7.42	**24.28**	12.69

Architectural Coating

Percentage of Proposed Buildings'
Interior Painted: 100%

Percentage of Proposed Buildings'
Exterior Painted: 100%

BAAQMD Regulation 8, Rule 3

Interior Paint VOC content: 100 grams per liter
Exterior Paing VOC content: 150 grams per liter

Structures	Land Use Square Feet	CalEEMod Factor[2]	Total Paintable Surface Area	Paintable Interior Area[1]	Paintable Exterior Area[1]
RESIDENTIAL					
Apartments (Mid-Rise)	170,098	2.7	459,265	344,448	114,816
			459,265	344,448	114,816
NONRESIDENTIAL					
Retail	28,868	2.0	57,736	43,302	14,434
Parking Structure	87,257	2.0	174,514	130,886	43,629
			174,514	174,188	58,063
Parking Structure	87,257	6%	5,235	-	5,235
			5,235		5,235

[1]CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively.

[2] The program assumes the total surface for painting equals 2.7 times the floor square footage for residential and 2 times that for nonresidential square footage defined by the user. Architectural coatings for the parking lot is based on CalEEMod methodology applied to a surface parking lot (i.e., striping), in which 6% of surface area is painted.

Water Efficiency Requirements under the Water Efficient Landscape Ordinance (WELO) and Title 24 for Low-Flow Plumbing Fixtures

Install Low-Flow Bathroom Faucets
Install Low-Flow Kitchen Faucets
Install Low-Flow Toilet
Install Low-Flow Shower-Head
Use Water-Efficient Irrigation Systems

EBCE Carbon Intensity Factors

CO2:[1,2]	154.28	pounds per megawatt hour
CH4:[3]	0.01445414	pound per megawatt hour
N2O:[3]	0.001697195	pound per megawatt hour

[1]Based on CO2e intensity factor for EBCE (Bright Choice). EBCE. 2020. 2019 Power Content Label.
https://res.cloudinary.com/diactiwk7/image/upload/v1605298637/ebce_PCL_103020_digital_zt17hp.pdf. Accessed January 27, 2021

Changes to the CalEEMod Defaults - Residential Fleet Mix 2023

Trips 628

Default	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH	
FleetMix (Model Default)	0.561348	0.038614	0.190285	0.107199	0.015389	0.00518	0.024554	0.046236	0.002209	0.002456	0.005491	0.000334	0.000704	100%
Trips	353	24	120	67	10	3	15	29	1	2	3	0	0	628
Percent	80%			11%	10%									100%
without buses/MH	0.561348	0.038614	0.190285	0.107199	0.015389	0.005180	0.024554	0.046236	0	0	0.005491	0	0	99%
Percent	80%			11%	9%									99%
Adjusted without buses/MH	0.561348	0.038614	0.190285	0.107199	0.016350	0.005503	0.026087	0.049122	0.000000	0.000000	0.005834	0.000000	0.000000	
Percent adjusted	80%			11%	10%									100%
Assumed Mix	97.0%			2.00%	1.00%									100%
adjusted with Assumed	0.683985	0.047050	0.231856	0.020000	0.001684	0.000567	0.002688	0.005061	0.000000	0.000000	0.007108	0.000000	0.000000	100%
Percent Check:	97%			2%	1%									
Trips	430	30	146	13	1	0	2	3	0	0	4	0	0	628

East Bay Clean Energy Carbon Intensity Factor Calculator

The project team calculated a custom electricity emissions factor for East Bay Community Energy (EBCE) by consulting the most recent data from the US EPA's Emissions & Generation Resource Integrated Database (eGRID). This database includes records of GHG emissions and power generation by all power plants in the United States. Using this information, the team determined the electricity emissions factor for all power plants within California by fuel source, since it is not feasible to identify the specific power plants that supply EBCE. The team consulted EBCE's Power Mix, which identifies the percent of EBCE's electricity generated by various fuel sources. Using the average emissions factor for power plants by fuel source, in combination with EBCE's specific fuel mix, the team was able to calculate an emissions factor that accurately reflects EBCE's particular sources of electricity.

Source: EBCE. 2020. 2019 Power Content Label.
https://res.cloudinary.com/diactiwk7/image/upload/v1605298637/ebce_PCL_103020_digital_zt17hp.pdf. Accessed January 27,

$MTCO_2e$			$MTCO_2e/kWh$
Source	**Percent**	**Adjusted percent**	**Emission factor**
Coal	0.00%	0.00%	0.00052518
Large hydro	25.30%	25.25%	0.00000000
Natural gas	0.10%	0.10%	0.00040027
Nuclear	1.50%	1.50%	0.00000000
Oil	0.00%	0.00%	0.00061190
Other/unspecified	13.30%	13.27%	0.00042800
Biomass	3.60%	3.59%	0.00006741
Geothermal	12.30%	12.28%	0.00008747
Small hydro	4.90%	4.89%	0.00000000
Solar	3.50%	3.49%	0.00000000
Wind	35.70%	35.63%	0.00000000
	100.20%	100.00%	

	MTCO2e/kWh
Emission factor	**0.000070370**
Calculation check	0.000070370
	MTCO2e/MWh
	0.0703696528
	lbsCO2e/MWh
	155.137

East Bay Clean Energy Carbon Intensity Factor Calculator

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$MTCO_2$			$MTCO_2$/kWh
Source	**Percent**	**Adjusted percent**	**Emission factor**
Coal	0.00%	0.00%	0.000525182
Large hydro	25.30%	25.25%	0
Natural gas	0.10%	0.10%	0.000400274
Nuclear	1.50%	1.50%	0
Oil	0.00%	0.00%	0.0006119
Other/unspecified	13.30%	13.27%	0.00042508
Biomass	3.60%	3.59%	6.7393E-05
Geothermal	12.30%	12.28%	8.74747E-05
Small hydro	4.90%	4.89%	0
Solar	3.50%	3.49%	0
Wind	35.70%	35.63%	0
	100.20%	100.00%	

	MTCO2/kWh
Emission factor	**0.0000699821**

MTCO2/MWh
0.069982054496
lbsCO2/MWh
154.282

East Bay Clean Energy Carbon Intensity Factor Calculator

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$MTCH_4$			$MTCO_4$/kWh
Source	**Percent**	**Adjusted percent**	**Emission factor**
Coal	0.00%	0.00%	5.89676E-12
Large hydro	25.30%	25.25%	0
Natural gas	0.10%	0.10%	7.52558E-12
Nuclear	1.50%	1.50%	0
Oil	0.00%	0.00%	2.00932E-11
Other/unspecified	13.30%	13.27%	0.00000005
Biomass	3.60%	3.59%	2.51224E-10
Geothermal	12.30%	12.28%	0
Small hydro	4.90%	4.89%	0
Solar	3.50%	3.49%	0
Wind	35.70%	35.63%	0
	100.20%	100.00%	

	MTCH4/kWh
Emission factor	**0.000000006556**

MTCH4/MWh
0.0000065563547842
lbsCH4/MWh
0.014454

East Bay Clean Energy Carbon Intensity Factor Calculator

The project team calculated a custom electricity emissions factor for East Bay Community Energy (EBCE) by consulting the most recent data from the US EPA's Emissions & Generation Resource Integrated Database (eGRID). This database includes records of GHG emissions and power generation by all power plants in the United States. Using this information, the team determined the electricity emissions factor for all power plants within California by fuel source, since it is not feasible to identify the specific power plants that supply EBCE. The team consulted EBCE's Power Mix, which identifies the percent of EBCE's electricity generated by various fuel sources. Using the average emissions factor for power plants by fuel source, in combination with EBCE's specific fuel mix, the team was able to calculate an emissions factor that accurately reflects EBCE's particular sources of electricity.

MTN_2O			MTN_2O/kWh
Source	**Percent**	**Adjusted percent**	**Emission factor**
Coal	0.00%	0.00%	8.61834E-12
Large hydro	25.30%	25.25%	0
Natural gas	0.10%	0.10%	8.14808E-13
Nuclear	1.50%	1.50%	0
Oil	0.00%	0.00%	3.97229E-12
Other/unspecified	13.30%	13.27%	0.00
Biomass	3.60%	3.59%	3.29476E-11
Geothermal	12.30%	12.28%	0
Small hydro	4.90%	4.89%	0
Solar	3.50%	3.49%	0
Wind	35.70%	35.63%	0
	100.20%	100.00%	

	MTN2O/kWh
Emission factor	**0.000000001**

MTN2O/MWh
0.00000076984282129
lbsN2O/MWh
0.00169720

EMFAC2017 Derived CalEEMod Annual Emission Rates: Year 2023[1,2]

Season	Pollutant	LDA	LDT1	LDT2	MDV	LHDT1	LHDT2	MHDT	HHDT	OBUS	UBUS	MCY	SBUS	MH
Annual	CH4_IDLEX	0	0	0	0	0.0053748	0.003691959	0.00273766	0.02398381	0.0084728	0	0	0.0676018	0
Annual	CH4_RUNEX	0.0021173	0.0042578	0.0032185	0.0038518	0.0089071	0.00717384	0.001502715	0.029542244	0.0072806	1.0293643	0.3432237	0.0044001	0.0046785
Annual	CH4_STREX	0.0506828	0.069206	0.0688808	0.0817701	0.0154953	0.009960649	0.007196049	2.24586E-07	0.0228574	0.0010303	0.2600933	0.0058296	0
Annual	CO_IDLEX	0	0	0	0	0.1882091	0.148792952	0.355516334	6.665948379	0.5756636	0	0	2.7744592	0
Annual	CO_RUNEX	0.5664501	0.9261823	0.752724	0.8250541	0.8059097	0.631190564	0.216115297	0.340961841	0.8117192	7.4476663	20.147924	0.3481423	0.3499595
Annual	CO_STREX	2.2448361	2.4465785	2.8680526	3.2632302	1.1164799	0.722619425	0.845096635	0.004251165	2.5435059	0.0730707	9.1004976	0.8475967	0
Annual	CO2_NBIO_IDLEX	0	0	0	0	8.9418066	13.6057502	73.91886049	1103.404965	82.954502	0	0	342.95094	0
Annual	CO2_NBIO_RUNEX	250.59767	299.2439	321.37111	386.65733	806.45172	797.4313145	1059.433679	1394.591519	1469.4554	1639.8935	215.40708	997.56319	1001.6996
Annual	CO2_NBIO_STREX	53.038888	64.042551	69.306791	83.080565	12.207486	9.133668414	7.098567054	0.04715888	19.884952	0.8385921	61.825423	4.8924186	0
Annual	NOX_IDLEX	0	0	0	0	0.0568429	0.089323964	0.429330401	5.512618213	0.3153977	0	0	2.8784232	0
Annual	NOX_RUNEX	0.0354327	0.0790333	0.0653219	0.0802553	0.7554032	0.861452636	1.42737185	2.577216562	1.2324261	1.1179429	1.1676891	3.5719098	3.860922
Annual	NOX_STREX[3]	0.1876354	0.2516834	0.2825705	0.3431102	0.3406902	0.22324005	1.813109544	2.278603245	0.8035982	0.0087755	0.2736958	1.108368	0
Annual	PM10_IDLEX	0	0	0	0	0.0007925	0.001293491	0.000355117	0.002407843	0.0001061	0	0	0.0029748	0
Annual	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.089180026	0.130340037	0.06122595	0.13034	0.0741758	0.01176	0.7448002	0.13034
Annual	PM10_PMTW	0.008	0.008	0.008	0.008	0.0096773	0.010567602	0.012000003	0.035692608	0.012	0.0316072	0.004	0.0105992	0.016
Annual	PM10_RUNEX	0.0014465	0.0018239	0.0014408	0.0015675	0.0103811	0.014914395	0.006801561	0.025154892	0.0068522	0.005647	0.0020687	0.0216291	0.0789666
Annual	PM10_STREX	0.0017645	0.0023358	0.0017672	0.00196	0.0002604	0.000144004	8.12449E-05	2.80141E-07	0.0001931	6.366E-06	0.0031978	6.868E-05	0
Annual	PM25_IDLEX	0	0	0	0	0.0007582	0.001237535	0.000339755	0.002303681	0.0001015	0	0	0.0028461	0
Annual	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.038220011	0.055860016	0.026239693	0.05586	0.0317896	0.00504	0.3192001	0.05586
Annual	PM25_PMTW	0.002	0.002	0.002	0.002	0.0024193	0.0026419	0.003000001	0.008923152	0.003	0.0079018	0.001	0.0026498	0.004
Annual	PM25_RUNEX	0.0013333	0.0016786	0.0013262	0.0014456	0.0098825	0.01424131	0.006503209	0.02406669	0.0065372	0.0054023	0.0019349	0.0206749	0.0755505
Annual	PM25_STREX	0.0016224	0.0021477	0.0016249	0.0018024	0.0002395	0.000132406	7.47017E-05	2.57579E-07	0.0001776	5.854E-06	0.0030123	6.314E-05	0
Annual	ROG_DIURN	0.0378897	0.0821107	0.0568591	0.0660698	0.0018484	0.001087519	0.000277982	1.51045E-06	0.0014594	0.0001268	0.8033368	0.0003276	0
Annual	ROG_HTSK	0.1003209	0.1785494	0.125834	0.1429966	0.0772104	0.047457433	0.014968348	7.71423E-05	0.0232043	0.0006909	0.7254905	0.0032319	0
Annual	ROG_IDLEX	0	0	0	0	0.0219132	0.017400217	0.015243384	0.45039374	0.0502839	0	0	0.3055897	0
Annual	ROG_RESTL	0.0374083	0.0739117	0.0599855	0.0703775	0.0010565	0.00063173	0.000162759	1.00477E-06	0.0006885	3.131E-05	0.4975696	0.0001559	0
Annual	ROG_RUNEX	0.0082187	0.0182947	0.0128902	0.0161668	0.0937042	0.107182511	0.014932952	0.024113692	0.0405209	0.0148305	2.3375558	0.0590411	0.100725
Annual	ROG_RUNLS	0.2170801	0.6544328	0.4389177	0.4674139	0.552774	0.315743572	0.085405208	0.000396639	0.2672734	0.004121	2.1812547	0.0212993	0
Annual	ROG_STREX	0.2284913	0.3416879	0.3203635	0.4066838	0.0778117	0.049586674	0.038302696	1.17378E-06	0.118841	0.0044805	1.9934099	0.0323274	0
Annual	SO2_IDLEX	0	0	0	0	8.684E-05	0.000130375	0.00070055	0.010331014	0.00079	0	0	0.0032695	0
Annual	SO2_RUNEX	0.0024483	0.0029244	0.00314	0.0037756	0.0078807	0.007720051	0.010074384	0.012924952	0.0142536	0.0126262	0.0021316	0.0095533	0.0094697
Annual	SO2_STREX	0.0005183	0.0006259	0.0006773	0.0008119	0.0001208	9.03851E-05	7.02461E-05	4.66675E-07	0.0001968	8.299E-06	0.0006118	4.841E-05	0
Annual	TOG_DIURN	0.0379124	0.0821599	0.0568932	0.0661094	0.0018484	0.001087519	0.000277982	1.51045E-06	0.0014594	0.0001268	0.8033368	0.0003276	0
Annual	TOG_HTSK	0.100381	0.1786565	0.1259094	0.1430823	0.0772104	0.047457433	0.014968348	7.71423E-05	0.0232043	0.0006909	0.7254905	0.0032319	0
Annual	TOG_IDLEX	0	0	0	0	0.0309825	0.023780049	0.020351521	0.515820072	0.0661666	0	0	0.4391748	0
Annual	TOG_RESTL	0.0374307	0.0739561	0.0600215	0.0704197	0.0010565	0.00063173	0.000162759	1.00477E-06	0.0006885	3.131E-05	0.4975696	0.0001559	0
Annual	TOG_RUNEX	0.0119424	0.0266934	0.0187829	0.0234843	0.1158184	0.125983672	0.018615298	0.056064893	0.0568865	1.0506832	2.8873988	0.0703986	0.1146687
Annual	TOG_RUNLS	0.2172104	0.6548255	0.4391811	0.4676944	0.552774	0.315743572	0.085405208	0.000396639	0.2672734	0.004121	2.1812547	0.0212993	0
Annual	TOG_STREX	0.2503437	0.3743665	0.351003	0.4455749	0.085194	0.054291167	0.041936631	1.28514E-06	0.130116	0.0049055	2.1691618	0.0353944	0
Summer	CH4_IDLEX	0	0	0	0	0.0053917	0.003703292	0.002588685	0.025363173	0.0085637	0	0	0.0677016	0
Summer	CH4_RUNEX	0.0024012	0.004781	0.0036366	0.004347	0.0091612	0.007279721	0.001545239	0.029543611	0.0075601	1.0293658	0.3319245	0.0044792	0.0046785
Summer	CH4_STREX	0.0420275	0.0569504	0.0570206	0.0676109	0.0145383	0.009346439	0.006728656	2.07925E-07	0.0212847	0.0009067	0.2137596	0.0048183	0
Summer	CO_IDLEX	0	0	0	0	0.1882091	0.148792952	0.307400655	6.575204884	0.5709732	0	0	2.7432212	0

Summer	CO_RUNEX	0.6710614	1.0827808	0.8867076	0.9684154	0.8274451	0.639580359	0.220478976	0.34155421	0.8404404	7.4477369	19.075409	0.3555838	0.3499595
Summer	CO_STREX	1.7167249	1.8654523	2.1892841	2.4811466	1.027589	0.665477768	0.768884223	0.003867911	2.2964147	0.0585394	7.7932251	0.6049671	0
Summer	CO2_NBIO_IDLEX	0	0	0	0	8.9418066	13.6057502	73.79572868	1089.963722	82.026825	0	0	348.63659	0
Summer	CO2_NBIO_RUNEX	270.53078	319.79032	341.40787	406.92784	806.49172	797.4466979	1059.441451	1394.59249	1469.507	1639.8937	213.347	997.57659	1001.6996
Summer	CO2_NBIO_STREX	52.049846	62.891313	68.017706	81.569703	12.049461	9.032195902	6.968822073	0.046551117	19.464775	0.813658	58.504827	4.4888977	0
Summer	NOX_IDLEX	0	0	0	0	0.0568429	0.089323964	0.419786586	5.254919148	0.2997233	0	0	2.922316	0
Summer	NOX_RUNEX	0.0314925	0.0695859	0.057778	0.0709793	0.7187017	0.824533085	1.369074164	2.481317751	1.166395	1.1177656	1.0193997	3.4228479	3.7108958
Summer	NOX_STREX[3]	0.1642381	0.2203633	0.2473586	0.3003517	0.3149467	0.206371345	1.807907413	2.278590275	0.7848975	0.008102	0.2487538	1.1038791	0
Summer	PM10_IDLEX	0	0	0	0	0.0007925	0.001293491	0.000302718	0.002117406	9.43E-05	0	0	0.0025166	0
Summer	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.089180026	0.130340037	0.06122595	0.13034	0.0741758	0.01176	0.7448002	0.13034
Summer	PM10_PMTW	0.008	0.008	0.008	0.008	0.0096773	0.010567602	0.012000003	0.035692608	0.012	0.0316072	0.004	0.0105992	0.016
Summer	PM10_RUNEX	0.0014465	0.0018239	0.0014408	0.0015675	0.0103811	0.014914395	0.006801561	0.025154892	0.0068522	0.005647	0.0020687	0.0216291	0.0789666
Summer	PM10_STREX	0.0017645	0.0023358	0.0017672	0.00196	0.0002604	0.000144004	8.12449E-05	2.80141E-07	0.0001931	6.366E-06	0.0031978	6.868E-05	0
Summer	PM25_IDLEX	0	0	0	0	0.0007582	0.001237535	0.000289623	0.002025807	9.022E-05	0	0	0.0024077	0
Summer	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.038220011	0.055860016	0.026239693	0.05586	0.0317896	0.00504	0.3192001	0.05586
Summer	PM25_PMTW	0.002	0.002	0.002	0.002	0.0024193	0.0026419	0.003000001	0.008923152	0.003	0.0079018	0.001	0.0026498	0.004
Summer	PM25_RUNEX	0.0013333	0.0016786	0.0013262	0.0014456	0.0098825	0.01424131	0.006503209	0.02406669	0.0065372	0.0054023	0.0019349	0.0206749	0.0755505
Summer	PM25_STREX	0.0016224	0.0021477	0.0016249	0.0018024	0.0002395	0.000132406	7.47017E-05	2.57579E-07	0.0001776	5.854E-06	0.0030123	6.314E-05	0
Summer	ROG_DIURN	0.0943528	0.208303	0.1390735	0.1614904	0.0045636	0.002678735	0.000699151	3.87807E-06	0.0034904	0.0003071	2.337832	0.0008124	0
Summer	ROG_HTSK	0.1103183	0.2031555	0.1385444	0.1569163	0.0859156	0.053470667	0.016751242	8.36622E-05	0.0247039	0.0007689	0.9700064	0.0034016	0
Summer	ROG_IDLEX	0	0	0	0	0.0219132	0.017400217	0.014836727	0.476833176	0.0516316	0	0	0.3057482	0
Summer	ROG_RESTL	0.0797055	0.1594761	0.1255544	0.1480223	0.0022696	0.001356898	0.000362988	2.31066E-06	0.0014711	6.673E-05	1.432831	0.000359	0
Summer	ROG_RUNEX	0.0091562	0.0202675	0.0143384	0.0179171	0.0950622	0.107665998	0.015131235	0.024121178	0.0419181	0.0148347	2.2366839	0.0594142	0.100725
Summer	ROG_RUNLS	0.2030509	0.6009205	0.4047144	0.4324264	0.5338397	0.304349292	0.081996996	0.000386617	0.2595424	0.0037143	2.0337455	0.0180202	0
Summer	ROG_STREX	0.1862175	0.2766613	0.2607657	0.3304908	0.0727094	0.046339705	0.035638517	1.09214E-06	0.1103446	0.0039141	1.6176918	0.0266864	0
Summer	SO2_IDLEX	0	0	0	0	8.684E-05	0.000130375	0.000699499	0.010204827	0.0007813	0	0	0.0033232	0
Summer	SO2_RUNEX	0.0026431	0.0031252	0.0033358	0.0039737	0.0078811	0.007720203	0.010074461	0.012924962	0.0142541	0.0126262	0.0021112	0.0095534	0.0094697
Summer	SO2_STREX	0.0005087	0.0006146	0.0006647	0.0007972	0.0001192	8.93809E-05	6.89621E-05	4.60661E-07	0.0001926	8.052E-06	0.000579	4.442E-05	0
Summer	TOG_DIURN	0.0944092	0.208428	0.1391568	0.1615873	0.0045636	0.002678735	0.000699151	3.87807E-06	0.0034904	0.0003071	2.337832	0.0008124	0
Summer	TOG_HTSK	0.1103844	0.2032774	0.1386275	0.1570104	0.0859156	0.053470667	0.016751242	8.36622E-05	0.0247039	0.0007689	0.9700064	0.0034016	0
Summer	TOG_IDLEX	0	0	0	0	0.0309825	0.023780049	0.019675284	0.54607133	0.0677008	0	0	0.4393553	0
Summer	TOG_RESTL	0.0797532	0.1595718	0.1256297	0.1481111	0.0022696	0.001356898	0.000362988	2.31066E-06	0.0014711	6.673E-05	1.432831	0.000359	0
Summer	TOG_RUNEX	0.0133111	0.0295739	0.0208976	0.0260394	0.1177999	0.126689175	0.018904632	0.056075817	0.0589252	1.0506894	2.7663294	0.070943	0.1146687
Summer	TOG_RUNLS	0.2031727	0.601281	0.4049572	0.4326858	0.5338397	0.304349292	0.081996996	0.000386617	0.2595424	0.0037143	2.0337455	0.0180202	0
Summer	TOG_STREX	0.204027	0.3031209	0.2857053	0.3620962	0.0796076	0.050736145	0.03901969	1.19575E-06	0.1208134	0.0042855	1.7604336	0.0292182	0

