APPENDIX A

Air Quality and

Greenhouse Gas Study

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Villa Del Sol Mixed-Use Residential Project

Appendix A: Air Quality and Greenhouse Gas Study

prepared for

Circlepoint
46 South First Street
San José, California 95113
Contact: Alex Casbara, Project Manager

prepared by

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December 2020

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
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1 Project Description

1.1 Introduction

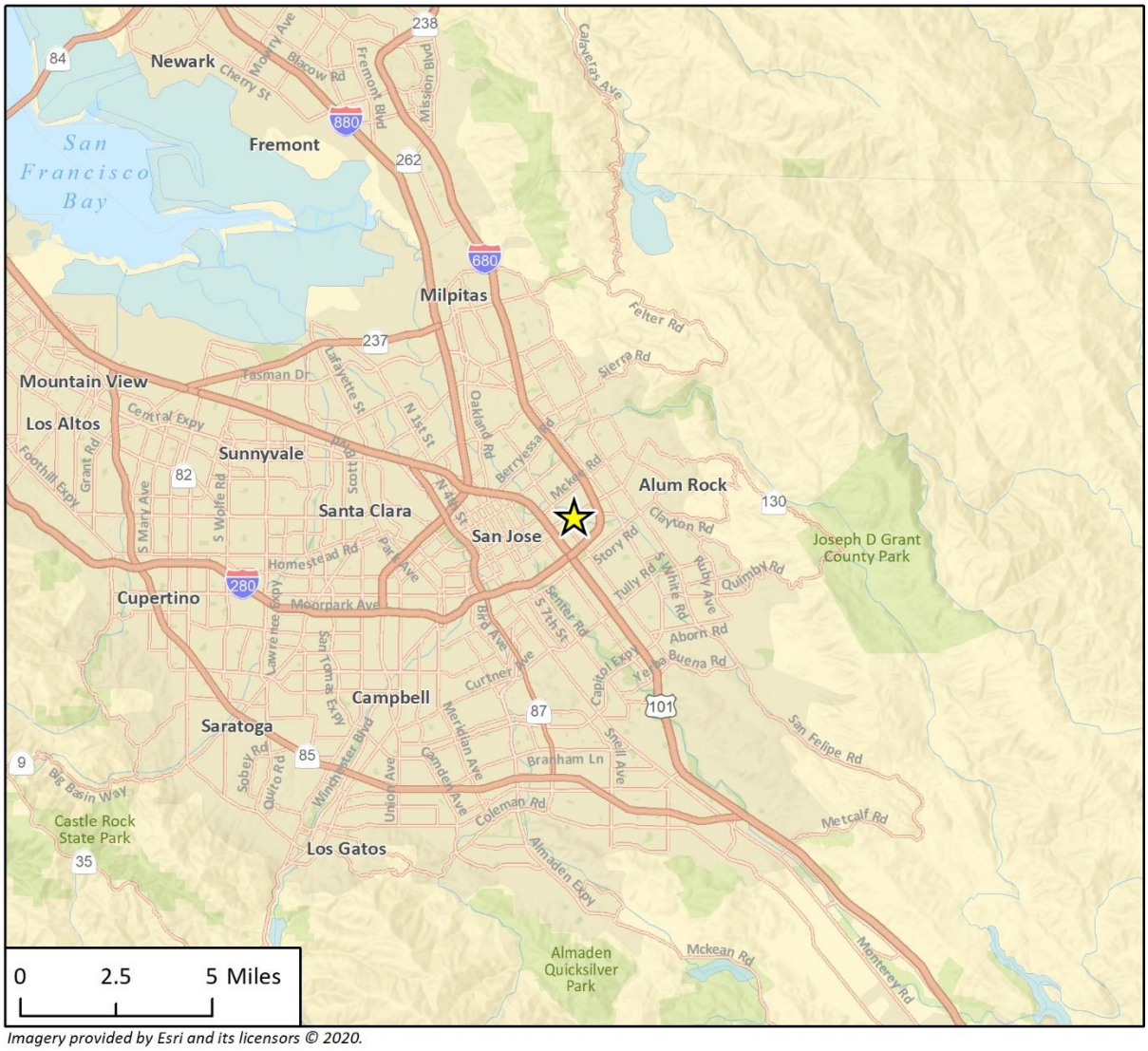
This study analyzes of the potential air quality and greenhouse gas (GHG) impacts of the proposed Villa Del Sol Mixed-Use Residential Project (herein referred to as "proposed project" or "project") in San José, California. Rincon Consultants, Inc. (Rincon) prepared this study for Circlepoint for use in support of environmental documentation being prepared for the City of San José for the project pursuant to the California Environmental Quality Act (CEQA). The purpose of this study is to analyze the project's air quality and GHG impacts related to both temporary construction activity and long-term operation of the project.

1.2 Project Summary

1.2.1 Project Location

The project site encompasses approximately 1.49 acres (64,904 square feet [sf]) on a generally level, rectangular site at 1936 Alum Rock Avenue, on the south side of Alum Rock Road west of its intersection with McCreery Avenue. The site currently is currently unpaved and used as an outdoor storage area. Adjacent land uses include mixed-use development to the west, an outdoor storage area to the east, single family residences to the south, and commercial development to the north across Alum Rock Avenue. Thompson Creek is approximately 50 feet east of the site. Figure 1 shows the project site's regional location and Figure 2 shows an aerial view of the project site and surrounding area.

Figure 1 Regional Location



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Project Location

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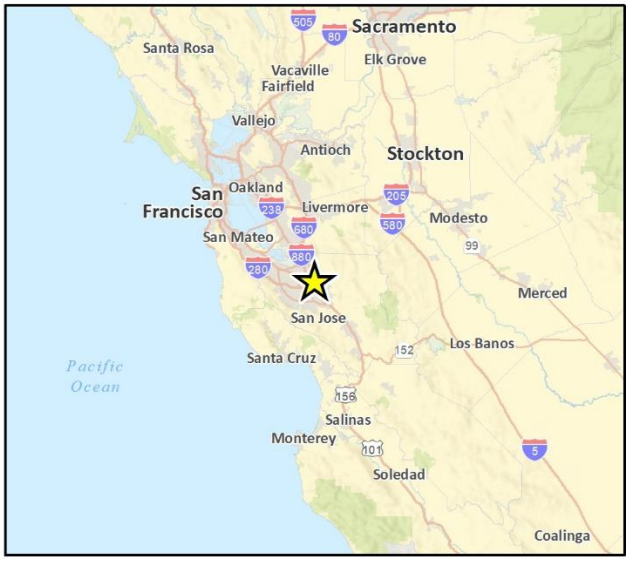

Figure 2 Project Site

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Fig 2 Project Location

1.2.2 Project Description

The project would involve the construction of a six-story mixed-use development with a total of 194 below-market-rate residential units on an approximately 1.49-acre site. Materials stored on the site would be removed as part of the project. The project would include 60 studio units, 80 one-bedroom units, 49 two-bedroom units, and 5 three-bedroom units. The project would also provide a lobby, three landscaped courtyards, three recreation areas, a fitness room, and an open space area. In addition to the residential component the project would include approximately 3,000 square feet of commercial space along Alum Rock Avenue. A total of 12 parking spaces would be provided to serve the commercial spaces. A parking garage with 97 spaces would be constructed below the residential development; access to the site would be provided from a private drive off of Alum Rock Avenue and a second driveway off of Tierra Encantada Way. Approximately 190 bicycle parking spaces would be included on the site. Project plans are included in Appendix A.[1]

1.2.3 Construction

Project construction is expected to commence in summer 2021 with full buildout completed by January 2023. Site preparation and demolition would occur in September 2021 and grading would occur starting in October 2021 and last approximately two to three months, with building construction beginning in December 2021. The project would require the export of approximately 2,318 cubic yards (CY) of material from the site. Approximately 807 CY would be exported during demolition and 1,511 CY would be exported during grading. The approximately 3,614 CY of cut volume during site preparation would be used as fill on the site.

1.2.4 Sustainability Features

The project would include green building features such as energy-efficient appliances, construction of southwest facing resident courtyards, and modular construction.

[1] Minor changes have been made to the project plans since modeling in October 2020. Notable changes include increase of the lobby square footage by 146 square feet, reduction of two parking spaces, addition of three parking spaces, increased open space by 288 square feet. These minor changes would not notably alter the emissions modeling, which is based on the October 2020 site plans.