Winter	CH4_IDLEX	0	0	0	0	0.0053616	0.003683134	0.002882935	0.019220109	0.0083667	0	0	0.0675207	0
Winter	CH4_RUNEX	0.0020447	0.004127	0.0031101	0.0037328	0.0087278	0.007097565	0.001473287	0.001107628	0.0070903	1.0293633	0.3548561	0.0043444	0.0046785
Winter	CH4_STREX	0.0564673	0.0774249	0.0768154	0.0912632	0.0162387	0.010437753	0.007544148	2.37229E-07	0.0239709	0.001123	0.3001517	0.0065988	0
Winter	CO_IDLEX	0	0	0	0	0.1882091	0.148792952	0.405473132	6.734212108	0.5821409	0	0	2.8175975	0
Winter	CO_RUNEX	0.5612013	0.9197077	0.7462373	0.8198378	0.7909714	0.625335424	0.213196061	0.245804591	0.7925606	7.4476191	21.831171	0.3430005	0.3499595
Winter	CO_STREX	2.6281154	2.8683964	3.3603262	3.8311288	1.1956448	0.773321352	0.909177243	0.004573112	2.7369409	0.085206	10.434177	1.055708	0
Winter	CO2_NBIO_IDLEX	0	0	0	0	8.9418066	13.6057502	74.18416367	1111.962627	84.23558	0	0	335.09933	0
Winter	CO2_NBIO_RUNEX	248.61207	297.20298	319.37763	384.64416	806.42398	797.4205461	1059.42847	1368.032946	1469.421	1639.8935	218.44101	997.55391	1001.6996
Winter	CO2_NBIO_STREX	53.751976	64.871754	70.235257	84.169853	12.346355	9.222554093	7.20691255	0.047669397	20.211841	0.8592704	65.04353	5.2367242	0
Winter	NOX_IDLEX	0	0	0	0	0.0568429	0.089323964	0.442523226	5.816474731	0.3370434	0	0	2.8178093	0
Winter	NOX_RUNEX	0.0388638	0.086898	0.0717767	0.0881632	0.7731765	0.878320081	1.452175971	2.609723249	1.2644519	1.1180427	1.2533704	3.6360861	3.922965
Winter	NOX_STREX[3]	0.2039457	0.273464	0.3070985	0.3728913	0.3612314	0.23670233	1.817156457	2.278613334	0.8182628	0.0092758	0.2921425	1.1116622	0
Winter	PM10_IDLEX	0	0	0	0	0.0007925	0.001293491	0.000427477	0.002749645	0.0001225	0	0	0.0036076	0
Winter	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.089180026	0.130340037	0.060692313	0.13034	0.0741758	0.01176	0.7448002	0.13034
Winter	PM10_PMTW	0.008	0.008	0.008	0.008	0.0096773	0.010567602	0.012000003	0.035381449	0.012	0.0316072	0.004	0.0105992	0.016
Winter	PM10_RUNEX	0.0014465	0.0018239	0.0014408	0.0015675	0.0103811	0.014914395	0.006801561	0.025118769	0.0068522	0.005647	0.0020687	0.0216291	0.0789666
Winter	PM10_STREX	0.0017645	0.0023358	0.0017672	0.00196	0.0002604	0.000144004	8.12449E-05	2.80141E-07	0.0001931	6.366E-06	0.0031978	6.868E-05	0
Winter	PM25_IDLEX	0	0	0	0	0.0007582	0.001237535	0.000408985	0.002630696	0.0001172	0	0	0.0034515	0
Winter	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.038220011	0.055860016	0.026010991	0.05586	0.0317896	0.00504	0.3192001	0.05586
Winter	PM25_PMTW	0.002	0.002	0.002	0.002	0.0024193	0.0026419	0.003000001	0.008845362	0.003	0.0079018	0.001	0.0026498	0.004
Winter	PM25_RUNEX	0.0013333	0.0016786	0.0013262	0.0014456	0.0098825	0.01424131	0.006503209	0.02403213	0.0065372	0.0054023	0.0019349	0.0206749	0.0755505
Winter	PM25_STREX	0.0016224	0.0021477	0.0016249	0.0018024	0.0002395	0.000132406	7.47017E-05	2.57579E-07	0.0001776	5.854E-06	0.0030123	6.314E-05	0
Winter	ROG_DIURN	0.0157723	0.0321678	0.0248528	0.0289203	0.0007575	0.000459555	0.000114698	6.61148E-07	0.0006819	6.233E-05	0.2137817	0.0001479	0
Winter	ROG_HTSK	0.1042382	0.1902209	0.1306688	0.1482782	0.0856335	0.051379991	0.015710902	8.20804E-05	0.0239417	0.0007155	0.8642299	0.0033056	0
Winter	ROG_IDLEX	0	0	0	0	0.0219132	0.017400217	0.015551653	0.413803686	0.0484229	0	0	0.3053708	0
Winter	ROG_RESTL	0.0180503	0.0353846	0.0292687	0.0341118	0.0005095	0.000312257	7.77406E-05	4.67371E-07	0.0003564	1.653E-05	0.1756941	7.776E-05	0
Winter	ROG_RUNEX	0.0080357	0.0179297	0.0126013	0.0158866	0.0927611	0.10683757	0.014797886	0.023212731	0.0395765	0.0148277	2.4396037	0.058779	0.100725
Winter	ROG_RUNLS	0.255106	0.8039335	0.5333046	0.5647211	0.6131485	0.352953422	0.096663683	0.000440617	0.2919324	0.0051505	2.5829377	0.0275904	0
Winter	ROG_STREX	0.2577846	0.3869941	0.3616926	0.4597146	0.0818	0.052124768	0.040320483	1.23561E-06	0.1248828	0.0049103	2.3257255	0.0366274	0
Winter	SO2_IDLEX	0	0	0	0	8.684E-05	0.000130375	0.000702944	0.010505272	0.0008021	0	0	0.0031954	0
Winter	SO2_RUNEX	0.0024289	0.0029044	0.0031205	0.0037559	0.0078804	0.007719944	0.010074333	0.012924946	0.0142532	0.0126262	0.0021617	0.0095532	0.0094697
Winter	SO2_STREX	0.0005253	0.000634	0.0006864	0.0008226	0.0001222	9.12646E-05	7.13182E-05	4.71727E-07	0.0002	8.503E-06	0.0006437	5.182E-05	0
Winter	TOG_DIURN	0.0157818	0.0321871	0.0248677	0.0289376	0.0007575	0.000459555	0.000114698	6.61148E-07	0.0006819	6.233E-05	0.2137817	0.0001479	0
Winter	TOG_HTSK	0.1043007	0.190335	0.1307471	0.1483671	0.0856335	0.051379991	0.015710902	8.20804E-05	0.0239417	0.0007155	0.8642299	0.0033056	0
Winter	TOG_IDLEX	0	0	0	0	0.0309825	0.023780049	0.020915752	0.471083998	0.0640479	0	0	0.4389257	0
Winter	TOG_RESTL	0.0180611	0.0354058	0.0292863	0.0341322	0.0005095	0.000312257	7.77406E-05	4.67371E-07	0.0003564	1.653E-05	0.1756941	7.776E-05	0
Winter	TOG_RUNEX	0.0116749	0.0261601	0.018361	0.0230722	0.1144422	0.125480335	0.01841821	0.026480978	0.0555084	1.0506791	3.0104365	0.0700161	0.1146687
Winter	TOG_RUNLS	0.255259	0.8044158	0.5336246	0.56506	0.6131485	0.352953422	0.096663683	0.000440617	0.2919324	0.0051505	2.5829377	0.0275904	0
Winter	TOG_STREX	0.2824383	0.4240056	0.3962847	0.5036764	0.0895607	0.05707006	0.044145853	1.35284E-06	0.136731	0.0053762	2.5306479	0.0401024	0

1 Source: California Air Resources Board. EMFAC2017 Web Database. https://www.arb.ca.gov/emfac/2017/; California Air Pollution Control Officers Association (CAPCOA). 2017, November. California Emissions Estimator Model User's Guide, Version 2016.3.2, Appendix A.

2 Unless otherwise noted, per CalEEMod methodology, the calculated CalEEMod emission rates are derived from the emission rates obtained using the EMFAC2017 Web Database.

3 Because EMFAC2017 provides vehicle trips data for MHDT and HHDT diesel trucks, the formula provided in Appendix A of the CalEEMod User's Guide in calculating the NO_X STREX emission rates are utilized.

Source: EMFAC2017 (v1.0.3) Emission Rates
Region Type: Sub-Area
Region: Alameda (SF)
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX, RESTLOSS and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_DI	PM2.5_PM	PM10_RUN	PM10_IDLE	PM10_STR	PM10_DIU	PM10_PMT	PM10_PMI	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_HOTS	ROG_RUNL	ROG_RESTL	ROG_DIUR	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_HOTS	TOG_RUNL	TOG_RESTL	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNEX	SOx_IDLEX	SOx_STREX
Alameda (S	2023	HHDT	Aggregate	Aggregate	Gasoline	8.469319	953.4549	169.4541	3.205989	0	0.165579	0.000656	0	0.000252	0.005	0.02646	0.000713	0	0.000274	0.02	0.06174	2095.284	0	46.15712	0.080133	0	0.00022	0.135349	0	0.005692	0.369049	0	0.001149	0.075504	0.388214	0.019676	0.029579	0.538516	0	0.001258	0.075504	0.388214	0.019676	0.029579	32.02194	0	4.160862	0.020735	0	0.000457
Alameda (S	2023	HHDT	Aggregate	Aggregate	Diesel	15086.83	1974725	164037	2.590408	60.05913	2.30368	0.024253	0.024804	0	0.008924	0.026238	0.02535	0.025926	0	0.035698	0.061221	1379.616	12021.41	0	0.00108	0.229936	0	0.216856	1.889398	0	0.023253	4.950467	0	0	0	0	0	0.026472	5.635729	0	0	0	0	0	0.233001	72.67191	0	0.013034	0.113572	0
Alameda (S	2023	HHDT	Aggregate	Aggregate	Natural Ga	422.605	17225.26	1648.16	1.030113	19.38259	0	0.003999	0.018604	0	0.009	0.02646	0.004179	0.019445	0	0.036	0.06174	3072.662	3880.308	0	3.289682	1.203995	0	0.626382	0.791026	0	0.103666	0.030823	0	0	0	0	0	3.421923	1.244285	0	0	0	0	0	10.96409	21.74497	0	0	0	0
Alameda (S	2023	LDA	Aggregate	Aggregate	Gasoline	667309.8	23901996	3124388	0.036103	0	0.195764	0.001302	0	0.001688	0.002	0.01575	0.001416	0	0.001836	0.008	0.03675	256.4196	0	54.68631	0.002206	0	0.052915	0.004252	0	0.026453	0.008414	0	0.238557	0.104581	0.226643	0.182738	0.184767	0.012275	0	0.261189	0.104581	0.226643	0.182738	0.184767	0.588097	0	2.337415	0.002537	0	0.000541
Alameda (S	2023	LDA	Aggregate	Aggregate	Diesel	7729.403	279310.6	36003.35	0.079154	0	0	0.007514	0	0	0.002	0.01575	0.007854	0	0	0.008	0.03675	206.0483	0	0	0.000717	0	0	0.032388	0	0	0.015437	0	0	0	0	0	0	0.017574	0	0	0	0	0	0.228546	0	0	0.001948	0	0
Alameda (S	2023	LDA	Aggregate	Aggregate	Electricity	20824.63	813801.8	101632.4	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.004021	0.014405	0	0	0	0	0.004888	0	0.004021	0.014405	0	0	0	0	0
Alameda (S	2023	LDT1	Aggregate	Aggregate	Gasoline	68479.58	2399722	314654.6	0.079537	0	0.253932	0.001651	0	0.002162	0.002	0.01575	0.001796	0	0.002351	0.008	0.03675	298.5369	0	63.85533	0.004301	0	0.069873	0.006612	0	0.029054	0.018438	0	0.344982	0.180225	0.660741	0.342854	0.380803	0.0269	0	0.377711	0.180225	0.660741	0.342854	0.380803	0.933166	0	2.463511	0.002954	0	0.000632
Alameda (S	2023	LDT1	Aggregate	Aggregate	Diesel	39.15707	635.7981	126.2317	1.044114	0	0	0.149427	0	0	0.002	0.01575	0.156183	0	0	0.008	0.03675	412.47	0	0	0.00879	0	0	0.064835	0	0	0.189233	0	0	0	0	0	0	0.21543	0	0	0	0	0	1.090371	0	0	0.003899	0	0
Alameda (S	2023	LDT1	Aggregate	Aggregate	Electricity	580.0443	24735.92	2906.946	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.004021	0.014405	0	0	0	0	0.004888	0	0.004021	0.014405	0	0	0	0	0
Alameda (S	2023	LDT2	Aggregate	Aggregate	Gasoline	217236.5	7721211	1009317	0.066116	0	0.287807	0.001308	0	0.001651	0.002	0.01575	0.001423	0	0.001795	0.008	0.03675	320.927	0	69.76163	0.00327	0	0.070206	0.00586	0	0.03273	0.013001	0	0.326529	0.128196	0.447365	0.284021	0.269098	0.018969	0	0.357508	0.128196	0.447365	0.284021	0.269098	0.763016	0	2.915378	0.003176	0	0.00069
Alameda (S	2023	LDT2	Aggregate	Aggregate	Diesel	1458.614	59717.01	7098.88	0.04187	0	0	0.004858	0	0	0.002	0.01575	0.005077	0	0	0.008	0.03675	275.3146	0	0	0.000715	0	0	0.043276	0	0	0.015386	0	0	0	0	0	0	0.017516	0	0	0	0	0	0.137905	0	0	0.002603	0	0
Alameda (S	2023	LDT2	Aggregate	Aggregate	Electricity	2454.719	77925.27	12325.87	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.004021	0.014405	0	0	0	0	0.004888	0	0.004021	0.014405	0	0	0	0	0
Alameda (S	2023	LHDT1	Aggregate	Aggregate	Gasoline	15630.71	546843.8	232874.3	0.218131	0.037928	0.528069	0.002104	0	0.000371	0.002	0.03276	0.002288	0	0.000404	0.008	0.07644	1000.131	120.5648	18.92157	0.010124	0.120797	0.024018	0.01333	0.003131	0.041449	0.049083	0.434533	0.120608	0.119676	0.856798	0.024397	0.042685	0.071622	0.634069	0.13205	0.119676	0.856798	0.024397	0.042685	0.909043	3.753615	1.730541	0.009897	0.001193	0.000187
Alameda (S	2023	LHDT1	Aggregate	Aggregate	Diesel	10182.28	394883.8	128080.3	1.49943	1.956817	0	0.020655	0.026877	0	0.003	0.03276	0.021589	0.028092	0	0.012	0.07644	538.2402	131.903	0	0.007222	0.005098	0	0.084604	0.020733	0	0.155496	0.10976	0	0	0	0	0	0.177022	0.124954	0	0	0	0	0	0.663089	0.909745	0	0.005088	0.001247	0
Alameda (S	2023	LHDT2	Aggregate	Aggregate	Gasoline	2404.163	82971.63	35818.45	0.218492	0.037884	0.525679	0.001921	0	0.000312	0.002	0.03822	0.00209	0	0.000339	0.008	0.08918	1145.871	138.9951	21.50769	0.007733	0.121343	0.023455	0.014085	0.003074	0.040715	0.034506	0.434322	0.116765	0.111751	0.743503	0.022163	0.038153	0.05035	0.633762	0.127843	0.111751	0.743503	0.022163	0.038153	0.635977	3.760246	1.701602	0.011339	0.001375	0.000213
Alameda (S	2023	LHDT2	Aggregate	Aggregate	Diesel	3857.759	148727.7	48525.76	1.220145	1.929327	0	0.021114	0.027057	0	0.003	0.03822	0.022069	0.02828	0	0.012	0.08918	603.0452	210.8476	0	0.006862	0.005098	0	0.09479	0.033142	0	0.147727	0.10976	0	0	0	0	0	0.168178	0.124954	0	0	0	0	0	0.62852	0.909745	0	0.005701	0.001993	0
Alameda (S	2023	MCY	Aggregate	Aggregate	Gasoline	30069.51	228308.3	60139.01	1.167689	0	0.273696	0.001935	0	0.003012	0.001	0.00504	0.002069	0	0.003198	0.004	0.01176	215.4071	0	61.82542	0.343224	0	0.260093	0.066972	0	0.015448	2.337556	0	1.99341	0.725491	2.181255	0.995139	1.606674	2.887399	0	2.169162	0.725491	2.181255	0.995139	1.606674	20.14792	0	9.100498	0.002132	0	0.000612
Alameda (S	2023	MDV	Aggregate	Aggregate	Gasoline	133207.4	4570507	613410.7	0.082163	0	0.35512	0.001381	0	0.001861	0.002	0.01575	0.001502	0	0.002024	0.008	0.03675	386.1684	0	84.97803	0.003982	0	0.084692	0.006857	0	0.035564	0.016475	0	0.421213	0.148054	0.484113	0.335623	0.314979	0.024008	0	0.461171	0.148054	0.484113	0.335623	0.314979	0.848047	0	3.370714	0.003821	0	0.000841
Alameda (S	2023	MDV	Aggregate	Aggregate	Diesel	3191.895	128373.5	15460.71	0.036519	0	0	0.004044	0	0	0.002	0.01575	0.004227	0	0	0.008	0.03675	357.2869	0	0	0.000487	0	0	0.056161	0	0	0.010486	0	0	0	0	0	0	0.011938	0	0	0	0	0	0.194737	0	0	0.003378	0	0
Alameda (S	2023	MDV	Aggregate	Aggregate	Electricity	1268.235	41984.7	6454.381	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.004021	0.014405	0	0	0	0	0.004888	0	0.004021	0.014405	0	0	0	0	0
Alameda (S	2023	MH	Aggregate	Aggregate	Gasoline	2265.263	22215.67	226.6169	0.350204	0	0.335985	0.001543	0	0.000344	0.003	0.05586	0.001678	0	0.000374	0.012	0.13034	1727.268	0	25.50079	0.012684	0	0.031663	0.022704	0	0.035966	0.054288	0	0.131578	0.077433	1.892045	0.031592	0.081385	0.079217	0	0.144061	0.077433	1.892045	0.031592	0.081385	1.350679	0	2.913127	0.017093	0	0.000252
Alameda (S	2023	MH	Aggregate	Aggregate	Diesel	772.1207	7841.796	77.21207	3.860922	0	0	0.075551	0	0	0.004	0.05586	0.078967	0	0	0.016	0.13034	1001.7	0	0	0.004678	0	0	0.157453	0	0	0.100725	0	0	0	0	0	0	0.114669	0	0	0	0	0	0.349959	0	0	0.00947	0	0
Alameda (S	2023	MHDT	Aggregate	Aggregate	Gasoline	1643.309	88761.49	32879.32	0.402393	0.088699	0.368613	0.001202	0	0.000406	0.003	0.05586	0.001307	0	0.000441	0.012	0.13034	1725.059	533.6431	38.56287	0.012337	0.267794	0.039092	0.020728	0.007743	0.029606	0.059563	1.015893	0.208079	0.081315	0.463963	0.017691	0.030215	0.086915	1.482389	0.22782	0.081315	0.463963	0.017691	0.030215	1.36167	15.15333	4.590976	0.017071	0.005281	0.000382
Alameda (S	2023	MHDT	Aggregate	Aggregate	Diesel	14483.95	961160.6	145737.2	1.522027	5.28445	2.138998	0.006993	0.00419	0	0.003	0.05586	0.007309	0.004379	0	0.012	0.13034	997.9643	851.0236	0	0.000502	0.003378	0	0.156866	0.133769	0	0.010811	0.077221	0	0	0	0	0	0.012308	0.082788	0	0	0	0	0	0.110325	2.664982	0	0.009428	0.00804	0
Alameda (S	2023	OBUS	Aggregate	Aggregate	Gasoline	573.9484	27813.7	11483.56	0.500759	0.065027	0.324991	0.000981	0	0.000238	0.003	0.05586	0.001067	0	0.000259	0.012	0.13034	1765.701	378.1583	26.64677	0.014846	0.199188	0.03063	0.024714	0.005552	0.025912	0.071571	0.745756	0.159253	0.031095	0.358159	0.01846	0.039129	0.104436	1.088205	0.174362	0.031095	0.358159	0.01846	0.039129	1.56828	5.771527	3.408417	0.017473	0.003742	0.000264
Alameda (S	2023	OBUS	Aggregate	Aggregate	Diesel	403.9197	31550.25	3904.948	1.877441	11.9236	2.211073	0.011435	0.003868	0	0.003	0.05586	0.011952	0.004043	0	0.012	0.13034	1208.295	2623.052	0	0.000611	0.039761	0	0.189927	0.412307	0	0.013148	0.856034	0	0	0	0	0	0.014968	0.974529	0	0	0	0	0	0.144759	13.73056	0	0.011415	0.024781	0
Alameda (S	2023	SBUS	Aggregate	Aggregate	Gasoline	104.0366	5187.478	416.1466	0.226924	0.92653	0.504985	0.001305	0	0.00059	0.002	0.3192	0.00142	0	0.000642	0.008	0.7448	820.439	2460.601	45.73726	0.006051	2.491428	0.054499	0.016156	0.095009	0.051108	0.028351	10.64152	0.302216	0.030214	0.199118	0.005831	0.012249	0.04137	15.52808	0.330888	0.030214	0.199118	0.005831	0.012249	0.577232	82.24088	7.923841	0.008119	0.02435	0.000453
Alameda (S	2023	SBUS	Aggregate	Aggregate	Diesel	301.0643	9625.658	3474.24	5.374596	36.87513	1.180642	0.031114	0.036778	0	0.003	0.3192	0.03252	0.038441	0	0.012	0.7448	1093.019	3581.358	0	0.003511	0.012613	0	0.171807	0.56294	0	0.07558	0.271551	0	0	0	0	0	0.086043	0.30914	0	0	0	0	0	0.224681	7.432484	0	0.010326	0.033835	0
Alameda (S	2023	UBUS	Aggregate	Aggregate	Gasoline	8.85782	523.45	35.43128	0.240354	0	0.703059	0.001593	0	0.000469	0.002651	0.049706	0.001732	0	0.00051	0.010605	0.115982	1827.56	0	67.18497	0.005414	0	0.082542	0.020443	0	0.06261	0.017879	0	0.358958	0.05535	0.330159	0.010032	0.015285	0.026088	0	0.393014	0.05535	0.330159	0.010032	0.015285	0.307446	0	5.85416	0.018085	0	0.000665
Alameda (S	2023	UBUS	Aggregate	Aggregate	Diesel	569.4196	67115.93	2277.678	1.267944	0	0	0.005972	0	0	0.007946	0.031622	0.006242	0	0	0.031785	0.073785	1608.74	0	0	0.098768	0	0	0.252872	0	0	0.001419	0	0	0	0	0	0	0.100808	0	0	0	0	0	0.163216	0	0	0.015208	0	0
Alameda (S	2023	UBUS	Aggregate	Aggregate	Electricity	12.02059	1081.877	48.08237	0	0	0	0	0	0	0.008998	0.026472	0	0	0	0.03599	0.061768	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alameda (S	2023	UBUS	Aggregate	Aggregate	Natural Ga	119.3585	12870.3	477.4341	0.465388	0	0	0.003041	0	0	0.007791	0.032381	0.003179	0	0	0.031165	0.075555	1932.568	0	0	6.010405	0	0	0.393967	0	0	0.085893	0	0	0	0	0	0	6.134076	0	0	0	0	0	46.35102	0	0	0	0	0	0