2 Air Quality

2.1 Environmental and Regulatory Setting

2.1.1 Local Climate and Meteorology

The project site is located in the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). As the local air quality management agency, the BAAQMD is required to monitor air pollutant levels to ensure that state and federal air quality standards are met and, if they are not met, to develop strategies to meet the standards.

Regional Climate and Air Pollution in the SFBAAB

The City of San José is located in the southern portion of the SFBAAB and the proximity to the Pacific Ocean and San Francisco Bay influence the climate in the city and surrounding region. The Santa Cruz Mountains and Diablo Mountain Range on either side of the South Bay restrict air dispersion, and this alignment of the terrain also channels winds from the north to south, carrying pollution from the northern Peninsula toward San José. The annual high temperature is approximately 73°F, while the annual low temperature is approximately 51°F (United States Climate Data 2020). The average temperature is 62°F and the average annual precipitation is 15 inches. Winds play a large role in controlling climate in the area, and annual average winds range between five and ten miles per hour in this region (BAAQMD 2017a).

Air pollutant emissions in the SFBAAB are generated primarily by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat. Area sources are distributed widely and include those such as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources may be operated legally on roadways and highways. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment. Air pollutants can also be generated by the natural environment such as when high winds suspend fine dust particles (BAAQMD 2017a).

2.1.2 Air Pollutants of Primary Concern

Primary criteria pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere. Primary criteria pollutants include carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter with diameters of up to ten microns (PM_{10}) and up to 2.5 microns ($PM_{2.5}$), and lead (Pb). Ozone (O_3) is considered a secondary criteria pollutant because it is created by atmospheric chemical and photochemical reactions between volatile organic compounds (VOC) and nitrogen oxides (NO_X). The following subsections describe the characteristics, sources, and health and atmospheric effects of critical air contaminants.

Ozone

Ozone is produced by a photochemical reaction (triggered by sunlight) between NO_X and VOC.[2] Nitrogen oxides are formed during the combustion of fuels, while VOC are formed during combustion and evaporation of organic solvents. Because O_3 requires sunlight to form, it usually occurs in substantial concentrations between the months of April and October. Ozone is a pungent, colorless, toxic gas with direct health effects on humans including respiratory and eye irritation and possible changes in lung functions. Groups most sensitive to O_3 include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors.

Carbon Monoxide

Carbon monoxide is a local pollutant that is found in high concentrations only near fuel combustion equipment and other sources of CO. The primary source of CO, a colorless, odorless, poisonous gas, is automobile traffic. Therefore, elevated concentrations are usually only found near areas of high traffic volumes. Carbon monoxide's health effects are related to its affinity for hemoglobin in the blood. At high concentrations, CO reduces the amount of oxygen in the blood, causing heart difficulty in people with chronic diseases, reduced lung capacity, and impaired mental abilities.

Nitrogen Dioxide

Nitrogen dioxide is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts rapidly to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. Nitrogen dioxide is an acute irritant. A relationship between NO_2 and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. Nitrogen dioxide absorbs blue light, gives a reddish-brown cast to the atmosphere, and reduces visibility. It can also contribute to the formation of ozone/smog and acid rain.

Suspended Particulates

Atmospheric particulate matter is comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. The particulates that are of particular concern are PM_{10} (small particulate matter which measures no more than 10 microns in diameter) and $PM_{2.5}$ (fine particulate matter which measures no more than 2.5 microns in diameter). The characteristics, sources, and potential health effects associated with PM_{10} and $PM_{2.5}$ can be different. Major man-made sources of PM_{10} are agricultural operations, industrial processes, combustion of fossil fuels, construction, demolition operations, and entrainment of road dust into the atmosphere. Natural sources include windblown dust, wildfire smoke, and sea spray salt. The finer $PM_{2.5}$ particulates are generally associated with combustion processes as well as formation in the atmosphere as a secondary pollutant through chemical reactions. $PM_{2.5}$ is more likely to penetrate deeply into the lungs and poses a serious health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the small and fine particulate matter that is inhaled into the