Source: EMFAC2017 (v1.0.3) Emission Rates
Region Type: Sub-Area
Region: Alameda (SF)
Calendar Year: 2023
Season: Summer
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX, RESTLOSS and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PM	PM2.5_RUN	PM10_RUN	PM10_IDLE	PM10_STR	PM10_PM	PM10_PMI	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_HOTS	ROG_RUNL	ROG_REST	ROG_DIUR	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_HOTS	TOG_RUNL	TOG_REST	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNEX	SOx_IDLEX	SOx_STREX
Alameda (S	2023	HHDT	Aggregate	Aggregate	Gasoline	8.469319	953.4549	169.4541	2.822686	0	0.152885	0.000656	0	0.000252	0.005	0.02646	0.000713	0	0.000274	0.02	0.06174	2097.314	0	45.56227	0.08299	0	0.000204	0.123875	0	0.005388	0.384697	0	0.001069	0.081885	0.378404	0.04525	0.075944	0.561349	0	0.00117	0.081885	0.378404	0.04525	0.075944	33.26011	0	3.785748	0.020755	0	0.000451
Alameda (S	2023	HHDT	Aggregate	Aggregate	Diesel	15086.83	1974725	164037	2.494155	57.24706	2.30368	0.024253	0.021823	0	0.008924	0.026238	0.02535	0.02281	0	0.035698	0.061221	1379.616	11874.58	0	0.00108	0.243437	0	0.216856	1.866518	0	0.023253	5.241124	0	0	0	0	0	0.026472	5.96662	0	0	0	0	0	0.233001	71.6874	0	0.013034	0.112185	0
Alameda (S	2023	HHDT	Aggregate	Aggregate	Natural Ga	422.605	17225.26	1648.16	0.990715	18.63633	0	0.003999	0.015958	0	0.009	0.02646	0.004179	0.01668	0	0.036	0.06174	3072.662	3847.1	0	3.289682	1.263383	0	0.626382	0.784256	0	0.103666	0.030849	0	0	0	0	0	3.421923	1.303956	0	0	0	0	0	10.96409	21.27846	0	0	0	0
Alameda (S	2023	LDA	Aggregate	Aggregate	Gasoline	667309.8	23901996	3124388	0.032022	0	0.171353	0.001302	0	0.001688	0.002	0.01575	0.001416	0	0.001836	0.008	0.03675	277.0049	0	53.66655	0.002503	0	0.043879	0.003922	0	0.024048	0.009395	0	0.194421	0.115019	0.211996	0.388972	0.459657	0.013705	0	0.212866	0.115019	0.211996	0.388972	0.459657	0.697198	0	1.787524	0.002741	0	0.000531
Alameda (S	2023	LDA	Aggregate	Aggregate	Diesel	7729.403	279310.6	36003.35	0.076008	0	0	0.007514	0	0	0.002	0.01575	0.007854	0	0	0.008	0.03675	206.0483	0	0	0.000717	0	0	0.032388	0	0	0.015437	0	0	0	0	0	0	0.017574	0	0	0	0	0	0	0.228546	0	0	0.001948	0	0
Alameda (S	2023	LDA	Aggregate	Aggregate	Electricity	20824.63	813801.8	101632.4	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.020951	0.050309	0	0	0	0	0.004888	0	0.020951	0.050309	0	0	0	0	0	0
Alameda (S	2023	LDT1	Aggregate	Aggregate	Gasoline	68479.58	2399722	314654.6	0.070007	0	0.222332	0.001651	0	0.002162	0.002	0.01575	0.001796	0	0.002351	0.008	0.03675	319.0422	0	62.70745	0.004829	0	0.057499	0.00607	0	0.026426	0.020432	0	0.279328	0.205069	0.606713	0.739658	0.965925	0.029809	0	0.305829	0.205069	0.606713	0.739658	0.965925	1.090994	0	1.878363	0.003157	0	0.000621
Alameda (S	2023	LDT1	Aggregate	Aggregate	Diesel	39.15707	635.7981	126.2317	1.002665	0	0	0.149427	0	0	0.002	0.01575	0.156183	0	0	0.008	0.03675	412.47	0	0	0.00879	0	0	0.064835	0	0	0.189233	0	0	0	0	0	0	0.21543	0	0	0	0	0	0	1.090371	0	0	0.003899	0	0
Alameda (S	2023	LDT1	Aggregate	Aggregate	Electricity	580.0443	24735.92	2906.946	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.020951	0.050309	0	0	0	0	0.004888	0	0.020951	0.050309	0	0	0	0	0	0
Alameda (S	2023	LDT2	Aggregate	Aggregate	Gasoline	217236.5	7721211	1009317	0.058456	0	0.251943	0.001308	0	0.001651	0.002	0.01575	0.001423	0	0.001795	0.008	0.03675	341.0672	0	68.46409	0.003696	0	0.058118	0.005393	0	0.029764	0.014475	0	0.265784	0.141151	0.412503	0.594336	0.658026	0.02112	0	0.291	0.141151	0.412503	0.594336	0.658026	0.899021	0	2.225409	0.003375	0	0.000678
Alameda (S	2023	LDT2	Aggregate	Aggregate	Diesel	1458.614	59717.01	7098.88	0.040203	0	0	0.004858	0	0	0.002	0.01575	0.005077	0	0	0.008	0.03675	275.3146	0	0	0.000715	0	0	0.043276	0	0	0.015386	0	0	0	0	0	0	0.017516	0	0	0	0	0	0	0.137905	0	0	0.002603	0	0
Alameda (S	2023	LDT2	Aggregate	Aggregate	Electricity	2454.719	77925.27	12325.87	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.020951	0.050309	0	0	0	0	0.004888	0	0.020951	0.050309	0	0	0	0	0	0
Alameda (S	2023	LHDT1	Aggregate	Aggregate	Gasoline	15630.71	546843.8	232874.3	0.193813	0.037928	0.488167	0.002104	0	0.000371	0.002	0.03276	0.002288	0	0.000404	0.008	0.07644	1000.2	120.5648	18.67663	0.010561	0.122188	0.022534	0.012258	0.003215	0.039359	0.051422	0.434533	0.112699	0.133169	0.82745	0.05241	0.105386	0.075035	0.634069	0.123392	0.133169	0.82745	0.05241	0.105386	0.946129	3.753615	1.59276	0.009898	0.001193	0.000185
Alameda (S	2023	LHDT1	Aggregate	Aggregate	Diesel	10182.28	394883.8	128080.3	1.445579	1.956817	0	0.020655	0.026877	0	0.003	0.03276	0.021589	0.028092	0	0.012	0.07644	538.2402	131.903	0	0.007222	0.005098	0	0.084604	0.020733	0	0.155496	0.10976	0	0	0	0	0	0.177022	0.124954	0	0	0	0	0	0.663089	0.909745	0	0.005088	0.001247	0
Alameda (S	2023	LHDT2	Aggregate	Aggregate	Gasoline	2404.163	82971.63	35818.45	0.193629	0.037884	0.485957	0.001921	0	0.000312	0.002	0.03822	0.00209	0	0.000339	0.008	0.08918	1145.914	138.9951	21.26874	0.008029	0.12174	0.022009	0.012868	0.003163	0.038725	0.035856	0.434322	0.109119	0.125911	0.716673	0.047603	0.093977	0.052321	0.633762	0.119472	0.125911	0.716673	0.047603	0.093977	0.659405	3.760246	1.567047	0.01134	0.001375	0.00021
Alameda (S	2023	LHDT2	Aggregate	Aggregate	Diesel	3857.759	148727.7	48525.76	1.176499	1.929327	0	0.021114	0.027057	0	0.003	0.03822	0.022069	0.02828	0	0.012	0.08918	603.0452	210.8476	0	0.006862	0.005098	0	0.09479	0.033142	0	0.147727	0.10976	0	0	0	0	0	0.168178	0.124954	0	0	0	0	0	0.62852	0.909745	0	0.005701	0.001993	0
Alameda (S	2023	MCY	Aggregate	Aggregate	Gasoline	30069.51	228308.3	60139.01	1.0194	0	0.248754	0.001935	0	0.003012	0.001	0.00504	0.002069	0	0.003198	0.004	0.01176	213.347	0	58.50483	0.331924	0	0.21376	0.06088	0	0.014627	2.236684	0	1.617692	0.970006	2.033746	2.865662	4.675664	0.26329	0	1.760434	0.970006	2.033746	2.865662	4.675664	19.07541	0	7.793225	0.002111	0	0.000579
Alameda (S	2023	MDV	Aggregate	Aggregate	Gasoline	133207.4	4570507	613410.7	0.072589	0	0.310865	0.001381	0	0.001861	0.002	0.01575	0.001502	0	0.002024	0.008	0.03675	406.9328	0	83.43266	0.004495	0	0.070026	0.006308	0	0.032341	0.01829	0	0.342298	0.162471	0.447876	0.705785	0.769741	0.026656	0	0.37477	0.162471	0.447876	0.705785	0.769741	0.996352	0	2.56287	0.004027	0	0.000826
Alameda (S	2023	MDV	Aggregate	Aggregate	Diesel	3191.895	128373.5	15460.71	0.035066	0	0	0.004044	0	0	0.002	0.01575	0.004227	0	0	0.008	0.03675	357.2869	0	0	0.000487	0	0	0.056161	0	0	0.010486	0	0	0	0	0	0	0.011938	0	0	0	0	0	0	0.194737	0	0	0.003378	0	0
Alameda (S	2023	MDV	Aggregate	Aggregate	Electricity	1268.235	41984.7	6454.381	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.020951	0.050309	0	0	0	0	0.004888	0	0.020951	0.050309	0	0	0	0	0	0
Alameda (S	2023	MH	Aggregate	Aggregate	Gasoline	2265.263	22215.67	226.6169	0.307739	0	0.310076	0.001543	0	0.000344	0.003	0.05586	0.001678	0	0.000374	0.012	0.13034	1727.378	0	25.01798	0.013211	0	0.029272	0.020761	0	0.03447	0.057052	0	0.122136	0.085144	1.841278	0.068637	0.200762	0.083249	0	0.133723	0.085144	1.841278	0.068637	0.200762	1.412969	0	2.628526	0.017094	0	0.000248
Alameda (S	2023	MH	Aggregate	Aggregate	Diesel	772.1207	7841.796	77.21207	3.710896	0	0	0.075551	0	0	0.004	0.05586	0.078967	0	0	0.016	0.13034	1001.7	0	0	0.004678	0	0	0.157453	0	0	0.100725	0	0	0	0	0	0	0.114669	0	0	0	0	0	0	0.349959	0	0	0.00947	0	0
Alameda (S	2023	MHDT	Aggregate	Aggregate	Gasoline	1643.309	88761.49	32879.32	0.354598	0.092485	0.340352	0.001202	0	0.000406	0.003	0.05586	0.001307	0	0.000441	0.012	0.13034	1725.151	560.8238	37.85803	0.01284	0.250298	0.036553	0.018901	0.008327	0.028204	0.061909	0.94362	0.193606	0.091001	0.445448	0.039454	0.075993	0.090337	1.376929	0.211974	0.091001	0.445448	0.039454	0.075993	1.413286	10.44879	4.176963	0.017072	0.00555	0.000375
Alameda (S	2023	MHDT	Aggregate	Aggregate	Diesel	14483.95	961160.6	145737.2	1.462759	5.166326	2.138998	0.006993	0.003572	0	0.003	0.05586	0.007309	0.003733	0	0.012	0.13034	997.9643	846.4213	0	0.000502	0.003526	0	0.156866	0.133046	0	0.010811	0.075906	0	0	0	0	0	0.012308	0.086414	0	0	0	0	0	0.110325	2.605382	0	0.009428	0.007997	0
Alameda (S	2023	OBUS	Aggregate	Aggregate	Gasoline	573.9484	27813.7	11483.56	0.441108	0.065027	0.299931	0.000981	0	0.000238	0.003	0.05586	0.001067	0	0.000259	0.012	0.13034	1765.811	378.1583	26.08371	0.015443	0.199946	0.028522	0.022548	0.00573	0.024685	0.074553	0.745756	0.147867	0.033104	0.347799	0.039443	0.093582	0.108787	1.088205	0.161896	0.033104	0.347799	0.039443	0.093582	1.629581	5.771527	3.077303	0.017474	0.003742	0.000258
Alameda (S	2023	OBUS	Aggregate	Aggregate	Diesel	403.9197	31550.25	3904.948	1.805785	11.32644	2.211073	0.011435	0.003437	0	0.003	0.05586	0.011952	0.003593	0	0.012	0.13034	1208.295	2587.71	0	0.000611	0.042145	0	0.189927	0.406752	0	0.013148	0.907376	0	0	0	0	0	0.014968	1.032979	0	0	0	0	0	0.144759	13.55187	0	0.011415	0.024447	0
Alameda (S	2023	SBUS	Aggregate	Aggregate	Gasoline	104.0366	5187.478	416.1466	0.200227	0.92653	0.463019	0.001305	0	0.00059	0.002	0.3192	0.00142	0	0.000642	0.008	0.7448	820.4772	2460.601	41.9649	0.006277	2.494884	0.045044	0.014731	0.097988	0.048336	0.029417	10.64152	0.24948	0.0318	0.168464	0.013425	0.03038	0.598482	82.24088	5.655594	0.008119	0.02435	0.000415
Alameda (S	2023	SBUS	Aggregate	Aggregate	Diesel	301.0643	9625.658	3474.24	5.159589	37.44232	1.180642	0.031114	0.031113	0	0.003	0.3192	0.03252	0.032519	0	0.012	0.7448	1093.019	3654.829	0	0.003511	0.012708	0	0.171807	0.574488	0	0.07558	0.273599	0	0	0	0	0	0.086043	0.311472	0	0	0	0	0	0.224681	7.028822	0	0.010326	0.034529	0
Alameda (S	2023	UBUS	Aggregate	Aggregate	Gasoline	8.85782	523.45	35.43128	0.21274	0	0.649107	0.001593	0	0.000469	0.002651	0.049706	0.001732	0	0.00051	0.010605	0.115982	1827.58	0	65.18734	0.005644	0	0.072643	0.018736	0	0.05981	0.018531	0	0.313587	0.0616	0.297575	0.021384	0.037023	0.027041	0	0.343338	0.0616	0.297575	0.021384	0.037023	0.31845	0	4.689961	0.018085	0	0.000645
Alameda (S	2023	UBUS	Aggregate	Aggregate	Diesel	569.4196	67115.93	2277.678	1.267943	0	0	0.005972	0	0	0.007946	0.031622	0.006242	0	0	0.031785	0.073785	1608.74	0	0	0.098768	0	0	0.252872	0	0	0.001419	0	0	0	0	0	0	0.100808	0	0	0	0	0	0	0.163216	0	0	0.015208	0	0
Alameda (S	2023	UBUS	Aggregate	Aggregate	Electricity	12.02059	1081.877	48.08237	0	0	0	0	0	0	0.008998	0.026472	0	0	0	0.03599	0.061768	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alameda (S	2023	UBUS	Aggregate	Aggregate	Natural Ga	119.3585	12870.3	477.4341	0.465387	0	0	0.003041	0	0	0.007791	0.032381	0.003179	0	0	0.031165	0.075555	1932.568	0	0	6.010405	0	0	0.393967	0	0	0.085893	0	0	0	0	0	0	6.134076	0	0	0	0	0	0	46.35102	0	0	0	0	0

Source: EMFAC2017 (v1.0.3) Emission Rates
Region Type: Sub-Area
Region: Alameda (SF)
Calendar Year: 2023
Season: Winter
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX, RESTLOSS and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_DIU	PM2.5_TIR	PM2.5_BW	PM10_RUN	PM10_IDL	PM10_STR	PM10_DIU	PM10_TIR	PM10_BW	PM_TOTA	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_HOTSO	ROG_RUNL	ROG_RESTL	ROG_DIUR	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_HOTSO	TOG_RUNL	TOG_RESTL	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNEX	SOx_IDLEX	SOx_STREX
Alameda (S	2023	HHDT	Aggregate	Aggregate	Gasoline	8.469319	953.4549	169.4541	3.426586	0	0.175454	0.000656	0	0.000252	0.005	0.02646	0.000713	0	0.000274	0.02	0.06174	2093.943	0	46.6568	0.078231	0	0.000232	0.141758	0	0.005926	0.358714	0	0.001209	0.080337	0.431257	0.009153	0.012947	0.523434	0	0.001324	0.080337	0.431257	0.009153	0.012947	31.20392	0	4.475969	0.020721	0	0.000462
Alameda (S	2023	HHDT	Aggregate	Aggregate	Diesel	15086.83	1974725	164037	2.632093	63.94247	2.30368	0.024253	0.02892	0	0.008924	0.026238	0.02535	0.030228	0	0.035698	0.061221	1379.616	1224.18	0	0.00108	0.211293	0	0.216856	1.921471	0	0.023253	4.549083	0	0	0	0	0	0.026472	5.178785	0	0	0	0	0	0.233001	74.03146	0	0.013034	0.115488	0
Alameda (S	2023	HHDT	Aggregate	Aggregate	Natural Ga	422.605	17225.26	1648.16	1.04934	20.41314	0	0.003999	0.022258	0	0.009	0.02646	0.004179	0.023265	0	0.036	0.06174	3072.662	3926.168	0	3.289682	1.121984	0	0.626382	0.800375	0	0.103666	0.030789	0	0	0	0	0	3.421923	1.161881	0	0	0	0	0	10.96409	22.3892	0	0	0	0
Alameda (S	2023	LDA	Aggregate	Aggregate	Gasoline	667309.8	23901996	3124388	0.039674	0	0.212781	0.001302	0	0.001688	0.002	0.01575	0.001416	0	0.001836	0.008	0.03675	254.369	0	55.42155	0.00213	0	0.058955	0.004547	0	0.027989	0.008223	0	0.269141	0.108671	0.266344	0.08823	0.077061	0.011995	0	0.294674	0.108671	0.266344	0.08823	0.077061	0.582623	0	2.736501	0.002517	0	0.000548
Alameda (S	2023	LDA	Aggregate	Aggregate	Diesel	7729.403	279310.6	36003.35	0.080375	0	0	0.007514	0	0	0.002	0.01575	0.007854	0	0	0.008	0.03675	206.0483	0	0	0.000717	0	0	0.032388	0	0	0.015437	0	0	0	0	0	0	0.017574	0	0	0	0	0	0.228546	0	0	0.001948	0	0
Alameda (S	2023	LDA	Aggregate	Aggregate	Electricity	20824.63	813801.8	101632.4	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.000178	0.001263	0	0	0	0	0	0	0	0	0	0	0
Alameda (S	2023	LDT1	Aggregate	Aggregate	Gasoline	68479.58	2399722	314654.6	0.087475	0	0.275907	0.001651	0	0.002162	0.002	0.01575	0.001796	0	0.002351	0.008	0.03675	296.5001	0	64.6821	0.004168	0	0.078171	0.007071	0	0.030729	0.018069	0	0.390725	0.192009	0.811683	0.164153	0.149221	0.026361	0	0.427793	0.192009	0.811683	0.164153	0.149221	0.926641	0	2.888249	0.002934	0	0.00064
Alameda (S	2023	LDT1	Aggregate	Aggregate	Diesel	39.15707	635.7981	126.2317	1.060165	0	0	0.149427	0	0	0.002	0.01575	0.156183	0	0	0.008	0.03675	412.47	0	0	0.00879	0	0	0.064835	0	0	0.189233	0	0	0	0	0	0	0.21543	0	0	0	0	0	1.090371	0	0	0.003899	0	0
Alameda (S	2023	LDT1	Aggregate	Aggregate	Electricity	580.0443	24735.92	2906.946	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.000178	0.001263	0	0	0	0	0	0	0	0	0	0	0
Alameda (S	2023	LDT2	Aggregate	Aggregate	Gasoline	217236.5	7721211	1009317	0.072677	0	0.31279	0.001308	0	0.001651	0.002	0.01575	0.001423	0	0.001795	0.008	0.03675	318.9233	0	70.69619	0.00316	0	0.078294	0.006267	0	0.034625	0.012707	0	0.368653	0.133124	0.543568	0.138602	0.117678	0.01854	0	0.403629	0.133124	0.543568	0.138602	0.117678	0.756431	0	3.415775	0.003156	0	0.0007
Alameda (S	2023	LDT2	Aggregate	Aggregate	Diesel	1458.614	59717.01	7098.88	0.042519	0	0	0.004858	0	0	0.002	0.01575	0.005077	0	0	0.008	0.03675	275.3146	0	0	0.000715	0	0	0.043276	0	0	0.015386	0	0	0	0	0	0	0.017516	0	0	0	0	0	0.137905	0	0	0.002603	0	0
Alameda (S	2023	LDT2	Aggregate	Aggregate	Electricity	2454.719	77925.27	12325.87	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.000178	0.001263	0	0	0	0	0	0	0	0	0	0	0
Alameda (S	2023	LHDT1	Aggregate	Aggregate	Gasoline	15630.71	546843.8	232874.3	0.232561	0.037928	0.559908	0.002104	0	0.000371	0.002	0.03276	0.002288	0	0.000404	0.008	0.07644	1000.083	120.5648	19.13682	0.009815	0.120491	0.02517	0.013925	0.003075	0.043173	0.047459	0.434533	0.12679	0.132732	0.950379	0.011765	0.017492	0.069253	0.634069	0.138819	0.132732	0.950379	0.011765	0.017492	0.883317	3.753615	1.853246	0.009897	0.001193	0.000189
Alameda (S	2023	LHDT1	Aggregate	Aggregate	Diesel	10182.28	394883.8	128080.3	1.521833	1.956817	0	0.020655	0.026877	0	0.003	0.03276	0.021589	0.028092	0	0.012	0.07644	538.2402	131.903	0	0.007222	0.005098	0	0.084604	0.020733	0	0.155496	0.10976	0	0	0	0	0	0.177022	0.124954	0	0	0	0	0	0.663089	0.909745	0	0.005088	0.001247	0
Alameda (S	2023	LHDT2	Aggregate	Aggregate	Gasoline	2404.163	82971.63	35818.45	0.233062	0.037884	0.55738	0.001921	0	0.000312	0.002	0.03822	0.00209	0	0.000339	0.008	0.08918	1145.841	138.9951	21.71699	0.00752	0.121033	0.024579	0.014745	0.003018	0.042387	0.033542	0.434322	0.122742	0.120988	0.831124	0.010955	0.016122	0.048945	0.633762	0.134387	0.120988	0.831124	0.010955	0.016122	0.619626	3.760246	1.820994	0.011339	0.001375	0.000215
Alameda (S	2023	LHDT2	Aggregate	Aggregate	Diesel	3857.759	148727.7	48525.76	1.238294	1.929327	0	0.021114	0.027057	0	0.003	0.03822	0.022069	0.02828	0	0.012	0.08918	603.0452	210.8476	0	0.006862	0.005098	0	0.09479	0.033142	0	0.147727	0.10976	0	0	0	0	0	0.168178	0.124954	0	0	0	0	0	0.62852	0.909745	0	0.005701	0.001993	0
Alameda (S	2023	MCY	Aggregate	Aggregate	Gasoline	30069.51	228308.3	60139.01	1.25337	0	0.292143	0.001935	0	0.003012	0.001	0.00504	0.002069	0	0.003198	0.004	0.01176	218.441	0	65.04353	0.354856	0	0.300152	0.070367	0	0.016133	2.439604	0	2.325726	0.86423	2.582938	0.351388	0.427563	3.010437	0	2.530648	0.86423	2.582938	0.351388	0.427563	21.83117	0	10.43418	0.002162	0	0.000644
Alameda (S	2023	MDV	Aggregate	Aggregate	Gasoline	133207.4	4570507	613410.7	0.090344	0	0.385943	0.001381	0	0.001861	0.002	0.01575	0.001502	0	0.002024	0.008	0.03675	384.1062	0	86.0922	0.003858	0	0.094524	0.007334	0	0.037621	0.016184	0	0.476139	0.153524	0.584897	0.162693	0.137922	0.02358	0	0.521306	0.153524	0.584897	0.162693	0.137922	0.842651	0	3.957317	0.003801	0	0.000852
Alameda (S	2023	MDV	Aggregate	Aggregate	Diesel	3191.895	128373.5	15460.71	0.037085	0	0	0.004044	0	0	0.002	0.01575	0.004227	0	0	0.008	0.03675	357.2869	0	0	0.000487	0	0	0.056161	0	0	0.010486	0	0	0	0	0	0	0.011938	0	0	0	0	0	0.194737	0	0	0.003378	0	0
Alameda (S	2023	MDV	Aggregate	Aggregate	Electricity	1268.235	41984.7	6454.381	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.000178	0.001263	0	0	0	0	0	0	0	0	0	0	0
Alameda (S	2023	MH	Aggregate	Aggregate	Gasoline	2265.263	22215.67	226.6169	0.374818	0	0.356302	0.001543	0	0.000344	0.003	0.05586	0.001678	0	0.000374	0.012	0.13034	1727.195	0	25.87973	0.012332	0	0.03338	0.023792	0	0.037389	0.052467	0	0.138331	0.090428	2.033441	0.015602	0.031807	0.07656	0	0.151455	0.090428	2.033441	0.015602	0.031807	1.309841	0	3.137894	0.017092	0	0.000256
Alameda (S	2023	MH	Aggregate	Aggregate	Diesel	772.1207	7841.796	77.21207	3.922965	0	0	0.075551	0	0	0.004	0.05586	0.078967	0	0	0.016	0.13034	1001.7	0	0	0.004678	0	0	0.157453	0	0	0.100725	0	0	0	0	0	0	0.114669	0	0	0	0	0	0.349959	0	0	0.00947	0	0
Alameda (S	2023	MHDT	Aggregate	Aggregate	Gasoline	1643.309	88761.49	32879.32	0.429894	0.084913	0.390598	0.001202	0	0.000406	0.003	0.05586	0.001307	0	0.000441	0.012	0.13034	1724.998	506.4624	39.15146	0.011989	0.285385	0.040983	0.021723	0.007276	0.030793	0.057966	1.088166	0.21904	0.085349	0.525124	0.00845	0.012467	0.084583	1.587849	0.239822	0.085349	0.525124	0.00845	0.012467	1.32714	19.85787	4.939093	0.01707	0.005012	0.000387
Alameda (S	2023	MHDT	Aggregate	Aggregate	Diesel	14483.95	961160.6	145737.2	1.546582	5.447574	2.138998	0.006993	0.005044	0	0.003	0.05586	0.007309	0.005272	0	0.012	0.13034	997.9643	857.3792	0	0.000502	0.003173	0	0.156866	0.134768	0	0.010811	0.068323	0	0	0	0	0	0.012308	0.077781	0	0	0	0	0	0.110325	2.747287	0	0.009428	0.0081	0
Alameda (S	2023	OBUS	Aggregate	Aggregate	Gasoline	573.9484	27813.7	11483.56	0.535119	0.065027	0.344642	0.000981	0	0.000238	0.003	0.05586	0.001067	0	0.000259	0.012	0.13034	1765.627	378.1583	27.08481	0.01444	0.198661	0.032122	0.025897	0.005449	0.026965	0.069555	0.745756	0.167349	0.032083	0.391203	0.009555	0.018283	0.101495	1.088205	0.183226	0.032083	0.391203	0.009555	0.018283	1.527389	5.771527	3.667629	0.017472	0.003742	0.000268
Alameda (S	2023	OBUS	Aggregate	Aggregate	Diesel	403.9197	31550.25	3904.948	1.907409	12.74826	2.211073	0.011435	0.004463	0	0.003	0.05586	0.011952	0.004665	0	0.012	0.13034	1208.295	2671.859	0	0.000611	0.036467	0	0.189927	0.419979	0	0.013148	0.785132	0	0	0	0	0	0.014968	0.893813	0	0	0	0	0	0.144759	13.97733	0	0.011415	0.025242	0
Alameda (S	2023	SBUS	Aggregate	Aggregate	Gasoline	104.0366	5187.478	416.1466	0.24277	0.92653	0.535781	0.001305	0	0.00059	0.002	0.3192	0.00142	0	0.000642	0.008	0.7448	820.4125	2460.601	48.95603	0.005892	2.488775	0.061689	0.016968	0.093343	0.053271	0.027603	10.64152	0.342415	0.030903	0.257932	0.002908	0.00553	0.040278	15.52808	0.374901	0.030903	0.257932	0.002908	0.00553	0.562549	82.24088	9.86939	0.008119	0.02435	0.000484
Alameda (S	2023	SBUS	Aggregate	Aggregate	Diesel	301.0643	9625.658	3474.24	5.464818	36.09188	1.180642	0.031114	0.044601	0	0.003	0.3192	0.03252	0.046617	0	0.012	0.7448	1093.019	3479.899	0	0.003511	0.012481	0	0.171807	0.546992	0	0.07558	0.268722	0	0	0	0	0	0.086043	0.30592	0	0	0	0	0	0.224681	7.98992	0	0.010326	0.032876	0
Alameda (S	2023	UBUS	Aggregate	Aggregate	Gasoline	8.85782	523.45	35.43128	0.255901	0	0.743147	0.001593	0	0.000469	0.002651	0.049706	0.001732	0	0.00051	0.010605	0.115982	1827.547	0	68.84164	0.005256	0	0.089968	0.021364	0	0.064971	0.017433	0	0.393397	0.057324	0.41264	0.005298	0.007513	0.025438	0	0.43072	0.057324	0.41264	0.005298	0.007513	0.300077	0	6.8264	0.018085	0	0.000681
Alameda (S	2023	UBUS	Aggregate	Aggregate	Diesel	569.4196	67115.93	2277.678	1.267944	0	0	0.005972	0	0	0.007946	0.031622	0.006242	0	0	0.031785	0.073785	1608.74	0	0	0.098768	0	0	0.252872	0	0	0.001419	0	0	0	0	0	0	0.100808	0	0	0	0	0	0.163216	0	0	0.015208	0	0
Alameda (S	2023	UBUS	Aggregate	Aggregate	Electricity	12.02059	1081.877	48.08237	0	0	0	0	0	0	0.008998	0.026472	0	0	0	0.03599	0.061768	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alameda (S	2023	UBUS	Aggregate	Aggregate	Natural Ga	119.3585	12870.3	477.4341	0.465388	0	0	0.003041	0	0	0.007791	0.032381	0.003179	0	0	0.031165	0.075555	1932.568	0	0	6.010405	0	0	0.393967	0	0	0.085893	0	0	0	0	0	0	6.134076	0	0	0	0	0	46.35102	0	0	0	0	0	0