[2] Organic compound precursors of ozone are routinely described by a number of variations of three terms: hydrocarbons (HC), organic gases (OG), and organic compounds (OC). These terms are often modified by adjectives such as total, reactive, or volatile, and result in a rather confusing array of acronyms: HC, THC (total hydrocarbons), RHC (reactive hydrocarbons), TOG (total organic gases), ROG (reactive organic gases), TOC (total organic compounds), ROC (reactive organic compounds), and VOC (volatile organic compounds). While most of these differ in some significant way from a chemical perspective, two groups are important from an air quality perspective: non-photochemically reactive in the lower atmosphere, or photochemically reactive in the lower atmosphere (HC, RHC, ROG, ROC, and VOC). The SCAQMD uses the term VOC to denote organic precursors.

lungs remains there, which can cause permanent lung damage. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.

Lead

Lead is a metal found naturally in the environment, as well as in manufacturing products. Lead occurs in the atmosphere as particulate matter. The major sources of Pb emissions historically have been mobile and industrial sources. In the early 1970s, the United States Environmental Protection Agency (U.S. EPA) set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The U.S. EPA completed the ban prohibiting the use of leaded gasoline in highway vehicles in December 1995. As a result of the U.S. EPA's regulatory efforts to remove lead from gasoline, atmospheric lead concentrations have declined substantially over the past several decades. The most dramatic reductions in lead emissions occurred prior to 1990 due to the removal of lead from gasoline sold for most highway vehicles. Lead emissions were further reduced substantially between 1990 and 2008, with reductions occurring in the metals industries in part due to national emissions standards for hazardous air pollutants (U.S. EPA 2013). As a result of phasing out leaded gasoline, metal processing is currently the primary source of Pb emissions. The highest levels of Pb in the air are generally found near lead smelters. Other stationary sources include waste incinerators, utilities, and lead-acid battery manufacturers. Lead may cause a range of health effects, including anemia, kidney disease, and neuromuscular and neurological dysfunction (in severe cases). The proposed project does not include any stationary sources of lead emissions. Therefore, implementation of the project would not result in substantial emissions of lead, and this pollutant is not discussed further in this analysis.

Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or serious illness or that may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. One of the main sources of TACs in California is diesel engines that emit exhaust containing solid material known as diesel particulate matter (DPM; CARB 2011). TACs are different than the criteria pollutants previously discussed because ambient air quality standards have not been established for TACs. TACs occurring at extremely low levels may still cause health effects, and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts are described by carcinogenic risk and by chronic (i.e., of long duration) and acute (i.e., severe but of short duration) adverse effects on human health.

2.1.3 Air Quality Regulation

The federal and state governments have established ambient air quality standards for the protection of public health. The U.S. EPA is the federal agency designated to administer air quality regulation, while the California Air Resources Board (CARB) is the state equivalent within the California Environmental Protection Agency. County-level Air Quality Management Districts (AQMDs) provide local management of air quality. CARB has established air quality standards and is responsible for the control of mobile emission sources, while the local AQMDs are responsible for

enforcing standards and regulating stationary sources. CARB has established 15 air basins statewide, including the SFBAAB.

The U.S. EPA has set primary national ambient air quality standards (NAAQS) for O_3, CO, NO_2, PM_{10}, $PM_{2.5}$, SO_2, and Pb. Primary standards are those levels of air quality deemed necessary, with an adequate margin of safety, to protect public health. In addition, California has established health-based ambient air quality standards (known as the California ambient air quality standards [CAAQS]) for these and other pollutants, some of which are more stringent than the federal standards. Table 1 lists the current federal and state standards for regulated pollutants.