CalEEMod Construction Model

Callan and E 14th Street Infill Checklist Project Construction

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Bank (with Drive-Through)	2.52	1000sqft	0.00	2,515.00	0
Enclosed Parking with Elevator	87.26	1000sqft	0.00	87,257.00	0
Other Non-Asphalt Surfaces	5.16	1000sqft	0.12	5,156.00	0
Fast Food Restaurant w/o Drive Thru	1.55	1000sqft	0.00	1,547.00	0
Apartments Mid Rise	196.00	Dwelling Unit	1.52	170,098.00	561
Regional Shopping Center	1.60	1000sqft	0.00	1,598.00	0
Supermarket	23.21	1000sqft	0.00	23,208.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - based on ground floor land use acreage, assigning all land use acreage to apartments

Construction Phase - based on CalEEMod default construction duration normalized to fit 20 month construction schedule from applicant

Off-road Equipment -

Off-road Equipment - crane and welders would only be used on site for a portion of the total building construction duration

Off-road Equipment - no additional equipment required for Demolition Debris Haul

Off-road Equipment -

Off-road Equipment - no additional equipment required for Grading Soil Haul

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - no additional equipment required for Site Preparation Soil Haul

Trips and VMT - assuming 2 vt/water truck/day. see assumptions file for hauling trips calculations

Demolition -

Grading -

Architectural Coating - assuming the parking structure would also be coated and that only parking area would be striped

Construction Off-road Equipment Mitigation - BAAQMD Construction BMPs

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	14,434.00	58,063.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	43,302.00	174,188.00
tblArchitecturalCoating	ConstArea_Parking	5,545.00	5,235.00
tblAreaCoating	Area_Residential_Exterior	114816	128276
tblAreaCoating	Area_Residential_Interior	344448	384829
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	17.00
tblConstructionPhase	NumDays	200.00	354.00
tblConstructionPhase	NumDays	20.00	36.00
tblConstructionPhase	NumDays	20.00	36.00
tblConstructionPhase	NumDays	4.00	7.00
tblConstructionPhase	NumDays	10.00	17.00
tblConstructionPhase	NumDays	2.00	4.00
tblConstructionPhase	NumDays	2.00	4.00
tblGrading	MaterialExported	0.00	177.00
tblLandUse	LandUseSquareFeet	2,520.00	2,515.00
tblLandUse	LandUseSquareFeet	87,260.00	87,257.00
tblLandUse	LandUseSquareFeet	5,160.00	5,156.00
tblLandUse	LandUseSquareFeet	1,550.00	1,547.00
tblLandUse	LandUseSquareFeet	196,000.00	170,098.00

tblLandUse	LandUseSquareFeet	1,600.00	1,598.00
tblLandUse	LandUseSquareFeet	23,210.00	23,208.00
tblLandUse	LotAcreage	0.06	0.00
tblLandUse	LotAcreage	2.00	0.00
tblLandUse	LotAcreage	0.04	0.00
tblLandUse	LotAcreage	5.16	1.52
tblLandUse	LotAcreage	0.04	0.00
tblLandUse	LotAcreage	0.53	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblTripsAndVMT	HaulingTripNumber	238.00	241.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1089	0.9677	0.8471	2.2300e-003	0.1342	0.0390	0.1733	0.0401	0.0369	0.0770	0.0000	201.1878	201.1878	0.0232	0.0000	201.7673
2022	0.1779	1.3778	1.5712	4.7400e-003	0.2293	0.0429	0.2722	0.0618	0.0413	0.1031	0.0000	429.5196	429.5196	0.0310	0.0000	430.2946
2023	1.8350	0.1061	0.1511	3.3000e-004	0.0114	4.5200e-003	0.0159	3.0500e-003	4.2700e-003	7.3200e-003	0.0000	29.4226	29.4226	4.3600e-003	0.0000	29.5315
Maximum	**1.8350**	**1.3778**	**1.5712**	**4.7400e-003**	**0.2293**	**0.0429**	**0.2722**	**0.0618**	**0.0413**	**0.1031**	**0.0000**	**429.5196**	**429.5196**	**0.0310**	**0.0000**	**430.2946**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1089	0.9677	0.8471	2.2300e-003	0.0970	0.0390	0.1360	0.0280	0.0369	0.0648	0.0000	201.1877	201.1877	0.0232	0.0000	201.7672
2022	0.1779	1.3778	1.5712	4.7400e-003	0.2120	0.0429	0.2549	0.0576	0.0413	0.0989	0.0000	429.5194	429.5194	0.0310	0.0000	430.2944
2023	1.8350	0.1061	0.1511	3.3000e-004	0.0105	4.5200e-003	0.0150	2.8400e-003	4.2700e-003	7.1100e-003	0.0000	29.4226	29.4226	4.3600e-003	0.0000	29.5315
Maximum	**1.8350**	**1.3778**	**1.5712**	**4.7400e-003**	**0.2120**	**0.0429**	**0.2549**	**0.0576**	**0.0413**	**0.0989**	**0.0000**	**429.5194**	**429.5194**	**0.0310**	**0.0000**	**430.2944**

	ROG	NOx	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**	**14.78**	**0.00**	**12.01**	**15.83**	**0.00**	**8.86**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**7-1-2021**	**9-30-2021**	0.6827	0.6827
2	**10-1-2021**	**12-31-2021**	0.4287	0.4287
3	**1-1-2022**	**3-31-2022**	0.3875	0.3875
4	**4-1-2022**	**6-30-2022**	0.3872	0.3872
5	**7-1-2022**	**9-30-2022**	0.3914	0.3914
6	**10-1-2022**	**12-31-2022**	0.3961	0.3961
7	**1-1-2023**	**3-31-2023**	1.8807	1.8807
		Highest	1.8807	1.8807

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	7/1/2021	8/19/2021	5	36	a
2	Demolition Debris Haul	Demolition	7/1/2021	8/19/2021	5	36	b
3	Site Preparation	Site Preparation	8/20/2021	8/25/2021	5	4	c

4	Site Preparation Soil Haul	Site Preparation	8/20/2021	8/25/2021	5	4	d
5	Grading	Grading	8/26/2021	9/5/2021	5	7	e
6	Building Construction	Building Construction	9/6/2021	1/12/2023	5	354	g
7	Paving	Paving	1/13/2023	2/6/2023	5	17	h
8	Architectural Coating	Architectural Coating	2/7/2023	3/1/2023	5	17	i

Acres of Grading (Site Preparation Phase): 2

Acres of Grading (Grading Phase): 2.63

Acres of Paving: 0.12

Residential Indoor: 344,448; Residential Outdoor: 114,816; Non-Residential Indoor: 174,188; Non-Residential Outdoor: 58,063; Striped

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	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Demolition Debris Haul	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition Debris Haul	Rubber Tired Dozers	0	8.00	247	0.40
Demolition Debris Haul	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation Soil Haul	Graders	0	8.00	187	0.41
Site Preparation Soil Haul	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation Soil Haul	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	1.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	1.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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	5	13.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition Debris Haul	0	0.00	0.00	241.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation Soil Haul	0	0.00	0.00	22.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	189.00	41.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	38.00	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

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0359	0.3545	0.2609	4.3000e-004		0.0187	0.0187		0.0175	0.0175	0.0000	37.9284	37.9284	9.7000e-003	0.0000	38.1709
Total	**0.0359**	**0.3545**	**0.2609**	**4.3000e-004**		**0.0187**	**0.0187**		**0.0175**	**0.0175**	**0.0000**	**37.9284**	**37.9284**	**9.7000e-003**	**0.0000**	**38.1709**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	3.8500e-003	8.2000e-004	1.0000e-005	2.4000e-004	1.0000e-005	2.4000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.9431	0.9431	5.0000e-005	0.0000	0.9444
Worker	7.5000e-004	5.3000e-004	5.5800e-003	2.0000e-005	1.8500e-003	1.0000e-005	1.8600e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.5876	1.5876	4.0000e-005	0.0000	1.5886
Total	**8.6000e-004**	**4.3800e-003**	**6.4000e-003**	**3.0000e-005**	**2.0900e-003**	**2.0000e-005**	**2.1000e-003**	**5.6000e-004**	**2.0000e-005**	**5.8000e-004**	**0.0000**	**2.5307**	**2.5307**	**9.0000e-005**	**0.0000**	**2.5330**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0359	0.3545	0.2609	4.3000e-004		0.0187	0.0187		0.0175	0.0175	0.0000	37.9284	37.9284	9.7000e-003	0.0000	38.1708
Total	**0.0359**	**0.3545**	**0.2609**	**4.3000e-004**		**0.0187**	**0.0187**		**0.0175**	**0.0175**	**0.0000**	**37.9284**	**37.9284**	**9.7000e-003**	**0.0000**	**38.1708**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	3.8500e-003	8.2000e-004	1.0000e-005	2.2000e-004	1.0000e-005	2.3000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.9431	0.9431	5.0000e-005	0.0000	0.9444
Worker	7.5000e-004	5.3000e-004	5.5800e-003	2.0000e-005	1.7100e-003	1.0000e-005	1.7200e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.5876	1.5876	4.0000e-005	0.0000	1.5886
Total	**8.6000e-004**	**4.3800e-003**	**6.4000e-003**	**3.0000e-005**	**1.9300e-003**	**2.0000e-005**	**1.9500e-003**	**5.2000e-004**	**2.0000e-005**	**5.4000e-004**	**0.0000**	**2.5307**	**2.5307**	**9.0000e-005**	**0.0000**	**2.5330**

3.3 Demolition Debris Haul - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0257	0.0000	0.0257	3.8900e-003	0.0000	3.8900e-003	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0257**	**0.0000**	**0.0257**	**3.8900e-003**	**0.0000**	**3.8900e-003**	**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	tons/yr										MT/yr					
Hauling	9.7000e-004	0.0325	6.0300e-003	9.0000e-005	2.0400e-003	1.0000e-004	2.1400e-003	5.6000e-004	9.0000e-005	6.6000e-004	0.0000	9.1103	9.1103	4.5000e-004	0.0000	9.1216
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	**9.7000e-004**	**0.0325**	**6.0300e-003**	**9.0000e-005**	**2.0400e-003**	**1.0000e-004**	**2.1400e-003**	**5.6000e-004**	**9.0000e-005**	**6.6000e-004**	**0.0000**	**9.1103**	**9.1103**	**4.5000e-004**	**0.0000**	**9.1216**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0110	0.0000	0.0110	1.6600e-003	0.0000	1.6600e-003	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0110**	**0.0000**	**0.0110**	**1.6600e-003**	**0.0000**	**1.6600e-003**	**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	tons/yr										MT/yr					
Hauling	9.7000e-004	0.0325	6.0300e-003	9.0000e-005	1.9000e-003	1.0000e-004	2.0000e-003	5.3000e-004	9.0000e-005	6.2000e-004	0.0000	9.1103	9.1103	4.5000e-004	0.0000	9.1216
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	**9.7000e-004**	**0.0325**	**6.0300e-003**	**9.0000e-005**	**1.9000e-003**	**1.0000e-004**	**2.0000e-003**	**5.3000e-004**	**9.0000e-005**	**6.2000e-004**	**0.0000**	**9.1103**	**9.1103**	**4.5000e-004**	**0.0000**	**9.1216**

3.4 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0116	0.0000	0.0116	5.9100e-003	0.0000	5.9100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1100e-003	0.0348	0.0151	3.0000e-005		1.5300e-003	1.5300e-003		1.4100e-003	1.4100e-003	0.0000	3.0237	3.0237	9.8000e-004	0.0000	3.0481
Total	**3.1100e-003**	**0.0348**	**0.0151**	**3.0000e-005**	**0.0116**	**1.5300e-003**	**0.0131**	**5.9100e-003**	**1.4100e-003**	**7.3200e-003**	**0.0000**	**3.0237**	**3.0237**	**9.8000e-004**	**0.0000**	**3.0481**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	4.3000e-004	9.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1048	0.1048	1.0000e-005	0.0000	0.1049
Worker	5.0000e-005	4.0000e-005	3.8000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1086	0.1086	0.0000	0.0000	0.1086
Total	**6.0000e-005**	**4.7000e-004**	**4.7000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.2134**	**0.2134**	**1.0000e-005**	**0.0000**	**0.2136**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9600e-003	0.0000	4.9600e-003	2.5300e-003	0.0000	2.5300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1100e-003	0.0348	0.0151	3.0000e-005		1.5300e-003	1.5300e-003		1.4100e-003	1.4100e-003	0.0000	3.0237	3.0237	9.8000e-004	0.0000	3.0481
Total	**3.1100e-003**	**0.0348**	**0.0151**	**3.0000e-005**	**4.9600e-003**	**1.5300e-003**	**6.4900e-003**	**2.5300e-003**	**1.4100e-003**	**3.9400e-003**	**0.0000**	**3.0237**	**3.0237**	**9.8000e-004**	**0.0000**	**3.0481**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	4.3000e-004	9.0000e-005	0.0000	2.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1048	0.1048	1.0000e-005	0.0000	0.1049
Worker	5.0000e-005	4.0000e-005	3.8000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1086	0.1086	0.0000	0.0000	0.1086
Total	**6.0000e-005**	**4.7000e-004**	**4.7000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**1.5000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.2134**	**0.2134**	**1.0000e-005**	**0.0000**	**0.2136**

3.5 Site Preparation Soil Haul - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0000e-005	0.0000	1.0000e-005	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**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	tons/yr										MT/yr					
Hauling	9.0000e-005	2.9700e-003	5.5000e-004	1.0000e-005	1.9000e-004	1.0000e-005	2.0000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.8317	0.8317	4.0000e-005	0.0000	0.8327
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	**9.0000e-005**	**2.9700e-003**	**5.5000e-004**	**1.0000e-005**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**5.0000e-005**	**1.0000e-005**	**6.0000e-005**	**0.0000**	**0.8317**	**0.8317**	**4.0000e-005**	**0.0000**	**0.8327**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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
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	tons/yr										MT/yr					
Hauling	9.0000e-005	2.9700e-003	5.5000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.8317	0.8317	4.0000e-005	0.0000	0.8327
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	**9.0000e-005**	**2.9700e-003**	**5.5000e-004**	**1.0000e-005**	**1.7000e-004**	**1.0000e-005**	**1.8000e-004**	**5.0000e-005**	**1.0000e-005**	**6.0000e-005**	**0.0000**	**0.8317**	**0.8317**	**4.0000e-005**	**0.0000**	**0.8327**

3.6 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0172	0.0000	0.0172	8.8400e-003	0.0000	8.8400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5100e-003	0.0502	0.0222	5.0000e-005		2.2300e-003	2.2300e-003		2.0500e-003	2.0500e-003	0.0000	4.3343	4.3343	1.4000e-003	0.0000	4.3693
Total	**4.5100e-003**	**0.0502**	**0.0222**	**5.0000e-005**	**0.0172**	**2.2300e-003**	**0.0194**	**8.8400e-003**	**2.0500e-003**	**0.0109**	**0.0000**	**4.3343**	**4.3343**	**1.4000e-003**	**0.0000**	**4.3693**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	7.5000e-004	1.6000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1834	0.1834	1.0000e-005	0.0000	0.1836
Worker	9.0000e-005	6.0000e-005	6.7000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1900	0.1900	0.0000	0.0000	0.1901
Total	**1.1000e-004**	**8.1000e-004**	**8.3000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.3734**	**0.3734**	**1.0000e-005**	**0.0000**	**0.3737**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.3500e-003	0.0000	7.3500e-003	3.7800e-003	0.0000	3.7800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5100e-003	0.0502	0.0222	5.0000e-005		2.2300e-003	2.2300e-003		2.0500e-003	2.0500e-003	0.0000	4.3343	4.3343	1.4000e-003	0.0000	4.3693
Total	**4.5100e-003**	**0.0502**	**0.0222**	**5.0000e-005**	**7.3500e-003**	**2.2300e-003**	**9.5800e-003**	**3.7800e-003**	**2.0500e-003**	**5.8300e-003**	**0.0000**	**4.3343**	**4.3343**	**1.4000e-003**	**0.0000**	**4.3693**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	7.5000e-004	1.6000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1834	0.1834	1.0000e-005	0.0000	0.1836
Worker	9.0000e-005	6.0000e-005	6.7000e-004	0.0000	2.0000e-004	0.0000	2.1000e-004	5.0000e-005	0.0000	6.0000e-005	0.0000	0.1900	0.1900	0.0000	0.0000	0.1901
Total	**1.1000e-004**	**8.1000e-004**	**8.3000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.5000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.3734**	**0.3734**	**1.0000e-005**	**0.0000**	**0.3737**

3.7 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0323	0.2824	0.3038	5.0000e-004		0.0156	0.0156		0.0150	0.0150	0.0000	42.6954	42.6954	6.6900e-003	0.0000	42.8625
Total	**0.0323**	**0.2824**	**0.3038**	**5.0000e-004**		**0.0156**	**0.0156**		**0.0150**	**0.0150**	**0.0000**	**42.6954**	**42.6954**	**6.6900e-003**	**0.0000**	**42.8625**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3900e-003	0.1864	0.0395	4.8000e-004	0.0114	3.9000e-004	0.0118	3.3100e-003	3.7000e-004	3.6800e-003	0.0000	45.6484	45.6484	2.5100e-003	0.0000	45.7111
Worker	0.0257	0.0183	0.1915	6.0000e-004	0.0635	4.3000e-004	0.0639	0.0169	3.9000e-004	0.0173	0.0000	54.4983	54.4983	1.3000e-003	0.0000	54.5309
Total	**0.0310**	**0.2047**	**0.2309**	**1.0800e-003**	**0.0750**	**8.2000e-004**	**0.0758**	**0.0202**	**7.6000e-004**	**0.0210**	**0.0000**	**100.1467**	**100.1467**	**3.8100e-003**	**0.0000**	**100.2419**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0323	0.2824	0.3038	5.0000e-004		0.0156	0.0156		0.0150	0.0150	0.0000	42.6954	42.6954	6.6900e-003	0.0000	42.8625
Total	**0.0323**	**0.2824**	**0.3038**	**5.0000e-004**		**0.0156**	**0.0156**		**0.0150**	**0.0150**	**0.0000**	**42.6954**	**42.6954**	**6.6900e-003**	**0.0000**	**42.8625**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3900e-003	0.1864	0.0395	4.8000e-004	0.0107	3.9000e-004	0.0111	3.1300e-003	3.7000e-004	3.5000e-003	0.0000	45.6484	45.6484	2.5100e-003	0.0000	45.7111
Worker	0.0257	0.0183	0.1915	6.0000e-004	0.0586	4.3000e-004	0.0590	0.0157	3.9000e-004	0.0161	0.0000	54.4983	54.4983	1.3000e-003	0.0000	54.5309
Total	**0.0310**	**0.2047**	**0.2309**	**1.0800e-003**	**0.0693**	**8.2000e-004**	**0.0701**	**0.0188**	**7.6000e-004**	**0.0196**	**0.0000**	**100.1467**	**100.1467**	**3.8100e-003**	**0.0000**	**100.2419**

3.7 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0896	0.7862	0.9220	1.5300e-003		0.0406	0.0406		0.0392	0.0392	0.0000	130.6290	130.6290	0.0201	0.0000	131.1316
Total	**0.0896**	**0.7862**	**0.9220**	**1.5300e-003**		**0.0406**	**0.0406**		**0.0392**	**0.0392**	**0.0000**	**130.6290**	**130.6290**	**0.0201**	**0.0000**	**131.1316**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0154	0.5415	0.1131	1.4400e-003	0.0350	1.0300e-003	0.0360	0.0101	9.8000e-004	0.0111	0.0000	138.2650	138.2650	7.3300e-003	0.0000	138.4482
Worker	0.0729	0.0501	0.5361	1.7800e-003	0.1943	1.2700e-003	0.1955	0.0517	1.1700e-003	0.0529	0.0000	160.6256	160.6256	3.5700e-003	0.0000	160.7147
Total	**0.0883**	**0.5916**	**0.6492**	**3.2200e-003**	**0.2293**	**2.3000e-003**	**0.2316**	**0.0618**	**2.1500e-003**	**0.0640**	**0.0000**	**298.8905**	**298.8905**	**0.0109**	**0.0000**	**299.1629**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0896	0.7862	0.9220	1.5300e-003		0.0406	0.0406		0.0392	0.0392	0.0000	130.6289	130.6289	0.0201	0.0000	131.1315
Total	**0.0896**	**0.7862**	**0.9220**	**1.5300e-003**		**0.0406**	**0.0406**		**0.0392**	**0.0392**	**0.0000**	**130.6289**	**130.6289**	**0.0201**	**0.0000**	**131.1315**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0154	0.5415	0.1131	1.4400e-003	0.0328	1.0300e-003	0.0338	9.5800e-003	9.8000e-004	0.0106	0.0000	138.2650	138.2650	7.3300e-003	0.0000	138.4482
Worker	0.0729	0.0501	0.5361	1.7800e-003	0.1792	1.2700e-003	0.1804	0.0480	1.1700e-003	0.0491	0.0000	160.6256	160.6256	3.5700e-003	0.0000	160.7147
Total	**0.0883**	**0.5916**	**0.6492**	**3.2200e-003**	**0.2120**	**2.3000e-003**	**0.2143**	**0.0576**	**2.1500e-003**	**0.0597**	**0.0000**	**298.8905**	**298.8905**	**0.0109**	**0.0000**	**299.1629**

3.7 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.8600e-003	0.0252	0.0318	5.0000e-005		1.2200e-003	1.2200e-003		1.1700e-003	1.1700e-003	0.0000	4.5228	4.5228	6.8000e-004	0.0000	4.5399
Total	**2.8600e-003**	**0.0252**	**0.0318**	**5.0000e-005**		**1.2200e-003**	**1.2200e-003**		**1.1700e-003**	**1.1700e-003**	**0.0000**	**4.5228**	**4.5228**	**6.8000e-004**	**0.0000**	**4.5399**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9000e-004	0.0145	3.4200e-003	5.0000e-005	1.2100e-003	2.0000e-005	1.2300e-003	3.5000e-004	1.0000e-005	3.7000e-004	0.0000	4.6499	4.6499	2.0000e-004	0.0000	4.6550
Worker	2.3500e-003	1.5500e-003	0.0170	6.0000e-005	6.7200e-003	4.0000e-005	6.7700e-003	1.7900e-003	4.0000e-005	1.8300e-003	0.0000	5.3475	5.3475	1.1000e-004	0.0000	5.3502
Total	**2.7400e-003**	**0.0161**	**0.0204**	**1.1000e-004**	**7.9300e-003**	**6.0000e-005**	**8.0000e-003**	**2.1400e-003**	**5.0000e-005**	**2.2000e-003**	**0.0000**	**9.9974**	**9.9974**	**3.1000e-004**	**0.0000**	**10.0052**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.8600e-003	0.0252	0.0318	5.0000e-005		1.2200e-003	1.2200e-003		1.1700e-003	1.1700e-003	0.0000	4.5228	4.5228	6.8000e-004	0.0000	4.5399
Total	**2.8600e-003**	**0.0252**	**0.0318**	**5.0000e-005**		**1.2200e-003**	**1.2200e-003**		**1.1700e-003**	**1.1700e-003**	**0.0000**	**4.5228**	**4.5228**	**6.8000e-004**	**0.0000**	**4.5399**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9000e-004	0.0145	3.4200e-003	5.0000e-005	1.1400e-003	2.0000e-005	1.1500e-003	3.3000e-004	1.0000e-005	3.5000e-004	0.0000	4.6499	4.6499	2.0000e-004	0.0000	4.6550
Worker	2.3500e-003	1.5500e-003	0.0170	6.0000e-005	6.2000e-003	4.0000e-005	6.2400e-003	1.6600e-003	4.0000e-005	1.7000e-003	0.0000	5.3475	5.3475	1.1000e-004	0.0000	5.3502
Total	**2.7400e-003**	**0.0161**	**0.0204**	**1.1000e-004**	**7.3400e-003**	**6.0000e-005**	**7.3900e-003**	**1.9900e-003**	**5.0000e-005**	**2.0500e-003**	**0.0000**	**9.9974**	**9.9974**	**3.1000e-004**	**0.0000**	**10.0052**

3.8 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.4800e-003	0.0530	0.0748	1.2000e-004		2.6200e-003	2.6200e-003		2.4200e-003	2.4200e-003	0.0000	10.0066	10.0066	3.1700e-003	0.0000	10.0859
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.4800e-003**	**0.0530**	**0.0748**	**1.2000e-004**		**2.6200e-003**	**2.6200e-003**		**2.4200e-003**	**2.4200e-003**	**0.0000**	**10.0066**	**10.0066**	**3.1700e-003**	**0.0000**	**10.0859**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	2.0000e-004	2.2100e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.6948	0.6948	1.0000e-005	0.0000	0.6951
Total	**3.1000e-004**	**2.0000e-004**	**2.2100e-003**	**1.0000e-005**	**8.7000e-004**	**1.0000e-005**	**8.8000e-004**	**2.3000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.6948**	**0.6948**	**1.0000e-005**	**0.0000**	**0.6951**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.4800e-003	0.0530	0.0748	1.2000e-004		2.6200e-003	2.6200e-003		2.4200e-003	2.4200e-003	0.0000	10.0066	10.0066	3.1700e-003	0.0000	10.0859
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.4800e-003**	**0.0530**	**0.0748**	**1.2000e-004**		**2.6200e-003**	**2.6200e-003**		**2.4200e-003**	**2.4200e-003**	**0.0000**	**10.0066**	**10.0066**	**3.1700e-003**	**0.0000**	**10.0859**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	2.0000e-004	2.2100e-003	1.0000e-005	8.1000e-004	1.0000e-005	8.1000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.6948	0.6948	1.0000e-005	0.0000	0.6951
Total	**3.1000e-004**	**2.0000e-004**	**2.2100e-003**	**1.0000e-005**	**8.1000e-004**	**1.0000e-005**	**8.1000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.6948**	**0.6948**	**1.0000e-005**	**0.0000**	**0.6951**

3.9 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8211					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e-003	0.0111	0.0154	3.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004	0.0000	2.1703	2.1703	1.3000e-004	0.0000	2.1735
Total	**1.8227**	**0.0111**	**0.0154**	**3.0000e-005**		**6.0000e-004**	**6.0000e-004**		**6.0000e-004**	**6.0000e-004**	**0.0000**	**2.1703**	**2.1703**	**1.3000e-004**	**0.0000**	**2.1735**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	5.9000e-004	6.4500e-003	2.0000e-005	2.5500e-003	2.0000e-005	2.5700e-003	6.8000e-004	2.0000e-005	6.9000e-004	0.0000	2.0308	2.0308	4.0000e-005	0.0000	2.0319
Total	**8.9000e-004**	**5.9000e-004**	**6.4500e-003**	**2.0000e-005**	**2.5500e-003**	**2.0000e-005**	**2.5700e-003**	**6.8000e-004**	**2.0000e-005**	**6.9000e-004**	**0.0000**	**2.0308**	**2.0308**	**4.0000e-005**	**0.0000**	**2.0319**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8211					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e-003	0.0111	0.0154	3.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004	0.0000	2.1703	2.1703	1.3000e-004	0.0000	2.1735
Total	**1.8227**	**0.0111**	**0.0154**	**3.0000e-005**		**6.0000e-004**	**6.0000e-004**		**6.0000e-004**	**6.0000e-004**	**0.0000**	**2.1703**	**2.1703**	**1.3000e-004**	**0.0000**	**2.1735**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	5.9000e-004	6.4500e-003	2.0000e-005	2.3600e-003	2.0000e-005	2.3700e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.0308	2.0308	4.0000e-005	0.0000	2.0319
Total	**8.9000e-004**	**5.9000e-004**	**6.4500e-003**	**2.0000e-005**	**2.3600e-003**	**2.0000e-005**	**2.3700e-003**	**6.3000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.0308**	**2.0308**	**4.0000e-005**	**0.0000**	**2.0319**

CalEEMod Mitigated Construction Model

Callan and E 14th Street Infill Checklist Project Mitigated Construction

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Bank (with Drive-Through)	2.52	1000sqft	0.00	2,515.00	0
Enclosed Parking with Elevator	87.26	1000sqft	0.00	87,257.00	0
Other Non-Asphalt Surfaces	5.16	1000sqft	0.12	5,156.00	0
Fast Food Restaurant w/o Drive Thru	1.55	1000sqft	0.00	1,547.00	0
Apartments Mid Rise	196.00	Dwelling Unit	1.52	170,098.00	561
Regional Shopping Center	1.60	1000sqft	0.00	1,598.00	0
Supermarket	23.21	1000sqft	0.00	23,208.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - based on ground floor land use acreage, assigning all land use acreage to apartments

Construction Phase - based on CalEEMod default construction duration normalized to fit 20 month construction schedule from applicant

Off-road Equipment -

Off-road Equipment - MM: limit crane use

Off-road Equipment - no additional equipment required for Demolition Debris Haul

Off-road Equipment -

Off-road Equipment - no additional equipment required for Grading Soil Haul

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - no additional equipment required for Site Preparation Soil Haul

Trips and VMT - assuming 2 vt/water truck/day. see assumptions file for hauling trips calculations

Demolition -

Grading -

Architectural Coating - assuming the parking structure would also be coated and that only parking area would be striped

Construction Off-road Equipment Mitigation - BAAQMD Construction BMPs, MM: Tier 4 Equipment

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	14,434.00	58,063.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	43,302.00	174,188.00
tblArchitecturalCoating	ConstArea_Parking	5,545.00	5,235.00
tblAreaCoating	Area_Residential_Exterior	114816	128276
tblAreaCoating	Area_Residential_Interior	344448	384829
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	20.00	36.00
tblConstructionPhase	NumDays	20.00	36.00
tblConstructionPhase	NumDays	2.00	4.00
tblConstructionPhase	NumDays	2.00	4.00
tblConstructionPhase	NumDays	4.00	7.00
tblConstructionPhase	NumDays	200.00	354.00
tblConstructionPhase	NumDays	10.00	17.00
tblConstructionPhase	NumDays	10.00	17.00
tblGrading	MaterialExported	0.00	177.00
tblLandUse	LandUseSquareFeet	2,520.00	2,515.00
tblLandUse	LandUseSquareFeet	87,260.00	87,257.00
tblLandUse	LandUseSquareFeet	5,160.00	5,156.00
tblLandUse	LandUseSquareFeet	1,550.00	1,547.00
tblLandUse	LandUseSquareFeet	196,000.00	170,098.00
tblLandUse	LandUseSquareFeet	1,600.00	1,598.00
tblLandUse	LandUseSquareFeet	23,210.00	23,208.00
tblLandUse	LotAcreage	0.06	0.00
tblLandUse	LotAcreage	2.00	0.00

tblLandUse	LotAcreage	0.04	0.00
tblLandUse	LotAcreage	5.16	1.52
tblLandUse	LotAcreage	0.04	0.00
tblLandUse	LotAcreage	0.53	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblTripsAndVMT	HaulingTripNumber	238.00	241.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1089	0.9677	0.8471	2.2300e-003	0.1342	0.0390	0.1733	0.0401	0.0369	0.0770	0.0000	201.1878	201.1878	0.0232	0.0000	201.7673
2022	0.1779	1.3778	1.5712	4.7400e-003	0.2293	0.0429	0.2722	0.0618	0.0413	0.1031	0.0000	429.5196	429.5196	0.0310	0.0000	430.2946
2023	1.8350	0.1061	0.1511	3.3000e-004	0.0114	4.5200e-003	0.0159	3.0500e-003	4.2700e-003	7.3200e-003	0.0000	29.4226	29.4226	4.3600e-003	0.0000	29.5315
Maximum	**1.8350**	**1.3778**	**1.5712**	**4.7400e-003**	**0.2293**	**0.0429**	**0.2722**	**0.0618**	**0.0413**	**0.1031**	**0.0000**	**429.5196**	**429.5196**	**0.0310**	**0.0000**	**430.2946**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0526	0.6232	0.8949	2.2300e-003	0.0970	3.1700e-003	0.1002	0.0280	3.1100e-003	0.0311	0.0000	201.1877	201.1877	0.0232	0.0000	201.7672
2022	0.1178	1.1999	1.6411	4.7400e-003	0.2120	6.6100e-003	0.2186	0.0576	6.4700e-003	0.0640	0.0000	429.5194	429.5194	0.0310	0.0000	430.2944
2023	1.8287	0.0978	0.1647	3.3000e-004	0.0105	5.4000e-004	0.0110	2.8400e-003	5.3000e-004	3.3700e-003	0.0000	29.4226	29.4226	4.3600e-003	0.0000	29.5315
Maximum	**1.8287**	**1.1999**	**1.6411**	**4.7400e-003**	**0.2120**	**6.6100e-003**	**0.2186**	**0.0576**	**6.4700e-003**	**0.0640**	**0.0000**	**429.5194**	**429.5194**	**0.0310**	**0.0000**	**430.2944**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**5.78**	**21.65**	**-5.11**	**0.00**	**14.78**	**88.07**	**28.52**	**15.83**	**87.74**	**47.45**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**7-1-2021**	**9-30-2021**	0.6827	0.3608
2	**10-1-2021**	**12-31-2021**	0.4287	0.3466
3	**1-1-2022**	**3-31-2022**	0.3875	0.3286
4	**4-1-2022**	**6-30-2022**	0.3872	0.3277
5	**7-1-2022**	**9-30-2022**	0.3914	0.3313
6	**10-1-2022**	**12-31-2022**	0.3961	0.3359
7	**1-1-2023**	**3-31-2023**	1.8807	1.8663
		Highest	1.8807	1.8663

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	7/1/2021	8/19/2021	5	36	a
2	Demolition Debris Haul	Demolition	7/1/2021	8/19/2021	5	36	b
3	Site Preparation	Site Preparation	8/20/2021	8/25/2021	5	4	c

4	Site Preparation Soil Haul	Site Preparation	8/20/2021	8/25/2021	5	4	d
5	Grading	Grading	8/26/2021	9/5/2021	5	7	e
6	Building Construction	Building Construction	9/6/2021	1/12/2023	5	354	g
7	Paving	Paving	1/13/2023	2/6/2023	5	17	h
8	Architectural Coating	Architectural Coating	2/7/2023	3/1/2023	5	17	i

Acres of Grading (Site Preparation Phase): 2

Acres of Grading (Grading Phase): 2.63

Acres of Paving: 0.12

Residential Indoor: 344,448; Residential Outdoor: 114,816; Non-Residential Indoor: 174,188; Non-Residential Outdoor: 58,063; Striped

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	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Demolition Debris Haul	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition Debris Haul	Rubber Tired Dozers	0	8.00	247	0.40
Demolition Debris Haul	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation Soil Haul	Graders	0	8.00	187	0.41
Site Preparation Soil Haul	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation Soil Haul	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	1.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	1.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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	5	13.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition Debris Haul	0	0.00	0.00	241.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation Soil Haul	0	0.00	0.00	22.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	189.00	41.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	38.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0359	0.3545	0.2609	4.3000e-004		0.0187	0.0187		0.0175	0.0175	0.0000	37.9284	37.9284	9.7000e-003	0.0000	38.1709
Total	**0.0359**	**0.3545**	**0.2609**	**4.3000e-004**		**0.0187**	**0.0187**		**0.0175**	**0.0175**	**0.0000**	**37.9284**	**37.9284**	**9.7000e-003**	**0.0000**	**38.1709**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	3.8500e-003	8.2000e-004	1.0000e-005	2.4000e-004	1.0000e-005	2.4000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.9431	0.9431	5.0000e-005	0.0000	0.9444
Worker	7.5000e-004	5.3000e-004	5.5800e-003	2.0000e-005	1.8500e-003	1.0000e-005	1.8600e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.5876	1.5876	4.0000e-005	0.0000	1.5886
Total	**8.6000e-004**	**4.3800e-003**	**6.4000e-003**	**3.0000e-005**	**2.0900e-003**	**2.0000e-005**	**2.1000e-003**	**5.6000e-004**	**2.0000e-005**	**5.8000e-004**	**0.0000**	**2.5307**	**2.5307**	**9.0000e-005**	**0.0000**	**2.5330**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.3300e-003	0.1538	0.2775	4.3000e-004		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004	0.0000	37.9284	37.9284	9.7000e-003	0.0000	38.1708

Total	**8.3300e-003**	**0.1538**	**0.2775**	**4.3000e-004**		**6.7000e-004**	**6.7000e-004**		**6.7000e-004**	**6.7000e-004**	**0.0000**	**37.9284**	**37.9284**	**9.7000e-003**	**0.0000**	**38.1708**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	3.8500e-003	8.2000e-004	1.0000e-005	2.2000e-004	1.0000e-005	2.3000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.9431	0.9431	5.0000e-005	0.0000	0.9444
Worker	7.5000e-004	5.3000e-004	5.5800e-003	2.0000e-005	1.7100e-003	1.0000e-005	1.7200e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.5876	1.5876	4.0000e-005	0.0000	1.5886
Total	**8.6000e-004**	**4.3800e-003**	**6.4000e-003**	**3.0000e-005**	**1.9300e-003**	**2.0000e-005**	**1.9500e-003**	**5.2000e-004**	**2.0000e-005**	**5.4000e-004**	**0.0000**	**2.5307**	**2.5307**	**9.0000e-005**	**0.0000**	**2.5330**

3.3 Demolition Debris Haul - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0257	0.0000	0.0257	3.8900e-003	0.0000	3.8900e-003	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0257**	**0.0000**	**0.0257**	**3.8900e-003**	**0.0000**	**3.8900e-003**	**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	tons/yr										MT/yr					
Hauling	9.7000e-004	0.0325	6.0300e-003	9.0000e-005	2.0400e-003	1.0000e-004	2.1400e-003	5.6000e-004	9.0000e-005	6.6000e-004	0.0000	9.1103	9.1103	4.5000e-004	0.0000	9.1216
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	**9.7000e-004**	**0.0325**	**6.0300e-003**	**9.0000e-005**	**2.0400e-003**	**1.0000e-004**	**2.1400e-003**	**5.6000e-004**	**9.0000e-005**	**6.6000e-004**	**0.0000**	**9.1103**	**9.1103**	**4.5000e-004**	**0.0000**	**9.1216**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0110	0.0000	0.0110	1.6600e-003	0.0000	1.6600e-003	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0110**	**0.0000**	**0.0110**	**1.6600e-003**	**0.0000**	**1.6600e-003**	**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	tons/yr										MT/yr					
Hauling	9.7000e-004	0.0325	6.0300e-003	9.0000e-005	1.9000e-003	1.0000e-004	2.0000e-003	5.3000e-004	9.0000e-005	6.2000e-004	0.0000	9.1103	9.1103	4.5000e-004	0.0000	9.1216

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	**9.7000e-004**	**0.0325**	**6.0300e-003**	**9.0000e-005**	**1.9000e-003**	**1.0000e-004**	**2.0000e-003**	**5.3000e-004**	**9.0000e-005**	**6.2000e-004**	**0.0000**	**9.1103**	**9.1103**	**4.5000e-004**	**0.0000**	**9.1216**

3.4 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0116	0.0000	0.0116	5.9100e-003	0.0000	5.9100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1100e-003	0.0348	0.0151	3.0000e-005		1.5300e-003	1.5300e-003		1.4100e-003	1.4100e-003	0.0000	3.0237	3.0237	9.8000e-004	0.0000	3.0481
Total	**3.1100e-003**	**0.0348**	**0.0151**	**3.0000e-005**	**0.0116**	**1.5300e-003**	**0.0131**	**5.9100e-003**	**1.4100e-003**	**7.3200e-003**	**0.0000**	**3.0237**	**3.0237**	**9.8000e-004**	**0.0000**	**3.0481**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	4.3000e-004	9.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1048	0.1048	1.0000e-005	0.0000	0.1049
Worker	5.0000e-005	4.0000e-005	3.8000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1086	0.1086	0.0000	0.0000	0.1086
Total	**6.0000e-005**	**4.7000e-004**	**4.7000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.2134**	**0.2134**	**1.0000e-005**	**0.0000**	**0.2136**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9600e-003	0.0000	4.9600e-003	2.5300e-003	0.0000	2.5300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0000e-004	0.0101	0.0196	3.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	3.0237	3.0237	9.8000e-004	0.0000	3.0481
Total	**6.0000e-004**	**0.0101**	**0.0196**	**3.0000e-005**	**4.9600e-003**	**6.0000e-005**	**5.0200e-003**	**2.5300e-003**	**6.0000e-005**	**2.5900e-003**	**0.0000**	**3.0237**	**3.0237**	**9.8000e-004**	**0.0000**	**3.0481**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	4.3000e-004	9.0000e-005	0.0000	2.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1048	0.1048	1.0000e-005	0.0000	0.1049
Worker	5.0000e-005	4.0000e-005	3.8000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1086	0.1086	0.0000	0.0000	0.1086
Total	**6.0000e-005**	**4.7000e-004**	**4.7000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**1.5000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.2134**	**0.2134**	**1.0000e-005**	**0.0000**	**0.2136**

3.5 Site Preparation Soil Haul - 2021

Unmitigated Construction On-Site

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

Fugitive Dust					1.0000e-005	0.0000	1.0000e-005	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
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**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	tons/yr										MT/yr					
Hauling	9.0000e-005	2.9700e-003	5.5000e-004	1.0000e-005	1.9000e-004	1.0000e-005	2.0000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.8317	0.8317	4.0000e-005	0.0000	0.8327
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	**9.0000e-005**	**2.9700e-003**	**5.5000e-004**	**1.0000e-005**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**5.0000e-005**	**1.0000e-005**	**6.0000e-005**	**0.0000**	**0.8317**	**0.8317**	**4.0000e-005**	**0.0000**	**0.8327**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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
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	tons/yr										MT/yr					
Hauling	9.0000e-005	2.9700e-003	5.5000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.8317	0.8317	4.0000e-005	0.0000	0.8327
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	**9.0000e-005**	**2.9700e-003**	**5.5000e-004**	**1.0000e-005**	**1.7000e-004**	**1.0000e-005**	**1.8000e-004**	**5.0000e-005**	**1.0000e-005**	**6.0000e-005**	**0.0000**	**0.8317**	**0.8317**	**4.0000e-005**	**0.0000**	**0.8327**

3.6 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0172	0.0000	0.0172	8.8400e-003	0.0000	8.8400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5100e-003	0.0502	0.0222	5.0000e-005		2.2300e-003	2.2300e-003		2.0500e-003	2.0500e-003	0.0000	4.3343	4.3343	1.4000e-003	0.0000	4.3693
Total	**4.5100e-003**	**0.0502**	**0.0222**	**5.0000e-005**	**0.0172**	**2.2300e-003**	**0.0194**	**8.8400e-003**	**2.0500e-003**	**0.0109**	**0.0000**	**4.3343**	**4.3343**	**1.4000e-003**	**0.0000**	**4.3693**

Unmitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	7.5000e-004	1.6000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1834	0.1834	1.0000e-005	0.0000	0.1836
Worker	9.0000e-005	6.0000e-005	6.7000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1900	0.1900	0.0000	0.0000	0.1901
Total	**1.1000e-004**	**8.1000e-004**	**8.3000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.3734**	**0.3734**	**1.0000e-005**	**0.0000**	**0.3737**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.3500e-003	0.0000	7.3500e-003	3.7800e-003	0.0000	3.7800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.6000e-004	0.0146	0.0283	5.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	4.3343	4.3343	1.4000e-003	0.0000	4.3693
Total	**8.6000e-004**	**0.0146**	**0.0283**	**5.0000e-005**	**7.3500e-003**	**8.0000e-005**	**7.4300e-003**	**3.7800e-003**	**8.0000e-005**	**3.8600e-003**	**0.0000**	**4.3343**	**4.3343**	**1.4000e-003**	**0.0000**	**4.3693**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	7.5000e-004	1.6000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1834	0.1834	1.0000e-005	0.0000	0.1836
Worker	9.0000e-005	6.0000e-005	6.7000e-004	0.0000	2.0000e-004	0.0000	2.1000e-004	5.0000e-005	0.0000	6.0000e-005	0.0000	0.1900	0.1900	0.0000	0.0000	0.1901
Total	**1.1000e-004**	**8.1000e-004**	**8.3000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.5000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.3734**	**0.3734**	**1.0000e-005**	**0.0000**	**0.3737**

3.7 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0323	0.2824	0.3038	5.0000e-004		0.0156	0.0156		0.0150	0.0150	0.0000	42.6954	42.6954	6.6900e-003	0.0000	42.8625
Total	**0.0323**	**0.2824**	**0.3038**	**5.0000e-004**		**0.0156**	**0.0156**		**0.0150**	**0.0150**	**0.0000**	**42.6954**	**42.6954**	**6.6900e-003**	**0.0000**	**42.8625**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3900e-003	0.1864	0.0395	4.8000e-004	0.0114	3.9000e-004	0.0118	3.3100e-003	3.7000e-004	3.6800e-003	0.0000	45.6484	45.6484	2.5100e-003	0.0000	45.7111
Worker	0.0257	0.0183	0.1915	6.0000e-004	0.0635	4.3000e-004	0.0639	0.0169	3.9000e-004	0.0173	0.0000	54.4983	54.4983	1.3000e-003	0.0000	54.5309
Total	**0.0310**	**0.2047**	**0.2309**	**1.0800e-003**	**0.0750**	**8.2000e-004**	**0.0758**	**0.0202**	**7.6000e-004**	**0.0210**	**0.0000**	**100.1467**	**100.1467**	**3.8100e-003**	**0.0000**	**100.2419**

Mitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Off-Road	9.6500e-003	0.1989	0.3243	5.0000e-004		1.4100e-003	1.4100e-003		1.4100e-003	1.4100e-003	0.0000	42.6954	42.6954	6.6900e-003	0.0000	42.8625
Total	**9.6500e-003**	**0.1989**	**0.3243**	**5.0000e-004**		**1.4100e-003**	**1.4100e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**42.6954**	**42.6954**	**6.6900e-003**	**0.0000**	**42.8625**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3900e-003	0.1864	0.0395	4.8000e-004	0.0107	3.9000e-004	0.0111	3.1300e-003	3.7000e-004	3.5000e-003	0.0000	45.6484	45.6484	2.5100e-003	0.0000	45.7111
Worker	0.0257	0.0183	0.1915	6.0000e-004	0.0586	4.3000e-004	0.0590	0.0157	3.9000e-004	0.0161	0.0000	54.4983	54.4983	1.3000e-003	0.0000	54.5309
Total	**0.0310**	**0.2047**	**0.2309**	**1.0800e-003**	**0.0693**	**8.2000e-004**	**0.0701**	**0.0188**	**7.6000e-004**	**0.0196**	**0.0000**	**100.1467**	**100.1467**	**3.8100e-003**	**0.0000**	**100.2419**

3.7 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0896	0.7862	0.9220	1.5300e-003		0.0406	0.0406		0.0392	0.0392	0.0000	130.6290	130.6290	0.0201	0.0000	131.1316
Total	**0.0896**	**0.7862**	**0.9220**	**1.5300e-003**		**0.0406**	**0.0406**		**0.0392**	**0.0392**	**0.0000**	**130.6290**	**130.6290**	**0.0201**	**0.0000**	**131.1316**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0154	0.5415	0.1131	1.4400e-003	0.0350	1.0300e-003	0.0360	0.0101	9.8000e-004	0.0111	0.0000	138.2650	138.2650	7.3300e-003	0.0000	138.4482
Worker	0.0729	0.0501	0.5361	1.7800e-003	0.1943	1.2700e-003	0.1955	0.0517	1.1700e-003	0.0529	0.0000	160.6256	160.6256	3.5700e-003	0.0000	160.7147
Total	**0.0883**	**0.5916**	**0.6492**	**3.2200e-003**	**0.2293**	**2.3000e-003**	**0.2316**	**0.0618**	**2.1500e-003**	**0.0640**	**0.0000**	**298.8905**	**298.8905**	**0.0109**	**0.0000**	**299.1629**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0295	0.6083	0.9918	1.5300e-003		4.3100e-003	4.3100e-003		4.3100e-003	4.3100e-003	0.0000	130.6289	130.6289	0.0201	0.0000	131.1315
Total	**0.0295**	**0.6083**	**0.9918**	**1.5300e-003**		**4.3100e-003**	**4.3100e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**130.6289**	**130.6289**	**0.0201**	**0.0000**	**131.1315**

Mitigated Construction Off-Site

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

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0154	0.5415	0.1131	1.4400e-003	0.0328	1.0300e-003	0.0338	9.5800e-003	9.8000e-004	0.0106	0.0000	138.2650	138.2650	7.3300e-003	0.0000	138.4482
Worker	0.0729	0.0501	0.5361	1.7800e-003	0.1792	1.2700e-003	0.1804	0.0480	1.1700e-003	0.0491	0.0000	160.6256	160.6256	3.5700e-003	0.0000	160.7147
Total	**0.0883**	**0.5916**	**0.6492**	**3.2200e-003**	**0.2120**	**2.3000e-003**	**0.2143**	**0.0576**	**2.1500e-003**	**0.0597**	**0.0000**	**298.8905**	**298.8905**	**0.0109**	**0.0000**	**299.1629**

3.7 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.8600e-003	0.0252	0.0318	5.0000e-005		1.2200e-003	1.2200e-003		1.1700e-003	1.1700e-003	0.0000	4.5228	4.5228	6.8000e-004	0.0000	4.5399
Total	**2.8600e-003**	**0.0252**	**0.0318**	**5.0000e-005**		**1.2200e-003**	**1.2200e-003**		**1.1700e-003**	**1.1700e-003**	**0.0000**	**4.5228**	**4.5228**	**6.8000e-004**	**0.0000**	**4.5399**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9000e-004	0.0145	3.4200e-003	5.0000e-005	1.2100e-003	2.0000e-005	1.2300e-003	3.5000e-004	1.0000e-005	3.7000e-004	0.0000	4.6499	4.6499	2.0000e-004	0.0000	4.6550
Worker	2.3500e-003	1.5500e-003	0.0170	6.0000e-005	6.7200e-003	4.0000e-005	6.7700e-003	1.7900e-003	4.0000e-005	1.8300e-003	0.0000	5.3475	5.3475	1.1000e-004	0.0000	5.3502