Table 1 Federal and State Ambient Air Quality Standards

Pollutant	Federal Standard	California Standard
Ozone	0.070 ppm (8-hr avg)	0.09 ppm (1-hr avg) 0.070 ppm (8-hr avg)
Carbon Monoxide	35.0 ppm (1-hr avg) 9.0 ppm (8-hr avg)	20.0 ppm (1-hr avg) 9.0 ppm (8-hr avg)
Nitrogen Dioxide	0.100 ppm (1-hr avg) 0.053 ppm (annual avg)	0.18 ppm (1-hr avg) 0.030 ppm (annual avg)
Sulfur Dioxide	0.075 ppm (1-hr avg) 0.5 ppm (3-hr avg) 0.14 ppm (24-hr avg) 0.030 ppm (annual avg)	0.25 ppm (1-hr avg) 0.04 ppm (24-hr avg)
Lead	0.15 μg/m³ (rolling 3-month avg) 1.5 μg/m³ (calendar quarter)	1.5 μg/m³ (30-day avg)
Particulate Matter (PM_{10})	150 μg/m³ (24-hr avg)	50 μg/m³ (24-hr avg) 20 μg/m³ (annual avg)
Particulate Matter ($PM_{2.5}$)	35 μg/m³ (24-hr avg) 12 μg/m³ (annual avg)	12 μg/m³ (annual avg)
Visibility-Reducing Particles	No Federal Standards	Extinction coefficient of 0.23 per kilometer – visibility of ten miles or more (0.07 - 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape. (8-hr avg)
Sulfates	No Federal Standards	25 μg/m³ (24-hr avg)
Hydrogen Sulfide	No Federal Standards	0.03 ppm (1-hr avg)
Vinyl Chloride	No Federal Standards	0.01 ppm (24-hr avg)

ppm= parts per million; μg/m³ = micrograms per cubic meter
Source: CARB 2016

The BAAQMD is the designated air quality control agency in the SFBAAB, which is a non-attainment area for the federal standards for ozone and $PM_{2.5}$ The SFBAAB is in nonattainment for the federal standards for ozone (O_3) and $PM_{2.5}$ and in nonattainment for the state standard for O_3, $PM_{2.5}$, and PM_{10}. The SFBAAB is designated unclassifiable or in attainment for all other federal and state standards.

2.1.4 Current Air Quality

The BAAQMD operates a network of air quality monitoring stations throughout the SFBAAB. The purpose of the monitoring stations is to measure ambient concentrations of pollutants and to determine whether ambient air quality meets the California and federal standards. The SFBAAB monitoring station closest to the project site is the San José-Knox Avenue station located approximately one mile south of the project site. Data from this station was used to determine NO_X and $PM_{2.5}$ concentrations in the project vicinity. The San José-Jackson Street Station, which is located approximately two miles west of the project site, was used for O_3, CO, and PM_{10}. Table 2 indicates the number of days that each of the federal and state standards has been exceeded at this station in each year from 2016 to 2018. The data indicate that the federal and state eight-hour ozone standards and state worst hour ozone standard were exceeded in 2017. In addition, the state and federal PM_{10} standard was exceeded in 2018 and the state $PM_{2.5}$ standard was exceeded in 2017 and 2018. As shown in Table 2, no other state or federal standards were exceeded at these monitoring stations. No stations in the vicinity of the project site have monitored CO in the last seven years (CARB 2020).

Table 2 Ambient Air Quality – Santa Clarita Monitoring Station (2016-2018)

Pollutant	2016	2017	2018
Ozone (ppm), Eight-Hour Average	0.066	0.098	0.061
Number of days of state exceedances (>0.070 ppm)	0	4	0
Number of days of federal exceedances (>0.070 ppm)	0	4	0
Ozone (ppm), Worst Hour[1]	0.087	0.121	0.078
Number of days of state exceedances (>0.09 ppm)	0	3	0
Nitrogen Dioxide (ppm), Worst Hour[1]	0.052	0.068	0.088
Number of days of state exceedances (>0.18 ppm)	0	0	0
Particulate Matter <10 microns ($\mu g/m^3$), Worst 24 Hours[2]	40.0	69.4	155.8
Number of days of state exceedances (>50 $\mu g/m^3$)	0	6	4
Number of days of federal exceedances (>150 $\mu g/m^3$)	0	0	1
Particulate Matter <2.5 microns ($\mu g/m^3$), Worst 24 Hours[1]	22.6	49.7	133.9
Number of days of state exceedances (>35 $\mu g/m^3$)	0	6	15

ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter

Source: CARB 2020

Air Quality Management Plan

The BAAQMD is responsible for assuring that the federal and State ambient air quality standards are attained and maintained in the Bay Area. The BAAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, as well as many other activities.