Total	**2.7400e-003**	**0.0161**	**0.0204**	**1.1000e-004**	**7.9300e-003**	**6.0000e-005**	**8.0000e-003**	**2.1400e-003**	**5.0000e-005**	**2.2000e-003**	**0.0000**	**9.9974**	**9.9974**	**3.1000e-004**	**0.0000**	**10.0052**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.0200e-003	0.0211	0.0343	5.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	4.5228	4.5228	6.8000e-004	0.0000	4.5399
Total	**1.0200e-003**	**0.0211**	**0.0343**	**5.0000e-005**		**1.5000e-004**	**1.5000e-004**		**1.5000e-004**	**1.5000e-004**	**0.0000**	**4.5228**	**4.5228**	**6.8000e-004**	**0.0000**	**4.5399**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9000e-004	0.0145	3.4200e-003	5.0000e-005	1.1400e-003	2.0000e-005	1.1500e-003	3.3000e-004	1.0000e-005	3.5000e-004	0.0000	4.6499	4.6499	2.0000e-004	0.0000	4.6550
Worker	2.3500e-003	1.5500e-003	0.0170	6.0000e-005	6.2000e-003	4.0000e-005	6.2400e-003	1.6600e-003	4.0000e-005	1.7000e-003	0.0000	5.3475	5.3475	1.1000e-004	0.0000	5.3502
Total	**2.7400e-003**	**0.0161**	**0.0204**	**1.1000e-004**	**7.3400e-003**	**6.0000e-005**	**7.3900e-003**	**1.9900e-003**	**5.0000e-005**	**2.0500e-003**	**0.0000**	**9.9974**	**9.9974**	**3.1000e-004**	**0.0000**	**10.0052**

3.8 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.4800e-003	0.0530	0.0748	1.2000e-004		2.6200e-003	2.6200e-003		2.4200e-003	2.4200e-003	0.0000	10.0066	10.0066	3.1700e-003	0.0000	10.0859
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.4800e-003**	**0.0530**	**0.0748**	**1.2000e-004**		**2.6200e-003**	**2.6200e-003**		**2.4200e-003**	**2.4200e-003**	**0.0000**	**10.0066**	**10.0066**	**3.1700e-003**	**0.0000**	**10.0859**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	2.0000e-004	2.2100e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.6948	0.6948	1.0000e-005	0.0000	0.6951
Total	**3.1000e-004**	**2.0000e-004**	**2.2100e-003**	**1.0000e-005**	**8.7000e-004**	**1.0000e-005**	**8.8000e-004**	**2.3000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.6948**	**0.6948**	**1.0000e-005**	**0.0000**	**0.6951**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.2000e-003	0.0509	0.0857	1.2000e-004		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	10.0066	10.0066	3.1700e-003	0.0000	10.0859
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**2.2000e-003**	**0.0509**	**0.0857**	**1.2000e-004**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**10.0066**	**10.0066**	**3.1700e-003**	**0.0000**	**10.0859**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	2.0000e-004	2.2100e-003	1.0000e-005	8.1000e-004	1.0000e-005	8.1000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.6948	0.6948	1.0000e-005	0.0000	0.6951
Total	**3.1000e-004**	**2.0000e-004**	**2.2100e-003**	**1.0000e-005**	**8.1000e-004**	**1.0000e-005**	**8.1000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.6948**	**0.6948**	**1.0000e-005**	**0.0000**	**0.6951**

3.9 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8211					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e-003	0.0111	0.0154	3.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004	0.0000	2.1703	2.1703	1.3000e-004	0.0000	2.1735
Total	**1.8227**	**0.0111**	**0.0154**	**3.0000e-005**		**6.0000e-004**	**6.0000e-004**		**6.0000e-004**	**6.0000e-004**	**0.0000**	**2.1703**	**2.1703**	**1.3000e-004**	**0.0000**	**2.1735**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	5.9000e-004	6.4500e-003	2.0000e-005	2.5500e-003	2.0000e-005	2.5700e-003	6.8000e-004	2.0000e-005	6.9000e-004	0.0000	2.0308	2.0308	4.0000e-005	0.0000	2.0319
Total	**8.9000e-004**	**5.9000e-004**	**6.4500e-003**	**2.0000e-005**	**2.5500e-003**	**2.0000e-005**	**2.5700e-003**	**6.8000e-004**	**2.0000e-005**	**6.9000e-004**	**0.0000**	**2.0308**	**2.0308**	**4.0000e-005**	**0.0000**	**2.0319**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8211					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6000e-004	9.0100e-003	0.0156	3.0000e-005		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	2.1703	2.1703	1.3000e-004	0.0000	2.1735
Total	**1.8216**	**9.0100e-003**	**0.0156**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**2.1703**	**2.1703**	**1.3000e-004**	**0.0000**	**2.1735**

Mitigated Construction Off-Site

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

Worker	8.9000e-004	5.9000e-004	6.4500e-003	2.0000e-005	2.3600e-003	2.0000e-005	2.3700e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.0308	2.0308	4.0000e-005	0.0000	2.0319
Total	**8.9000e-004**	**5.9000e-004**	**6.4500e-003**	**2.0000e-005**	**2.3600e-003**	**2.0000e-005**	**2.3700e-003**	**6.3000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.0308**	**2.0308**	**4.0000e-005**	**0.0000**	**2.0319**

CalEEMod Operations Model

Callan and E 14th Street Infill Checklist Project Operations

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Bank (with Drive-Through)	2.52	1000sqft	0.00	2,515.00	0
Enclosed Parking with Elevator	87.26	1000sqft	0.00	87,257.00	0
Other Non-Asphalt Surfaces	5.16	1000sqft	0.12	5,156.00	0
Fast Food Restaurant w/o Drive Thru	1.55	1000sqft	0.00	1,547.00	0
Apartments Mid Rise	196.00	Dwelling Unit	1.52	170,098.00	561
Regional Shopping Center	1.60	1000sqft	0.00	1,598.00	0
Supermarket	23.21	1000sqft	0.00	23,208.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	154.28	**CH4 Intensity (lb/MWhr)**	0.014	**N2O Intensity (lb/MWhr)**	0.002

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on the 2019 EBCE Power Content Label

Land Use - based on info from applicant, assigning all lot acreage to residential

Construction Phase -

Vehicle Trips - based on data from applicant, see assumptions file

Vehicle Emission Factors - EMFAC 2017 adjustment

Woodstoves - no fireplaces

Area Coating - assumes int/ext painting of parking structure and only accounts for parking area to be striped

Energy Use - based on NORESCO reductions, see assumptions file

Water And Wastewater - assigning all water use to apartments land use, assumes all indoor water and 100% aerobic treatment.

Water Mitigation -

Fleet Mix - see adjusted fleet mix for residential in assump file

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	14434	58063
tblAreaCoating	Area_Nonresidential_Interior	43302	174188
tblAreaCoating	Area_Parking	5545	5235
tblEnergyUse	T24E	426.45	417.92
tblEnergyUse	T24E	1.21	1.08
tblEnergyUse	T24E	3.92	3.50
tblEnergyUse	T24E	2.67	2.38
tblEnergyUse	T24E	2.24	2.00
tblEnergyUse	T24E	2.72	2.43
tblEnergyUse	T24NG	6,115.43	5,809.66
tblEnergyUse	T24NG	17.85	17.67
tblEnergyUse	T24NG	39.90	39.50
tblEnergyUse	T24NG	3.90	3.86
tblEnergyUse	T24NG	24.53	24.28
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	29.40	0.00
tblFireplaces	NumberNoFireplace	7.84	0.00
tblFireplaces	NumberWood	33.32	0.00
tblFleetMix	HHD	0.05	5.0610e-003
tblFleetMix	LDA	0.56	0.68
tblFleetMix	LDT1	0.04	0.05

tblFleetMix	LDT2	0.19	0.23
tblFleetMix	LHD1	0.02	1.6840e-003
tblFleetMix	LHD2	5.1800e-003	5.6700e-004
tblFleetMix	MCY	5.4910e-003	7.1080e-003
tblFleetMix	MDV	0.11	0.02
tblFleetMix	MH	7.0400e-004	0.00
tblFleetMix	MHD	0.02	2.6880e-003
tblFleetMix	OBUS	2.2090e-003	0.00
tblFleetMix	SBUS	3.3400e-004	0.00
tblFleetMix	UBUS	2.4560e-003	0.00
tblLandUse	LandUseSquareFeet	2,520.00	2,515.00
tblLandUse	LandUseSquareFeet	87,260.00	87,257.00
tblLandUse	LandUseSquareFeet	5,160.00	5,156.00
tblLandUse	LandUseSquareFeet	1,550.00	1,547.00
tblLandUse	LandUseSquareFeet	196,000.00	170,098.00
tblLandUse	LandUseSquareFeet	1,600.00	1,598.00
tblLandUse	LandUseSquareFeet	23,210.00	23,208.00
tblLandUse	LotAcreage	0.06	0.00
tblLandUse	LotAcreage	2.00	0.00
tblLandUse	LotAcreage	0.04	0.00
tblLandUse	LotAcreage	5.16	1.52
tblLandUse	LotAcreage	0.04	0.00
tblLandUse	LotAcreage	0.53	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.014
tblProjectCharacteristics	CO2IntensityFactor	641.35	154.28
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.002
tblVehicleEF	HHD	0.62	0.02
tblVehicleEF	HHD	0.04	0.03
tblVehicleEF	HHD	0.08	0.00
tblVehicleEF	HHD	1.68	6.67
tblVehicleEF	HHD	0.78	0.34

tblVehicleEF	HHD	2.05	4.2510e-003
tblVehicleEF	HHD	4,767.28	1,103.40
tblVehicleEF	HHD	1,547.06	1,394.59
tblVehicleEF	HHD	6.46	0.05
tblVehicleEF	HHD	14.52	5.51
tblVehicleEF	HHD	2.04	2.58
tblVehicleEF	HHD	20.07	2.28
tblVehicleEF	HHD	6.5450e-003	2.4080e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	6.1300e-003	0.03
tblVehicleEF	HHD	5.2000e-005	0.00
tblVehicleEF	HHD	6.2620e-003	2.3040e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8970e-003	8.9230e-003
tblVehicleEF	HHD	5.8640e-003	0.02
tblVehicleEF	HHD	4.8000e-005	0.00
tblVehicleEF	HHD	4.8000e-005	2.0000e-006
tblVehicleEF	HHD	2.8330e-003	7.7000e-005
tblVehicleEF	HHD	0.44	0.45
tblVehicleEF	HHD	3.3000e-005	1.0000e-006
tblVehicleEF	HHD	0.09	0.02
tblVehicleEF	HHD	2.1500e-004	3.9700e-004
tblVehicleEF	HHD	0.05	1.0000e-006
tblVehicleEF	HHD	0.04	0.01
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	9.8000e-005	0.00
tblVehicleEF	HHD	4.8000e-005	2.0000e-006
tblVehicleEF	HHD	2.8330e-003	7.7000e-005
tblVehicleEF	HHD	0.51	0.52
tblVehicleEF	HHD	3.3000e-005	1.0000e-006

tblVehicleEF	HHD	0.14	0.06
tblVehicleEF	HHD	2.1500e-004	3.9700e-004
tblVehicleEF	HHD	0.06	1.0000e-006
tblVehicleEF	HHD	0.58	0.03
tblVehicleEF	HHD	0.04	0.03
tblVehicleEF	HHD	0.08	0.00
tblVehicleEF	HHD	1.22	6.58
tblVehicleEF	HHD	0.79	0.34
tblVehicleEF	HHD	1.87	3.8680e-003
tblVehicleEF	HHD	5,050.51	1,089.96
tblVehicleEF	HHD	1,547.06	1,394.59
tblVehicleEF	HHD	6.46	0.05
tblVehicleEF	HHD	14.99	5.25
tblVehicleEF	HHD	1.96	2.48
tblVehicleEF	HHD	20.06	2.28
tblVehicleEF	HHD	5.5180e-003	2.1170e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	6.1300e-003	0.03
tblVehicleEF	HHD	5.2000e-005	0.00
tblVehicleEF	HHD	5.2800e-003	2.0260e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8970e-003	8.9230e-003
tblVehicleEF	HHD	5.8640e-003	0.02
tblVehicleEF	HHD	4.8000e-005	0.00
tblVehicleEF	HHD	1.1600e-004	4.0000e-006
tblVehicleEF	HHD	3.0450e-003	8.4000e-005
tblVehicleEF	HHD	0.41	0.48
tblVehicleEF	HHD	7.1000e-005	2.0000e-006
tblVehicleEF	HHD	0.09	0.02
tblVehicleEF	HHD	2.0800e-004	3.8700e-004

tblVehicleEF	HHD	0.05	1.0000e-006
tblVehicleEF	HHD	0.05	0.01
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	9.5000e-005	0.00
tblVehicleEF	HHD	1.1600e-004	4.0000e-006
tblVehicleEF	HHD	3.0450e-003	8.4000e-005
tblVehicleEF	HHD	0.48	0.55
tblVehicleEF	HHD	7.1000e-005	2.0000e-006
tblVehicleEF	HHD	0.14	0.06
tblVehicleEF	HHD	2.0800e-004	3.8700e-004
tblVehicleEF	HHD	0.05	1.0000e-006
tblVehicleEF	HHD	0.67	0.02
tblVehicleEF	HHD	0.04	1.1080e-003
tblVehicleEF	HHD	0.09	0.00
tblVehicleEF	HHD	2.32	6.73
tblVehicleEF	HHD	0.78	0.25
tblVehicleEF	HHD	2.21	4.5730e-003
tblVehicleEF	HHD	4,376.16	1,111.96
tblVehicleEF	HHD	1,547.06	1,368.03
tblVehicleEF	HHD	6.46	0.05
tblVehicleEF	HHD	13.87	5.82
tblVehicleEF	HHD	2.07	2.61
tblVehicleEF	HHD	20.08	2.28
tblVehicleEF	HHD	7.9630e-003	2.7500e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	6.1300e-003	0.03
tblVehicleEF	HHD	5.2000e-005	0.00
tblVehicleEF	HHD	7.6190e-003	2.6310e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8970e-003	8.8450e-003

tblVehicleEF	HHD	5.8640e-003	0.02
tblVehicleEF	HHD	4.8000e-005	0.00
tblVehicleEF	HHD	2.3000e-005	1.0000e-006
tblVehicleEF	HHD	2.9280e-003	8.2000e-005
tblVehicleEF	HHD	0.47	0.41
tblVehicleEF	HHD	1.6000e-005	0.00
tblVehicleEF	HHD	0.09	0.02
tblVehicleEF	HHD	2.4000e-004	4.4100e-004
tblVehicleEF	HHD	0.05	1.0000e-006
tblVehicleEF	HHD	0.04	0.01
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	1.0100e-004	0.00
tblVehicleEF	HHD	2.3000e-005	1.0000e-006
tblVehicleEF	HHD	2.9280e-003	8.2000e-005
tblVehicleEF	HHD	0.55	0.47
tblVehicleEF	HHD	1.6000e-005	0.00
tblVehicleEF	HHD	0.14	0.03
tblVehicleEF	HHD	2.4000e-004	4.4100e-004
tblVehicleEF	HHD	0.06	1.0000e-006
tblVehicleEF	LDA	3.8970e-003	2.1170e-003
tblVehicleEF	LDA	5.6840e-003	0.05
tblVehicleEF	LDA	0.53	0.57
tblVehicleEF	LDA	1.25	2.24
tblVehicleEF	LDA	244.94	250.60
tblVehicleEF	LDA	56.21	53.04
tblVehicleEF	LDA	0.05	0.04
tblVehicleEF	LDA	0.07	0.19
tblVehicleEF	LDA	1.7490e-003	1.4460e-003
tblVehicleEF	LDA	2.2460e-003	1.7640e-003
tblVehicleEF	LDA	1.6120e-003	1.3330e-003
tblVehicleEF	LDA	2.0650e-003	1.6220e-003

tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.11	0.10
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	9.8450e-003	8.2190e-003
tblVehicleEF	LDA	0.04	0.22
tblVehicleEF	LDA	0.08	0.23
tblVehicleEF	LDA	2.4520e-003	2.4480e-003
tblVehicleEF	LDA	5.8300e-004	5.1800e-004
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.11	0.10
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.04	0.22
tblVehicleEF	LDA	0.08	0.25
tblVehicleEF	LDA	4.3500e-003	2.4010e-003
tblVehicleEF	LDA	4.6290e-003	0.04
tblVehicleEF	LDA	0.63	0.67
tblVehicleEF	LDA	0.96	1.72
tblVehicleEF	LDA	264.78	270.53
tblVehicleEF	LDA	56.21	52.05
tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.06	0.16
tblVehicleEF	LDA	1.7490e-003	1.4460e-003
tblVehicleEF	LDA	2.2460e-003	1.7640e-003
tblVehicleEF	LDA	1.6120e-003	1.3330e-003
tblVehicleEF	LDA	2.0650e-003	1.6220e-003
tblVehicleEF	LDA	0.08	0.09
tblVehicleEF	LDA	0.12	0.11
tblVehicleEF	LDA	0.06	0.08
tblVehicleEF	LDA	0.01	9.1560e-003
tblVehicleEF	LDA	0.03	0.20

tblVehicleEF	LDA	0.06	0.19
tblVehicleEF	LDA	2.6520e-003	2.6430e-003
tblVehicleEF	LDA	5.7800e-004	5.0900e-004
tblVehicleEF	LDA	0.08	0.09
tblVehicleEF	LDA	0.12	0.11
tblVehicleEF	LDA	0.06	0.08
tblVehicleEF	LDA	0.02	0.01
tblVehicleEF	LDA	0.03	0.20
tblVehicleEF	LDA	0.07	0.20
tblVehicleEF	LDA	3.8110e-003	2.0450e-003
tblVehicleEF	LDA	6.4210e-003	0.06
tblVehicleEF	LDA	0.53	0.56
tblVehicleEF	LDA	1.46	2.63
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tblVehicleEF	LDA	56.21	53.75
tblVehicleEF	LDA	0.05	0.04
tblVehicleEF	LDA	0.08	0.20
tblVehicleEF	LDA	1.7490e-003	1.4460e-003
tblVehicleEF	LDA	2.2460e-003	1.7640e-003
tblVehicleEF	LDA	1.6120e-003	1.3330e-003
tblVehicleEF	LDA	2.0650e-003	1.6220e-003
tblVehicleEF	LDA	0.01	0.02
tblVehicleEF	LDA	0.11	0.10
tblVehicleEF	LDA	0.01	0.02
tblVehicleEF	LDA	9.6340e-003	8.0360e-003
tblVehicleEF	LDA	0.04	0.26
tblVehicleEF	LDA	0.09	0.26
tblVehicleEF	LDA	2.4320e-003	2.4290e-003
tblVehicleEF	LDA	5.8700e-004	5.2500e-004
tblVehicleEF	LDA	0.01	0.02
tblVehicleEF	LDA	0.11	0.10

tblVehicleEF	LDA	0.01	0.02
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.04	0.26
tblVehicleEF	LDA	0.09	0.28
tblVehicleEF	LDT1	8.0930e-003	4.2580e-003
tblVehicleEF	LDT1	0.01	0.07
tblVehicleEF	LDT1	0.99	0.93
tblVehicleEF	LDT1	2.67	2.45
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tblVehicleEF	LDT1	69.06	64.04
tblVehicleEF	LDT1	0.10	0.08
tblVehicleEF	LDT1	0.15	0.25
tblVehicleEF	LDT1	2.2930e-003	1.8240e-003
tblVehicleEF	LDT1	3.0800e-003	2.3360e-003
tblVehicleEF	LDT1	2.1120e-003	1.6790e-003
tblVehicleEF	LDT1	2.8320e-003	2.1480e-003
tblVehicleEF	LDT1	0.08	0.08
tblVehicleEF	LDT1	0.24	0.18
tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.15	0.65
tblVehicleEF	LDT1	0.18	0.34
tblVehicleEF	LDT1	3.0180e-003	2.9240e-003
tblVehicleEF	LDT1	7.3700e-004	6.2600e-004
tblVehicleEF	LDT1	0.08	0.08
tblVehicleEF	LDT1	0.24	0.18
tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.15	0.65
tblVehicleEF	LDT1	0.19	0.37
tblVehicleEF	LDT1	8.9420e-003	4.7810e-003

tblVehicleEF	LDT1	0.01	0.06
tblVehicleEF	LDT1	1.15	1.08
tblVehicleEF	LDT1	2.04	1.87
tblVehicleEF	LDT1	324.25	319.79
tblVehicleEF	LDT1	69.06	62.89
tblVehicleEF	LDT1	0.09	0.07
tblVehicleEF	LDT1	0.13	0.22
tblVehicleEF	LDT1	2.2930e-003	1.8240e-003
tblVehicleEF	LDT1	3.0800e-003	2.3360e-003
tblVehicleEF	LDT1	2.1120e-003	1.6790e-003
tblVehicleEF	LDT1	2.8320e-003	2.1480e-003
tblVehicleEF	LDT1	0.21	0.21
tblVehicleEF	LDT1	0.27	0.20
tblVehicleEF	LDT1	0.16	0.16
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.14	0.60
tblVehicleEF	LDT1	0.14	0.28
tblVehicleEF	LDT1	3.2560e-003	3.1250e-003
tblVehicleEF	LDT1	7.2600e-004	6.1500e-004
tblVehicleEF	LDT1	0.21	0.21
tblVehicleEF	LDT1	0.27	0.20
tblVehicleEF	LDT1	0.16	0.16
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.14	0.60
tblVehicleEF	LDT1	0.16	0.30
tblVehicleEF	LDT1	7.9620e-003	4.1270e-003
tblVehicleEF	LDT1	0.01	0.08
tblVehicleEF	LDT1	0.99	0.92
tblVehicleEF	LDT1	3.13	2.87
tblVehicleEF	LDT1	298.39	297.20
tblVehicleEF	LDT1	69.06	64.87

tblVehicleEF	LDT1	0.11	0.09
tblVehicleEF	LDT1	0.16	0.27
tblVehicleEF	LDT1	2.2930e-003	1.8240e-003
tblVehicleEF	LDT1	3.0800e-003	2.3360e-003
tblVehicleEF	LDT1	2.1120e-003	1.6790e-003
tblVehicleEF	LDT1	2.8320e-003	2.1480e-003
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.26	0.19
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.18	0.80
tblVehicleEF	LDT1	0.20	0.39
tblVehicleEF	LDT1	2.9950e-003	2.9040e-003
tblVehicleEF	LDT1	7.4500e-004	6.3400e-004
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.26	0.19
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.18	0.80
tblVehicleEF	LDT1	0.22	0.42
tblVehicleEF	LDT2	5.0510e-003	3.2180e-003
tblVehicleEF	LDT2	6.9140e-003	0.07
tblVehicleEF	LDT2	0.66	0.75
tblVehicleEF	LDT2	1.52	2.87
tblVehicleEF	LDT2	339.26	321.37
tblVehicleEF	LDT2	77.68	69.31
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.11	0.28
tblVehicleEF	LDT2	1.7210e-003	1.4410e-003
tblVehicleEF	LDT2	2.3050e-003	1.7670e-003
tblVehicleEF	LDT2	1.5830e-003	1.3260e-003

tblVehicleEF	LDT2	2.1190e-003	1.6250e-003
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.11	0.13
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.44
tblVehicleEF	LDT2	0.09	0.32
tblVehicleEF	LDT2	3.3970e-003	3.1400e-003
tblVehicleEF	LDT2	8.0200e-004	6.7700e-004
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.11	0.13
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.06	0.44
tblVehicleEF	LDT2	0.10	0.35
tblVehicleEF	LDT2	5.6330e-003	3.6370e-003
tblVehicleEF	LDT2	5.6340e-003	0.06
tblVehicleEF	LDT2	0.78	0.89
tblVehicleEF	LDT2	1.17	2.19
tblVehicleEF	LDT2	366.22	341.41
tblVehicleEF	LDT2	77.68	68.02
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.10	0.25
tblVehicleEF	LDT2	1.7210e-003	1.4410e-003
tblVehicleEF	LDT2	2.3050e-003	1.7670e-003
tblVehicleEF	LDT2	1.5830e-003	1.3260e-003
tblVehicleEF	LDT2	2.1190e-003	1.6250e-003
tblVehicleEF	LDT2	0.09	0.14
tblVehicleEF	LDT2	0.12	0.14
tblVehicleEF	LDT2	0.08	0.13
tblVehicleEF	LDT2	0.01	0.01

tblVehicleEF	LDT2	0.06	0.40
tblVehicleEF	LDT2	0.08	0.26
tblVehicleEF	LDT2	3.6680e-003	3.3360e-003
tblVehicleEF	LDT2	7.9600e-004	6.6500e-004
tblVehicleEF	LDT2	0.09	0.14
tblVehicleEF	LDT2	0.12	0.14
tblVehicleEF	LDT2	0.08	0.13
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.06	0.40
tblVehicleEF	LDT2	0.08	0.29
tblVehicleEF	LDT2	4.9370e-003	3.1100e-003
tblVehicleEF	LDT2	7.8080e-003	0.08
tblVehicleEF	LDT2	0.65	0.75
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tblVehicleEF	LDT2	0.08	0.07
tblVehicleEF	LDT2	0.12	0.31
tblVehicleEF	LDT2	1.7210e-003	1.4410e-003
tblVehicleEF	LDT2	2.3050e-003	1.7670e-003
tblVehicleEF	LDT2	1.5830e-003	1.3260e-003
tblVehicleEF	LDT2	2.1190e-003	1.6250e-003
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.11	0.13
tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.08	0.53
tblVehicleEF	LDT2	0.11	0.36
tblVehicleEF	LDT2	3.3700e-003	3.1210e-003
tblVehicleEF	LDT2	8.0700e-004	6.8600e-004
tblVehicleEF	LDT2	0.02	0.02