The BAAQMD adopted the 2017 Clean Air Plan (2017 Plan) as an update to the 2010 Clean Air Plan in April 2017. The 2017 Plan provides a regional strategy to protect public health and the climate. Consistent with the GHG reduction targets adopted by the state, the 2017 Plan lays the groundwork for a long-term effort to reduce Bay Area GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050 (BAAQMD 2017b). To fulfill state O_3 planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of O3 precursors—reactive organic gases (ROG) and nitrogen oxides (NO_X)—and reduce transport of O3 and its precursors to neighboring air basins. The 2017 Plan builds upon and enhances the BAAQMD's efforts to reduce emissions of fine particulate matter TAC (BAAQMD 2017b).

Sensitive Receptors

Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with an adequate margin of safety, to protect public health and welfare. They are designed to protect people most susceptible to respiratory distress, such as children under 14; persons over 65; persons engaged in strenuous work or exercise; and people with cardiovascular and chronic respiratory diseases. The majority of sensitive receptor locations are therefore residences, schools, and hospitals. The sensitive receptors nearest to the project site are the adjacent residences west and south of the project site. The project would also place new sensitive receptors on the project site for the proposed multi-family building.

2.2 Impact Analysis

2.2.1 Methodology

The project's construction and operational emissions were estimated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. CalEEMod uses project-specific information, including the project's land uses, square footages for different uses, and location, to estimate a project's construction and operational emissions.

Construction emissions modeled include emissions generated by construction equipment used on-site and emissions generated by vehicle trips associated with construction, such as worker and vendor trips. The construction schedule and construction equipment list were based on applicant-provided data. In addition, according to applicant-provided data, approximately 2,218 CY of soil would be exported from the project site. It was assumed that project construction would comply with all applicable regulatory standards, including BAAQMD Regulation 8, Rule 3 (Architectural Coatings). and Rule 1113 (Architectural Coatings). Project construction is expected to commence in summer 2021 with full buildout completed by January 2023. CalEEMod defaults for acreages graded were used to provide a conservative estimate of emissions from site preparation and grading

activities. Watering exposed surfaces twice daily and a 15 mile per hour speed limit on the site was included in construction modeling, as required by City of San José standard permit conditions.

Operational emissions modeled include mobile source emissions (i.e., vehicle emissions), energy emissions, and area source emissions. Mobile source emissions consist of emissions generated by vehicle trips to and from the project site. The trip generation rates for the various land uses were provided by Hexagon Transportation Consultants, Inc. (Hexagon 2020). Emissions attributed to energy use include emissions from natural gas consumption for space and water heating. Energy usage from commercial development was reduced by 30 percent to account for the requirements of 2019 Title 24 standards (California Energy Commission 2019). CalEEMod does not incorporate water use reductions achieved by 2016 CALGreen (Part 11 of Title 24). New development would be subject to CalGreen, which requires a 20 percent increase in indoor water use efficiency. Thus, in order to account for compliance with CalGreen, a 20 percent reduction in indoor water use was included in the water consumption calculations for new development. Area source emissions are generated by landscape maintenance equipment, consumer products, and architectural coatings.

2.2.2 Significance Thresholds

To determine whether a project would result in a significant impact to air quality, Appendix G of the *CEQA Guidelines* requires consideration of whether a project would:

1. Conflict with or obstruct implementation of the applicable air quality plan;
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard;
3. Expose sensitive receptors to substantial pollutant concentrations; or
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The BAAQMD has adopted guidelines for quantifying and determining the significance of air quality emissions in its May 2017 *CEQA Air Quality Guidelines*.

Regional Significance Thresholds

The BAAQMD's May 2017 *CEQA Air Quality Guidelines* are used in this analysis to evaluate air quality. Table 3 shows the significance thresholds for construction and operational-related criteria air pollutant and precursor emissions being used for the purposes of this analysis. These thresholds represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions. For the purposes of this analysis, the project would result in a significant impact if construction or operational emissions would exceed thresholds as shown below.