tblVehicleEF	LDT2	0.11	0.13
tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.08	0.53
tblVehicleEF	LDT2	0.12	0.40
tblVehicleEF	LHD1	5.4470e-003	5.3750e-003
tblVehicleEF	LHD1	0.02	8.9070e-003
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	0.15	0.19
tblVehicleEF	LHD1	1.08	0.81
tblVehicleEF	LHD1	2.63	1.12
tblVehicleEF	LHD1	9.01	8.94
tblVehicleEF	LHD1	694.94	806.45
tblVehicleEF	LHD1	32.75	12.21
tblVehicleEF	LHD1	0.07	0.06
tblVehicleEF	LHD1	1.26	0.76
tblVehicleEF	LHD1	1.04	0.34
tblVehicleEF	LHD1	8.7000e-004	7.9200e-004
tblVehicleEF	LHD1	0.01	9.6770e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	9.3800e-004	2.6000e-004
tblVehicleEF	LHD1	8.3200e-004	7.5800e-004
tblVehicleEF	LHD1	2.5100e-003	2.4190e-003
tblVehicleEF	LHD1	0.02	9.8820e-003
tblVehicleEF	LHD1	8.6300e-004	2.3900e-004
tblVehicleEF	LHD1	2.3470e-003	1.8480e-003
tblVehicleEF	LHD1	0.10	0.08
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.3470e-003	1.0560e-003
tblVehicleEF	LHD1	0.12	0.09
tblVehicleEF	LHD1	0.30	0.55

tblVehicleEF	LHD1	0.27	0.08
tblVehicleEF	LHD1	9.0000e-005	8.7000e-005
tblVehicleEF	LHD1	6.8250e-003	7.8810e-003
tblVehicleEF	LHD1	3.7700e-004	1.2100e-004
tblVehicleEF	LHD1	2.3470e-003	1.8480e-003
tblVehicleEF	LHD1	0.10	0.08
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	1.3470e-003	1.0560e-003
tblVehicleEF	LHD1	0.15	0.12
tblVehicleEF	LHD1	0.30	0.55
tblVehicleEF	LHD1	0.29	0.09
tblVehicleEF	LHD1	5.4470e-003	5.3920e-003
tblVehicleEF	LHD1	0.02	9.1610e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.15	0.19
tblVehicleEF	LHD1	1.10	0.83
tblVehicleEF	LHD1	2.41	1.03
tblVehicleEF	LHD1	9.01	8.94
tblVehicleEF	LHD1	694.94	806.49
tblVehicleEF	LHD1	32.75	12.05
tblVehicleEF	LHD1	0.07	0.06
tblVehicleEF	LHD1	1.20	0.72
tblVehicleEF	LHD1	0.96	0.31
tblVehicleEF	LHD1	8.7000e-004	7.9200e-004
tblVehicleEF	LHD1	0.01	9.6770e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	9.3800e-004	2.6000e-004
tblVehicleEF	LHD1	8.3200e-004	7.5800e-004
tblVehicleEF	LHD1	2.5100e-003	2.4190e-003
tblVehicleEF	LHD1	0.02	9.8820e-003
tblVehicleEF	LHD1	8.6300e-004	2.3900e-004

tblVehicleEF	LHD1	5.7580e-003	4.5640e-003
tblVehicleEF	LHD1	0.12	0.09
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	2.8690e-003	2.2700e-003
tblVehicleEF	LHD1	0.13	0.10
tblVehicleEF	LHD1	0.29	0.53
tblVehicleEF	LHD1	0.25	0.07
tblVehicleEF	LHD1	9.0000e-005	8.7000e-005
tblVehicleEF	LHD1	6.8250e-003	7.8810e-003
tblVehicleEF	LHD1	3.7300e-004	1.1900e-004
tblVehicleEF	LHD1	5.7580e-003	4.5640e-003
tblVehicleEF	LHD1	0.12	0.09
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	2.8690e-003	2.2700e-003
tblVehicleEF	LHD1	0.16	0.12
tblVehicleEF	LHD1	0.29	0.53
tblVehicleEF	LHD1	0.27	0.08
tblVehicleEF	LHD1	5.4470e-003	5.3620e-003
tblVehicleEF	LHD1	0.02	8.7280e-003
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	0.15	0.19
tblVehicleEF	LHD1	1.06	0.79
tblVehicleEF	LHD1	2.83	1.20
tblVehicleEF	LHD1	9.01	8.94
tblVehicleEF	LHD1	694.94	806.42
tblVehicleEF	LHD1	32.75	12.35
tblVehicleEF	LHD1	0.07	0.06
tblVehicleEF	LHD1	1.29	0.77
tblVehicleEF	LHD1	1.11	0.36
tblVehicleEF	LHD1	8.7000e-004	7.9200e-004
tblVehicleEF	LHD1	0.01	9.6770e-003

tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	9.3800e-004	2.6000e-004
tblVehicleEF	LHD1	8.3200e-004	7.5800e-004
tblVehicleEF	LHD1	2.5100e-003	2.4190e-003
tblVehicleEF	LHD1	0.02	9.8820e-003
tblVehicleEF	LHD1	8.6300e-004	2.3900e-004
tblVehicleEF	LHD1	9.7500e-004	7.5700e-004
tblVehicleEF	LHD1	0.11	0.09
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	6.5800e-004	5.0900e-004
tblVehicleEF	LHD1	0.12	0.09
tblVehicleEF	LHD1	0.34	0.61
tblVehicleEF	LHD1	0.28	0.08
tblVehicleEF	LHD1	9.0000e-005	8.7000e-005
tblVehicleEF	LHD1	6.8240e-003	7.8800e-003
tblVehicleEF	LHD1	3.8100e-004	1.2200e-004
tblVehicleEF	LHD1	9.7500e-004	7.5700e-004
tblVehicleEF	LHD1	0.11	0.09
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	6.5800e-004	5.0900e-004
tblVehicleEF	LHD1	0.15	0.11
tblVehicleEF	LHD1	0.34	0.61
tblVehicleEF	LHD1	0.31	0.09
tblVehicleEF	LHD2	3.6270e-003	3.6920e-003
tblVehicleEF	LHD2	8.0300e-003	7.1740e-003
tblVehicleEF	LHD2	7.5680e-003	9.9610e-003
tblVehicleEF	LHD2	0.13	0.15
tblVehicleEF	LHD2	0.58	0.63
tblVehicleEF	LHD2	1.26	0.72
tblVehicleEF	LHD2	13.84	13.61
tblVehicleEF	LHD2	714.57	797.43

tblVehicleEF	LHD2	25.84	9.13
tblVehicleEF	LHD2	0.10	0.09
tblVehicleEF	LHD2	0.78	0.86
tblVehicleEF	LHD2	0.51	0.22
tblVehicleEF	LHD2	1.2000e-003	1.2930e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	4.1700e-004	1.4400e-004
tblVehicleEF	LHD2	1.1480e-003	1.2380e-003
tblVehicleEF	LHD2	2.6730e-003	2.6420e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.8400e-004	1.3200e-004
tblVehicleEF	LHD2	8.1400e-004	1.0880e-003
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	4.9300e-004	6.3200e-004
tblVehicleEF	LHD2	0.11	0.11
tblVehicleEF	LHD2	0.07	0.32
tblVehicleEF	LHD2	0.10	0.05
tblVehicleEF	LHD2	1.3500e-004	1.3000e-004
tblVehicleEF	LHD2	6.9560e-003	7.7200e-003
tblVehicleEF	LHD2	2.8100e-004	9.0000e-005
tblVehicleEF	LHD2	8.1400e-004	1.0880e-003
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.9300e-004	6.3200e-004
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.07	0.32
tblVehicleEF	LHD2	0.11	0.05
tblVehicleEF	LHD2	3.6270e-003	3.7030e-003
tblVehicleEF	LHD2	8.1720e-003	7.2800e-003

tblVehicleEF	LHD2	7.1120e-003	9.3460e-003
tblVehicleEF	LHD2	0.13	0.15
tblVehicleEF	LHD2	0.59	0.64
tblVehicleEF	LHD2	1.16	0.67
tblVehicleEF	LHD2	13.84	13.61
tblVehicleEF	LHD2	714.57	797.45
tblVehicleEF	LHD2	25.84	9.03
tblVehicleEF	LHD2	0.10	0.09
tblVehicleEF	LHD2	0.75	0.82
tblVehicleEF	LHD2	0.48	0.21
tblVehicleEF	LHD2	1.2000e-003	1.2930e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	4.1700e-004	1.4400e-004
tblVehicleEF	LHD2	1.1480e-003	1.2380e-003
tblVehicleEF	LHD2	2.6730e-003	2.6420e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.8400e-004	1.3200e-004
tblVehicleEF	LHD2	1.9850e-003	2.6790e-003
tblVehicleEF	LHD2	0.04	0.05
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	1.0480e-003	1.3570e-003
tblVehicleEF	LHD2	0.11	0.11
tblVehicleEF	LHD2	0.07	0.30
tblVehicleEF	LHD2	0.10	0.05
tblVehicleEF	LHD2	1.3500e-004	1.3000e-004
tblVehicleEF	LHD2	6.9560e-003	7.7200e-003
tblVehicleEF	LHD2	2.7900e-004	8.9000e-005
tblVehicleEF	LHD2	1.9850e-003	2.6790e-003
tblVehicleEF	LHD2	0.04	0.05
tblVehicleEF	LHD2	0.02	0.02

tblVehicleEF	LHD2	1.0480e-003	1.3570e-003
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.07	0.30
tblVehicleEF	LHD2	0.11	0.05
tblVehicleEF	LHD2	3.6270e-003	3.6830e-003
tblVehicleEF	LHD2	7.9290e-003	7.0980e-003
tblVehicleEF	LHD2	7.9280e-003	0.01
tblVehicleEF	LHD2	0.13	0.15
tblVehicleEF	LHD2	0.58	0.63
tblVehicleEF	LHD2	1.35	0.77
tblVehicleEF	LHD2	13.84	13.61
tblVehicleEF	LHD2	714.57	797.42
tblVehicleEF	LHD2	25.84	9.22
tblVehicleEF	LHD2	0.10	0.09
tblVehicleEF	LHD2	0.80	0.88
tblVehicleEF	LHD2	0.54	0.24
tblVehicleEF	LHD2	1.2000e-003	1.2930e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	4.1700e-004	1.4400e-004
tblVehicleEF	LHD2	1.1480e-003	1.2380e-003
tblVehicleEF	LHD2	2.6730e-003	2.6420e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.8400e-004	1.3200e-004
tblVehicleEF	LHD2	3.5500e-004	4.6000e-004
tblVehicleEF	LHD2	0.04	0.05
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	2.4500e-004	3.1200e-004
tblVehicleEF	LHD2	0.11	0.11
tblVehicleEF	LHD2	0.08	0.35
tblVehicleEF	LHD2	0.11	0.05

tblVehicleEF	LHD2	1.3500e-004	1.3000e-004
tblVehicleEF	LHD2	6.9560e-003	7.7200e-003
tblVehicleEF	LHD2	2.8300e-004	9.1000e-005
tblVehicleEF	LHD2	3.5500e-004	4.6000e-004
tblVehicleEF	LHD2	0.04	0.05
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	2.4500e-004	3.1200e-004
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.08	0.35
tblVehicleEF	LHD2	0.12	0.06
tblVehicleEF	MCY	0.46	0.34
tblVehicleEF	MCY	0.17	0.26
tblVehicleEF	MCY	20.03	20.15
tblVehicleEF	MCY	10.24	9.10
tblVehicleEF	MCY	174.71	215.41
tblVehicleEF	MCY	45.85	61.83
tblVehicleEF	MCY	1.17	1.17
tblVehicleEF	MCY	0.32	0.27
tblVehicleEF	MCY	2.1220e-003	2.0690e-003
tblVehicleEF	MCY	3.9700e-003	3.1980e-003
tblVehicleEF	MCY	1.9850e-003	1.9350e-003
tblVehicleEF	MCY	3.7430e-003	3.0120e-003
tblVehicleEF	MCY	0.81	0.80
tblVehicleEF	MCY	0.74	0.73
tblVehicleEF	MCY	0.50	0.50
tblVehicleEF	MCY	2.33	2.34
tblVehicleEF	MCY	0.60	2.18
tblVehicleEF	MCY	2.26	1.99
tblVehicleEF	MCY	2.1430e-003	2.1320e-003
tblVehicleEF	MCY	6.9300e-004	6.1200e-004
tblVehicleEF	MCY	0.81	0.80

tblVehicleEF	MCY	0.74	0.73
tblVehicleEF	MCY	0.50	0.50
tblVehicleEF	MCY	2.88	2.89
tblVehicleEF	MCY	0.60	2.18
tblVehicleEF	MCY	2.46	2.17
tblVehicleEF	MCY	0.45	0.33
tblVehicleEF	MCY	0.14	0.21
tblVehicleEF	MCY	18.97	19.08
tblVehicleEF	MCY	8.85	7.79
tblVehicleEF	MCY	174.71	213.35
tblVehicleEF	MCY	45.85	58.50
tblVehicleEF	MCY	1.02	1.02
tblVehicleEF	MCY	0.29	0.25
tblVehicleEF	MCY	2.1220e-003	2.0690e-003
tblVehicleEF	MCY	3.9700e-003	3.1980e-003
tblVehicleEF	MCY	1.9850e-003	1.9350e-003
tblVehicleEF	MCY	3.7430e-003	3.0120e-003
tblVehicleEF	MCY	2.35	2.34
tblVehicleEF	MCY	0.98	0.97
tblVehicleEF	MCY	1.45	1.43
tblVehicleEF	MCY	2.23	2.24
tblVehicleEF	MCY	0.56	2.03
tblVehicleEF	MCY	1.85	1.62
tblVehicleEF	MCY	2.1230e-003	2.1110e-003
tblVehicleEF	MCY	6.5700e-004	5.7900e-004
tblVehicleEF	MCY	2.35	2.34
tblVehicleEF	MCY	0.98	0.97
tblVehicleEF	MCY	1.45	1.43
tblVehicleEF	MCY	2.76	2.77
tblVehicleEF	MCY	0.56	2.03
tblVehicleEF	MCY	2.01	1.76

tblVehicleEF	MCY	0.48	0.35
tblVehicleEF	MCY	0.19	0.30
tblVehicleEF	MCY	21.70	21.83
tblVehicleEF	MCY	11.67	10.43
tblVehicleEF	MCY	174.71	218.44
tblVehicleEF	MCY	45.85	65.04
tblVehicleEF	MCY	1.25	1.25
tblVehicleEF	MCY	0.34	0.29
tblVehicleEF	MCY	2.1220e-003	2.0690e-003
tblVehicleEF	MCY	3.9700e-003	3.1980e-003
tblVehicleEF	MCY	1.9850e-003	1.9350e-003
tblVehicleEF	MCY	3.7430e-003	3.0120e-003
tblVehicleEF	MCY	0.21	0.21
tblVehicleEF	MCY	0.89	0.86
tblVehicleEF	MCY	0.17	0.18
tblVehicleEF	MCY	2.43	2.44
tblVehicleEF	MCY	0.71	2.58
tblVehicleEF	MCY	2.62	2.33
tblVehicleEF	MCY	2.1730e-003	2.1620e-003
tblVehicleEF	MCY	7.2700e-004	6.4400e-004
tblVehicleEF	MCY	0.21	0.21
tblVehicleEF	MCY	0.89	0.86
tblVehicleEF	MCY	0.17	0.18
tblVehicleEF	MCY	3.00	3.01
tblVehicleEF	MCY	0.71	2.58
tblVehicleEF	MCY	2.85	2.53
tblVehicleEF	MDV	9.7550e-003	3.8520e-003
tblVehicleEF	MDV	0.02	0.08
tblVehicleEF	MDV	1.05	0.83
tblVehicleEF	MDV	2.91	3.26
tblVehicleEF	MDV	457.07	386.66

tblVehicleEF	MDV	102.80	83.08
tblVehicleEF	MDV	0.13	0.08
tblVehicleEF	MDV	0.25	0.34
tblVehicleEF	MDV	1.8870e-003	1.5670e-003
tblVehicleEF	MDV	2.5190e-003	1.9600e-003
tblVehicleEF	MDV	1.7400e-003	1.4460e-003
tblVehicleEF	MDV	2.3160e-003	1.8020e-003
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.17	0.14
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.10	0.47
tblVehicleEF	MDV	0.22	0.41
tblVehicleEF	MDV	4.5760e-003	3.7760e-003
tblVehicleEF	MDV	1.0790e-003	8.1200e-004
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.17	0.14
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.04	0.02
tblVehicleEF	MDV	0.10	0.47
tblVehicleEF	MDV	0.24	0.45
tblVehicleEF	MDV	0.01	4.3470e-003
tblVehicleEF	MDV	0.01	0.07
tblVehicleEF	MDV	1.23	0.97
tblVehicleEF	MDV	2.23	2.48
tblVehicleEF	MDV	492.38	406.93
tblVehicleEF	MDV	102.80	81.57
tblVehicleEF	MDV	0.12	0.07
tblVehicleEF	MDV	0.22	0.30
tblVehicleEF	MDV	1.8870e-003	1.5670e-003
tblVehicleEF	MDV	2.5190e-003	1.9600e-003

tblVehicleEF	MDV	1.7400e-003	1.4460e-003
tblVehicleEF	MDV	2.3160e-003	1.8020e-003
tblVehicleEF	MDV	0.14	0.16
tblVehicleEF	MDV	0.19	0.16
tblVehicleEF	MDV	0.13	0.15
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.09	0.43
tblVehicleEF	MDV	0.18	0.33
tblVehicleEF	MDV	4.9310e-003	3.9740e-003
tblVehicleEF	MDV	1.0670e-003	7.9700e-004
tblVehicleEF	MDV	0.14	0.16
tblVehicleEF	MDV	0.19	0.16
tblVehicleEF	MDV	0.13	0.15
tblVehicleEF	MDV	0.04	0.03
tblVehicleEF	MDV	0.09	0.43
tblVehicleEF	MDV	0.20	0.36
tblVehicleEF	MDV	9.5770e-003	3.7330e-003
tblVehicleEF	MDV	0.02	0.09
tblVehicleEF	MDV	1.04	0.82
tblVehicleEF	MDV	3.40	3.83
tblVehicleEF	MDV	453.54	384.64
tblVehicleEF	MDV	102.80	84.17
tblVehicleEF	MDV	0.15	0.09
tblVehicleEF	MDV	0.28	0.37
tblVehicleEF	MDV	1.8870e-003	1.5670e-003
tblVehicleEF	MDV	2.5190e-003	1.9600e-003
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tblVehicleEF	MDV	2.3160e-003	1.8020e-003
tblVehicleEF	MDV	0.02	0.03
tblVehicleEF	MDV	0.18	0.15
tblVehicleEF	MDV	0.03	0.03

tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.12	0.56
tblVehicleEF	MDV	0.25	0.46
tblVehicleEF	MDV	4.5400e-003	3.7560e-003
tblVehicleEF	MDV	1.0880e-003	8.2300e-004
tblVehicleEF	MDV	0.02	0.03
tblVehicleEF	MDV	0.18	0.15
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.12	0.57
tblVehicleEF	MDV	0.27	0.50
tblVehicleEF	MH	0.03	4.6780e-003
tblVehicleEF	MH	0.03	0.00
tblVehicleEF	MH	2.15	0.35
tblVehicleEF	MH	5.90	0.00
tblVehicleEF	MH	1,214.25	1,001.70
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tblVehicleEF	MH	1.30	3.86
tblVehicleEF	MH	0.86	0.00
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tblVehicleEF	MH	0.02	0.08
tblVehicleEF	MH	1.1590e-003	0.00
tblVehicleEF	MH	3.2120e-003	4.0000e-003
tblVehicleEF	MH	0.02	0.08
tblVehicleEF	MH	1.0660e-003	0.00
tblVehicleEF	MH	0.75	0.00
tblVehicleEF	MH	0.07	0.00
tblVehicleEF	MH	0.29	0.00
tblVehicleEF	MH	0.10	0.10
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	0.34	0.00

tblVehicleEF	MH	0.01	9.4700e-003
tblVehicleEF	MH	6.9800e-004	0.00
tblVehicleEF	MH	0.75	0.00
tblVehicleEF	MH	0.07	0.00
tblVehicleEF	MH	0.29	0.00
tblVehicleEF	MH	0.13	0.11
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	0.37	0.00
tblVehicleEF	MH	0.03	4.6780e-003
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	2.25	0.35
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tblVehicleEF	MH	59.49	0.00
tblVehicleEF	MH	1.21	3.71
tblVehicleEF	MH	0.79	0.00
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	0.02	0.08
tblVehicleEF	MH	1.1590e-003	0.00
tblVehicleEF	MH	3.2120e-003	4.0000e-003
tblVehicleEF	MH	0.02	0.08
tblVehicleEF	MH	1.0660e-003	0.00
tblVehicleEF	MH	1.86	0.00
tblVehicleEF	MH	0.08	0.00
tblVehicleEF	MH	0.62	0.00
tblVehicleEF	MH	0.10	0.10
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	0.31	0.00
tblVehicleEF	MH	0.01	9.4700e-003
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tblVehicleEF	MH	1.86	0.00

tblVehicleEF	MH	0.08	0.00
tblVehicleEF	MH	0.62	0.00
tblVehicleEF	MH	0.14	0.11
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	0.34	0.00
tblVehicleEF	MH	0.03	4.6780e-003
tblVehicleEF	MH	0.03	0.00
tblVehicleEF	MH	2.08	0.35
tblVehicleEF	MH	6.40	0.00
tblVehicleEF	MH	1,214.25	1,001.70
tblVehicleEF	MH	59.49	0.00
tblVehicleEF	MH	1.34	3.92
tblVehicleEF	MH	0.91	0.00
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	0.02	0.08
tblVehicleEF	MH	1.1590e-003	0.00
tblVehicleEF	MH	3.2120e-003	4.0000e-003
tblVehicleEF	MH	0.02	0.08
tblVehicleEF	MH	1.0660e-003	0.00
tblVehicleEF	MH	0.29	0.00
tblVehicleEF	MH	0.09	0.00
tblVehicleEF	MH	0.14	0.00
tblVehicleEF	MH	0.09	0.10
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	0.36	0.00
tblVehicleEF	MH	0.01	9.4700e-003
tblVehicleEF	MH	7.0600e-004	0.00
tblVehicleEF	MH	0.29	0.00
tblVehicleEF	MH	0.09	0.00
tblVehicleEF	MH	0.14	0.00
tblVehicleEF	MH	0.13	0.11

tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	0.39	0.00
tblVehicleEF	MHD	0.02	2.7380e-003
tblVehicleEF	MHD	3.7500e-003	1.5030e-003
tblVehicleEF	MHD	0.05	7.1960e-003
tblVehicleEF	MHD	0.29	0.36
tblVehicleEF	MHD	0.32	0.22
tblVehicleEF	MHD	4.66	0.85
tblVehicleEF	MHD	166.31	73.92
tblVehicleEF	MHD	1,184.93	1,059.43
tblVehicleEF	MHD	46.12	7.10
tblVehicleEF	MHD	0.46	0.43
tblVehicleEF	MHD	1.12	1.43
tblVehicleEF	MHD	12.97	1.81
tblVehicleEF	MHD	1.2900e-004	3.5500e-004
tblVehicleEF	MHD	3.0820e-003	6.8020e-003
tblVehicleEF	MHD	6.6500e-004	8.1000e-005
tblVehicleEF	MHD	1.2300e-004	3.4000e-004
tblVehicleEF	MHD	2.9450e-003	6.5030e-003
tblVehicleEF	MHD	6.1100e-004	7.5000e-005
tblVehicleEF	MHD	6.8000e-004	2.7800e-004
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	3.9700e-004	1.6300e-004
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.01	0.09
tblVehicleEF	MHD	0.28	0.04
tblVehicleEF	MHD	1.5960e-003	7.0100e-004
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	5.4300e-004	7.0000e-005
tblVehicleEF	MHD	6.8000e-004	2.7800e-004

tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	3.9700e-004	1.6300e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.01	0.09
tblVehicleEF	MHD	0.31	0.04
tblVehicleEF	MHD	0.01	2.5890e-003
tblVehicleEF	MHD	3.8260e-003	1.5450e-003
tblVehicleEF	MHD	0.05	6.7290e-003
tblVehicleEF	MHD	0.20	0.31
tblVehicleEF	MHD	0.32	0.22
tblVehicleEF	MHD	4.24	0.77
tblVehicleEF	MHD	176.30	73.80
tblVehicleEF	MHD	1,184.93	1,059.44
tblVehicleEF	MHD	46.12	6.97
tblVehicleEF	MHD	0.48	0.42
tblVehicleEF	MHD	1.07	1.37
tblVehicleEF	MHD	12.91	1.81
tblVehicleEF	MHD	1.0800e-004	3.0300e-004
tblVehicleEF	MHD	3.0820e-003	6.8020e-003
tblVehicleEF	MHD	6.6500e-004	8.1000e-005
tblVehicleEF	MHD	1.0400e-004	2.9000e-004
tblVehicleEF	MHD	2.9450e-003	6.5030e-003
tblVehicleEF	MHD	6.1100e-004	7.5000e-005
tblVehicleEF	MHD	1.7170e-003	6.9900e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.02	0.01
tblVehicleEF	MHD	8.8800e-004	3.6300e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.01	0.08
tblVehicleEF	MHD	0.26	0.04

tblVehicleEF	MHD	1.6900e-003	6.9900e-004
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	5.3600e-004	6.9000e-005
tblVehicleEF	MHD	1.7170e-003	6.9900e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	8.8800e-004	3.6300e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.01	0.08
tblVehicleEF	MHD	0.29	0.04
tblVehicleEF	MHD	0.02	2.8830e-003
tblVehicleEF	MHD	3.6990e-003	1.4730e-003
tblVehicleEF	MHD	0.05	7.5440e-003
tblVehicleEF	MHD	0.38	0.41
tblVehicleEF	MHD	0.32	0.21
tblVehicleEF	MHD	5.02	0.91
tblVehicleEF	MHD	152.80	74.18
tblVehicleEF	MHD	1,184.93	1,059.43
tblVehicleEF	MHD	46.12	7.21
tblVehicleEF	MHD	0.44	0.44
tblVehicleEF	MHD	1.14	1.45
tblVehicleEF	MHD	13.01	1.82
tblVehicleEF	MHD	1.5700e-004	4.2700e-004
tblVehicleEF	MHD	3.0820e-003	6.8020e-003
tblVehicleEF	MHD	6.6500e-004	8.1000e-005
tblVehicleEF	MHD	1.5000e-004	4.0900e-004
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tblVehicleEF	MHD	6.1100e-004	7.5000e-005
tblVehicleEF	MHD	2.7800e-004	1.1500e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.02	0.02

tblVehicleEF	MHD	1.8800e-004	7.8000e-005
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.02	0.10
tblVehicleEF	MHD	0.29	0.04
tblVehicleEF	MHD	1.4680e-003	7.0300e-004
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	5.4900e-004	7.1000e-005
tblVehicleEF	MHD	2.7800e-004	1.1500e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	1.8800e-004	7.8000e-005
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.02	0.10
tblVehicleEF	MHD	0.32	0.04
tblVehicleEF	OBUS	0.01	8.4730e-003
tblVehicleEF	OBUS	8.2390e-003	7.2810e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.24	0.58
tblVehicleEF	OBUS	0.56	0.81
tblVehicleEF	OBUS	5.79	2.54
tblVehicleEF	OBUS	108.13	82.95
tblVehicleEF	OBUS	1,293.96	1,469.46
tblVehicleEF	OBUS	66.33	19.88
tblVehicleEF	OBUS	0.23	0.32
tblVehicleEF	OBUS	0.91	1.23
tblVehicleEF	OBUS	3.06	0.80
tblVehicleEF	OBUS	2.1000e-005	1.0600e-004
tblVehicleEF	OBUS	2.6580e-003	6.8520e-003
tblVehicleEF	OBUS	8.5400e-004	1.9300e-004
tblVehicleEF	OBUS	2.0000e-005	1.0200e-004
tblVehicleEF	OBUS	2.5240e-003	6.5370e-003

tblVehicleEF	OBUS	7.8500e-004	1.7800e-004
tblVehicleEF	OBUS	1.2020e-003	1.4590e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	5.6300e-004	6.8900e-004
tblVehicleEF	OBUS	0.05	0.04
tblVehicleEF	OBUS	0.04	0.27
tblVehicleEF	OBUS	0.35	0.12
tblVehicleEF	OBUS	1.0430e-003	7.9000e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.6500e-004	1.9700e-004
tblVehicleEF	OBUS	1.2020e-003	1.4590e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.07
tblVehicleEF	OBUS	5.6300e-004	6.8900e-004
tblVehicleEF	OBUS	0.06	0.06
tblVehicleEF	OBUS	0.04	0.27
tblVehicleEF	OBUS	0.39	0.13
tblVehicleEF	OBUS	0.01	8.5640e-003
tblVehicleEF	OBUS	8.5090e-003	7.5600e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.24	0.57
tblVehicleEF	OBUS	0.57	0.84
tblVehicleEF	OBUS	5.23	2.30
tblVehicleEF	OBUS	113.59	82.03
tblVehicleEF	OBUS	1,293.96	1,469.51
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tblVehicleEF	OBUS	0.86	1.17
tblVehicleEF	OBUS	2.99	0.78
tblVehicleEF	OBUS	1.8000e-005	9.4000e-005

tblVehicleEF	OBUS	2.6580e-003	6.8520e-003
tblVehicleEF	OBUS	8.5400e-004	1.9300e-004
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tblVehicleEF	OBUS	2.9030e-003	3.4900e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	1.2270e-003	1.4710e-003
tblVehicleEF	OBUS	0.05	0.04
tblVehicleEF	OBUS	0.03	0.26
tblVehicleEF	OBUS	0.33	0.11
tblVehicleEF	OBUS	1.0950e-003	7.8100e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.5500e-004	1.9300e-004
tblVehicleEF	OBUS	2.9030e-003	3.4900e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.04	0.07
tblVehicleEF	OBUS	1.2270e-003	1.4710e-003
tblVehicleEF	OBUS	0.06	0.06
tblVehicleEF	OBUS	0.03	0.26
tblVehicleEF	OBUS	0.36	0.12
tblVehicleEF	OBUS	0.01	8.3670e-003
tblVehicleEF	OBUS	8.0560e-003	7.0900e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.25	0.58
tblVehicleEF	OBUS	0.55	0.79
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tblVehicleEF	OBUS	1,293.96	1,469.42
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tblVehicleEF	OBUS	0.93	1.26
tblVehicleEF	OBUS	3.12	0.82
tblVehicleEF	OBUS	2.6000e-005	1.2200e-004
tblVehicleEF	OBUS	2.6580e-003	6.8520e-003
tblVehicleEF	OBUS	8.5400e-004	1.9300e-004
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tblVehicleEF	OBUS	7.8500e-004	1.7800e-004
tblVehicleEF	OBUS	5.5600e-004	6.8200e-004
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	2.9000e-004	3.5600e-004
tblVehicleEF	OBUS	0.05	0.04
tblVehicleEF	OBUS	0.04	0.29
tblVehicleEF	OBUS	0.37	0.12
tblVehicleEF	OBUS	9.7100e-004	8.0200e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.7200e-004	2.0000e-004
tblVehicleEF	OBUS	5.5600e-004	6.8200e-004
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	2.9000e-004	3.5600e-004
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tblVehicleEF	OBUS	0.04	0.29
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tblVehicleEF	SBUS	9.19	1.11
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tblVehicleEF	SBUS	9.7910e-003	0.01
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	1.2910e-003	6.9000e-005
tblVehicleEF	SBUS	5.6940e-003	2.8460e-003
tblVehicleEF	SBUS	2.4480e-003	2.6500e-003
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	1.1870e-003	6.3000e-005
tblVehicleEF	SBUS	2.9140e-003	3.2800e-004
tblVehicleEF	SBUS	0.03	3.2320e-003
tblVehicleEF	SBUS	1.28	0.31
tblVehicleEF	SBUS	1.3900e-003	1.5600e-004
tblVehicleEF	SBUS	0.09	0.06
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	0.55	0.03
tblVehicleEF	SBUS	9.6730e-003	3.2700e-003
tblVehicleEF	SBUS	9.0870e-003	9.5530e-003
tblVehicleEF	SBUS	9.2200e-004	4.8000e-005
tblVehicleEF	SBUS	2.9140e-003	3.2800e-004
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tblVehicleEF	SBUS	1.3900e-003	1.5600e-004
tblVehicleEF	SBUS	0.12	0.07
tblVehicleEF	SBUS	0.02	0.02

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tblVehicleEF	SBUS	0.84	0.07
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tblVehicleEF	SBUS	9.7910e-003	0.01
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	1.2910e-003	6.9000e-005
tblVehicleEF	SBUS	4.8000e-003	2.4080e-003
tblVehicleEF	SBUS	2.4480e-003	2.6500e-003
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	1.1870e-003	6.3000e-005
tblVehicleEF	SBUS	7.0300e-003	8.1200e-004
tblVehicleEF	SBUS	0.03	3.4020e-003
tblVehicleEF	SBUS	1.27	0.31
tblVehicleEF	SBUS	3.0460e-003	3.5900e-004
tblVehicleEF	SBUS	0.09	0.06
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	0.45	0.03
tblVehicleEF	SBUS	0.01	3.3230e-003
tblVehicleEF	SBUS	9.0870e-003	9.5530e-003
tblVehicleEF	SBUS	8.6800e-004	4.4000e-005

tblVehicleEF	SBUS	7.0300e-003	8.1200e-004
tblVehicleEF	SBUS	0.03	3.4020e-003
tblVehicleEF	SBUS	1.85	0.44
tblVehicleEF	SBUS	3.0460e-003	3.5900e-004
tblVehicleEF	SBUS	0.12	0.07
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tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	1.2910e-003	6.9000e-005
tblVehicleEF	SBUS	6.9290e-003	3.4510e-003
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tblVehicleEF	SBUS	7.2200e-004	7.8000e-005
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tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.32	5.6470e-003
tblVehicleEF	UBUS	8.7700e-004	6.0000e-006
tblVehicleEF	UBUS	0.28	0.03
tblVehicleEF	UBUS	3.0000e-003	7.9020e-003
tblVehicleEF	UBUS	0.30	5.4020e-003
tblVehicleEF	UBUS	8.0700e-004	6.0000e-006
tblVehicleEF	UBUS	2.2740e-003	1.2700e-004
tblVehicleEF	UBUS	0.05	6.9100e-004

tblVehicleEF	UBUS	1.1250e-003	3.1000e-005
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tblVehicleEF	UBUS	0.01	4.1210e-003
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tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	8.8600e-004	8.0000e-006
tblVehicleEF	UBUS	2.2740e-003	1.2700e-004
tblVehicleEF	UBUS	0.05	6.9100e-004
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tblVehicleEF	UBUS	0.01	4.1210e-003
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tblVehicleEF	UBUS	0.27	1.03
tblVehicleEF	UBUS	0.04	9.0700e-004
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tblVehicleEF	UBUS	5.80	0.06
tblVehicleEF	UBUS	2,210.19	1,639.89
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tblVehicleEF	UBUS	14.70	1.12
tblVehicleEF	UBUS	16.56	8.1020e-003
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tblVehicleEF	UBUS	0.32	5.6470e-003
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tblVehicleEF	UBUS	3.0000e-003	7.9020e-003
tblVehicleEF	UBUS	0.30	5.4020e-003
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tblVehicleEF	UBUS	5.7800e-003	3.0700e-004
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tblVehicleEF	UBUS	2.4730e-003	6.7000e-005

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tblVehicleEF	UBUS	8.5800e-004	8.0000e-006
tblVehicleEF	UBUS	5.7800e-003	3.0700e-004
tblVehicleEF	UBUS	0.05	7.6900e-004
tblVehicleEF	UBUS	2.4730e-003	6.7000e-005
tblVehicleEF	UBUS	1.13	1.05
tblVehicleEF	UBUS	0.01	3.7140e-003
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tblVehicleEF	UBUS	0.26	1.03
tblVehicleEF	UBUS	0.05	1.1230e-003
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tblVehicleEF	UBUS	2,210.19	1,639.89
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tblVehicleEF	UBUS	16.69	9.2760e-003
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tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.32	5.6470e-003
tblVehicleEF	UBUS	8.7700e-004	6.0000e-006
tblVehicleEF	UBUS	0.28	0.03
tblVehicleEF	UBUS	3.0000e-003	7.9020e-003
tblVehicleEF	UBUS	0.30	5.4020e-003
tblVehicleEF	UBUS	8.0700e-004	6.0000e-006
tblVehicleEF	UBUS	8.8500e-004	6.2000e-005
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tblVehicleEF	UBUS	5.3400e-004	1.7000e-005
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tblVehicleEF	UBUS	0.62	4.9100e-003
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	9.1000e-004	9.0000e-006
tblVehicleEF	UBUS	8.8500e-004	6.2000e-005
tblVehicleEF	UBUS	0.06	7.1600e-004
tblVehicleEF	UBUS	5.3400e-004	1.7000e-005
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tblVehicleTrips	ST_TR	6.39	3.21
tblVehicleTrips	ST_TR	86.32	87.08
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tblVehicleTrips	ST_TR	49.97	44.87

tblVehicleTrips	ST_TR	177.59	159.99
tblVehicleTrips	SU_TR	5.86	3.21
tblVehicleTrips	SU_TR	31.90	87.08
tblVehicleTrips	SU_TR	500.00	364.94
tblVehicleTrips	SU_TR	25.24	21.10
tblVehicleTrips	SU_TR	166.44	154.79
tblVehicleTrips	WD_TR	6.65	3.21
tblVehicleTrips	WD_TR	148.15	87.08
tblVehicleTrips	WD_TR	716.00	697.67
tblVehicleTrips	WD_TR	42.70	36.50
tblVehicleTrips	WD_TR	102.24	127.96
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	12,770,189.02	12,191,000.00
tblWater	IndoorWaterUseRate	99,849.76	0.00
tblWater	IndoorWaterUseRate	470,477.25	0.00
tblWater	IndoorWaterUseRate	118,516.03	0.00
tblWater	IndoorWaterUseRate	2,861,055.27	0.00
tblWater	OutdoorWaterUseRate	8,050,771.34	0.00

tblWater	OutdoorWaterUseRate	61,198.24	0.00
tblWater	OutdoorWaterUseRate	30,030.46	0.00
tblWater	OutdoorWaterUseRate	72,638.86	0.00
tblWater	OutdoorWaterUseRate	88,486.25	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	3.92	0.00
tblWoodstoves	NumberNoncatalytic	3.92	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0091	0.0168	1.4568	8.0000e-005		8.0600e-003	8.0600e-003		8.0600e-003	8.0600e-003	0.0000	2.3794	2.3794	2.2900e-003	0.0000	2.4367
Energy	0.0153	0.1342	0.0812	8.3000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	308.2252	308.2252	0.0171	4.8100e-003	310.0865
Mobile	1.9919	4.3525	16.6801	0.0541	5.0569	0.0460	5.1029	1.3544	0.0432	1.3976	0.0000	5,087.8265	5,087.8265	0.2124	0.0000	5,093.1362
Waste						0.0000	0.0000		0.0000	0.0000	49.3146	0.0000	49.3146	2.9144	0.0000	122.1749
Water						0.0000	0.0000		0.0000	0.0000	4.3132	4.6163	8.9295	0.0153	9.4400e-003	12.1241
Total	**3.0163**	**4.5035**	**18.2181**	**0.0550**	**5.0569**	**0.0647**	**5.1215**	**1.3544**	**0.0618**	**1.4162**	**53.6278**	**5,403.0473**	**5,456.6752**	**3.1615**	**0.0143**	**5,539.9584**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0091	0.0168	1.4568	8.0000e-005		8.0600e-003	8.0600e-003		8.0600e-003	8.0600e-003	0.0000	2.3794	2.3794	2.2900e-003	0.0000	2.4367
Energy	0.0153	0.1342	0.0812	8.3000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	308.2252	308.2252	0.0171	4.8100e-003	310.0865
Mobile	1.9919	4.3525	16.6801	0.0541	5.0569	0.0460	5.1029	1.3544	0.0432	1.3976	0.0000	5,087.8265	5,087.8265	0.2124	0.0000	5,093.1362
Waste						0.0000	0.0000		0.0000	0.0000	49.3146	0.0000	49.3146	2.9144	0.0000	122.1749
Water						0.0000	0.0000		0.0000	0.0000	3.4506	3.6930	7.1436	0.0122	7.5500e-003	9.6993
Total	**3.0163**	**4.5035**	**18.2181**	**0.0550**	**5.0569**	**0.0647**	**5.1215**	**1.3544**	**0.0618**	**1.4162**	**52.7652**	**5,402.1241**	**5,454.8893**	**3.1584**	**0.0124**	**5,537.5335**

	ROG	NOx	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**	**1.61**	**0.02**	**0.03**	**0.10**	**13.26**	**0.04**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.9919	4.3525	16.6801	0.0541	5.0569	0.0460	5.1029	1.3544	0.0432	1.3976	0.0000	5,087.8265	5,087.8265	0.2124	0.0000	5,093.1362
Unmitigated	1.9919	4.3525	16.6801	0.0541	5.0569	0.0460	5.1029	1.3544	0.0432	1.3976	0.0000	5,087.8265	5,087.8265	0.2124	0.0000	5,093.1362

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	628.24	628.24	628.24	1,634,143	1,634,143
Bank (with Drive-Through)	219.44	219.44	219.44	594,681	594,681
Enclosed Parking with Elevator	0.00	0.00	0.00		
Fast Food Restaurant w/o Drive Thru	1,081.38	955.97	565.65	2,641,960	2,641,960
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Regional Shopping Center	58.40	71.79	33.76	158,318	158,318
Supermarket	2,970.05	3,713.47	3592.78	8,575,366	8,575,366
Total	4,957.51	5,588.90	5,039.86	13,604,468	13,604,468

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 Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	100	0	0
Bank (with Drive-Through)	9.50	7.30	7.30	6.60	74.40	19.00	100	0	0
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	100	0	0
Fast Food Restaurant w/o Drive Thru	9.50	7.30	7.30	1.50	79.50	19.00	100	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	100	0	0
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	100	0	0
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.683985	0.047050	0.231856	0.020000	0.001684	0.000567	0.002688	0.005061	0.000000	0.000000	0.007108	0.000000	0.000000
Bank (with Drive-Through)	0.561348	0.038614	0.190285	0.107199	0.015389	0.005180	0.024554	0.046236	0.002209	0.002456	0.005491	0.000334	0.000704
Enclosed Parking with Elevator	0.561348	0.038614	0.190285	0.107199	0.015389	0.005180	0.024554	0.046236	0.002209	0.002456	0.005491	0.000334	0.000704
Fast Food Restaurant w/o Drive Thru	0.561348	0.038614	0.190285	0.107199	0.015389	0.005180	0.024554	0.046236	0.002209	0.002456	0.005491	0.000334	0.000704
Other Non-Asphalt Surfaces	0.561348	0.038614	0.190285	0.107199	0.015389	0.005180	0.024554	0.046236	0.002209	0.002456	0.005491	0.000334	0.000704
Regional Shopping Center	0.561348	0.038614	0.190285	0.107199	0.015389	0.005180	0.024554	0.046236	0.002209	0.002456	0.005491	0.000334	0.000704
Supermarket	0.561348	0.038614	0.190285	0.107199	0.015389	0.005180	0.024554	0.046236	0.002209	0.002456	0.005491	0.000334	0.000704

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	156.8071	156.8071	0.0142	2.0300e-003	157.7686
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	156.8071	156.8071	0.0142	2.0300e-003	157.7686
NaturalGas Mitigated	0.0153	0.1342	0.0812	8.3000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	151.4180	151.4180	2.9000e-003	2.7800e-003	152.3179
NaturalGas Unmitigated	0.0153	0.1342	0.0812	8.3000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	151.4180	151.4180	2.9000e-003	2.7800e-003	152.3179

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.65123e+006	8.9000e-003	0.0761	0.0324	4.9000e-004		6.1500e-003	6.1500e-003		6.1500e-003	6.1500e-003	0.0000	88.1161	88.1161	1.6900e-003	1.6200e-003	88.6397
Bank (with Drive-Through)	61793.6	3.3000e-004	3.0300e-003	2.5400e-003	2.0000e-005		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004	0.0000	3.2975	3.2975	6.0000e-005	6.0000e-005	3.3171
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	259153	1.4000e-003	0.0127	0.0107	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.8294	13.8294	2.7000e-004	2.5000e-004	13.9116
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	7286.88	4.0000e-005	3.6000e-004	3.0000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3889	0.3889	1.0000e-005	1.0000e-005	0.3912
Supermarket	858000	4.6300e-003	0.0421	0.0353	2.5000e-004		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003	0.0000	45.7861	45.7861	8.8000e-004	8.4000e-004	46.0582
Total		**0.0153**	**0.1342**	**0.0812**	**8.4000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**151.4180**	**151.4180**	**2.9100e-003**	**2.7800e-003**	**152.3179**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.65123e+006	8.9000e-003	0.0761	0.0324	4.9000e-004		6.1500e-003	6.1500e-003		6.1500e-003	6.1500e-003	0.0000	88.1161	88.1161	1.6900e-003	1.6200e-003	88.6397
Bank (with Drive-Through)	61793.6	3.3000e-004	3.0300e-003	2.5400e-003	2.0000e-005		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004	0.0000	3.2975	3.2975	6.0000e-005	6.0000e-005	3.3171
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive-Thru	259153	1.4000e-003	0.0127	0.0107	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.8294	13.8294	2.7000e-004	2.5000e-004	13.9116
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	7286.88	4.0000e-005	3.6000e-004	3.0000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3889	0.3889	1.0000e-005	1.0000e-005	0.3912
Supermarket	858000	4.6300e-003	0.0421	0.0353	2.5000e-004		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003	0.0000	45.7861	45.7861	8.8000e-004	8.4000e-004	46.0582
Total		**0.0153**	**0.1342**	**0.0812**	**8.4000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**151.4180**	**151.4180**	**2.9100e-003**	**2.7800e-003**	**152.3179**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	825838	57.7924	5.2400e-003	7.5000e-004	58.1467
Bank (with Drive-Through)	18686.5	1.3077	1.2000e-004	2.0000e-005	1.3157
Enclosed Parking with Elevator	474678	33.2181	3.0100e-003	4.3000e-004	33.4218
Fast Food Restaurant w/o Drive-Thru	44383.4	3.1060	2.8000e-004	4.0000e-005	3.1250
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	16363.5	1.1451	1.0000e-004	1.0000e-005	1.1521
Supermarket	860785	60.2379	5.4700e-003	7.8000e-004	60.6073
Total		**156.8071**	**0.0142**	**2.0300e-003**	**157.7686**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	825838	57.7924	5.2400e-003	7.5000e-004	58.1467
Bank (with Drive-Through)	18686.5	1.3077	1.2000e-004	2.0000e-005	1.3157
Enclosed Parking with Elevator	474678	33.2181	3.0100e-003	4.3000e-004	33.4218
Fast Food Restaurant w/o Drive-Thru	44383.4	3.1060	2.8000e-004	4.0000e-005	3.1250
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	16363.5	1.1451	1.0000e-004	1.0000e-005	1.1521
Supermarket	860785	60.2379	5.4700e-003	7.8000e-004	60.6073
Total		**156.8071**	**0.0142**	**2.0300e-003**	**157.7686**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0091	0.0168	1.4568	8.0000e-005		8.0600e-003	8.0600e-003		8.0600e-003	8.0600e-003	0.0000	2.3794	2.3794	2.2900e-003	0.0000	2.4367
Unmitigated	1.0091	0.0168	1.4568	8.0000e-005		8.0600e-003	8.0600e-003		8.0600e-003	8.0600e-003	0.0000	2.3794	2.3794	2.2900e-003	0.0000	2.4367

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1821					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7830					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0440	0.0168	1.4568	8.0000e-005		8.0600e-003	8.0600e-003		8.0600e-003	8.0600e-003	0.0000	2.3794	2.3794	2.2900e-003	0.0000	2.4367
Total	**1.0091**	**0.0168**	**1.4568**	**8.0000e-005**		**8.0600e-003**	**8.0600e-003**		**8.0600e-003**	**8.0600e-003**	**0.0000**	**2.3794**	**2.3794**	**2.2900e-003**	**0.0000**	**2.4367**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1821					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7830					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0440	0.0168	1.4568	8.0000e-005		8.0600e-003	8.0600e-003		8.0600e-003	8.0600e-003	0.0000	2.3794	2.3794	2.2900e-003	0.0000	2.4367
Total	**1.0091**	**0.0168**	**1.4568**	**8.0000e-005**		**8.0600e-003**	**8.0600e-003**		**8.0600e-003**	**8.0600e-003**	**0.0000**	**2.3794**	**2.3794**	**2.2900e-003**	**0.0000**	**2.4367**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	7.1436	0.0122	7.5500e-003	9.6993
Unmitigated	8.9295	0.0153	9.4400e-003	12.1241

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	12.191 / 0	8.9295	0.0153	9.4400e-003	12.1241
Bank (with Drive-Through)	0 / 0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0 / 0	0.0000	0.0000	0.0000	0.0000
Supermarket	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**8.9295**	**0.0153**	**9.4400e-003**	**12.1241**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	9.7528 / 0	7.1436	0.0122	7.5500e-003	9.6993
Bank (with Drive-Through)	0 / 0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive-Thru	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0 / 0	0.0000	0.0000	0.0000	0.0000
Supermarket	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**7.1436**	**0.0122**	**7.5500e-003**	**9.6993**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	49.3146	2.9144	0.0000	122.1749
Unmitigated	49.3146	2.9144	0.0000	122.1749

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	90.16	18.3017	1.0816	0.0000	45.3416
Bank (with Drive-Through)	2.35	0.4770	0.0282	0.0000	1.1818
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	17.85	3.6234	0.2141	0.0000	8.9768
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.68	0.3410	0.0202	0.0000	0.8449
Supermarket	130.9	26.5715	1.5703	0.0000	65.8298
Total		**49.3146**	**2.9144**	**0.0000**	**122.1749**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	90.16	18.3017	1.0816	0.0000	45.3416
Bank (with Drive-Through)	2.35	0.4770	0.0282	0.0000	1.1818
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	17.85	3.6234	0.2141	0.0000	8.9768
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.68	0.3410	0.0202	0.0000	0.8449
Supermarket	130.9	26.5715	1.5703	0.0000	65.8298
Total		**49.3146**	**2.9144**	**0.0000**	**122.1749**

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