Table 3 BAAQMD Air Quality Significance Thresholds

Pollutant/ Precursor	Construction Emissions (average lbs/day)[1]	Operational Emissions (average lbs/day)
ROG	54	54
NO_X	54	54
PM_{10}	82	82
$PM_{2.5}$	54	54

Notes: lbs/day = pounds per day; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ROG = reactive organic gases
[1] Note the thresholds for PM_{10} and $PM_{2.5}$ apply to construction exhaust emissions only.
Source: BAAQMD 2017b

The BAAQMD recommends specific construction measures (as listed in Table 8-1 of the BAAQMD *CEQA Air Quality Guidelines*) be implemented to control emissions, whether or not significance thresholds are exceeded. These measures have conservatively not been included in the emissions modeling for the project.

In the absence of a qualified Community Risk Reduction Plan, BAAQMD has established the following *Thresholds of Significance* for local community risks and hazards associated with TACs and $PM_{2.5}$ for assessing individual source impacts at a local level (BAAQMD 2017c):

- Not to exceed an increased cancer risk of > 10 in one-millions
- Not to exceed increased non-cancer (i.e., Chronic or Acute) risk of > 1.0 Hazard Index
- Not to exceed ambient $PM_{2.5}$ concentration increase > 0.3 $\mu g/m^3$ annual average

A project would be considered to have a cumulatively considerable impact if the aggregate total of current and proposed TAC sources within a 1,000 feet radius of the project fence-line in addition to the project would exceed the following *Thresholds of Significance*:

- Not to exceed an increased cancer risk of > 100 in one million
- Not to exceed increased non-cancer (i.e., Chronic or Acute) risk of > 10 Hazard Index
- Not to exceed ambient $PM_{2.5}$ concentration increase > 0.8 $\mu g/m^3$ annual average

Excess cancer risks are defined as those occurring in excess of or above and beyond those risks that would normally be associated with a location or activity if toxic pollutants were not present. Non-carcinogenic health effects are expressed as a hazard index, which is the ratio of expected exposure levels to an acceptable reference exposure level.

BAAQMD defines sensitive receptors as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and the chronically ill. These facilities include residences, school playgrounds, child-care centers, retirement homes, and convalescent homes.

2.2.3 Impact Analysis

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

Impact AQ-1 THE PROJECT WOULD NOT CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE 2017 PLAN. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The California Clean Air Act requires that air districts create a CAP that describes how the jurisdiction will meet air quality standards. The most recently adopted air quality plan is the BAAQMD 2017 Plan. The 2017 Plan updates the most recent Bay Area plan, the 2010 Clean Air Plan, pursuant to air quality planning requirements defined in the California Health and Safety Code. To fulfill state O_3 planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of O_3 precursors—ROG and NO_X—and reduce transport of O_3 and its precursors to neighboring air basins. The CAP builds upon and enhances the BAAQMD's efforts to reduce emissions of fine particulate matter and TACs. The 2017 Plan does not include control measures that apply directly to individual development projects. Instead, the control strategy includes control measures related to stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-GHG pollutants.

The 2017 CAP focuses on two paramount goals:

- Protect air quality and health at the regional and local scale by attaining all national and state air quality standards and eliminating disparities among Bay Area communities in cancer health risk from TACs
- Protect the climate by reducing Bay Area GHG emissions to 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050

Under BAAQMD's methodology, a determination of consistency with the 2017 Plan should demonstrate that a project:

- Supports the primary goals of the air quality plan
- Includes applicable control measures from the air quality plan
- Does not disrupt or hinder implementation of any air quality plan control measures

A project that would not support the 2017 Plan's goals would not be considered consistent with the 2017 Plan. On an individual project basis, consistency with BAAQMD quantitative thresholds is interpreted as demonstrating support for the clean air plan's goals. As shown in the response to Threshold 2 (see below), the project would not result in exceedances of BAAQMD thresholds for criteria air pollutants and thus would not conflict with the 2017 Plan's goal to attain air quality standards. The 2017 Clean Air Plan includes goals and measures to increase the use of electric vehicles, promote the use of on-site renewable energy, and encourage energy efficiency. The project includes features that are consistent with these goals and measures, including meeting California Green Building Standards, providing natural light and ventilation, constructing southwestern facing courtyards, and providing 190 spaces of bicycle parking. Therefore, the project would not conflict with or obstruct the implementation of an applicable air quality plan and the project would have a less than significant impact.

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

Impact AQ-2 **PROJECT CONSTRUCTION AND OPERATION WOULD NOT RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF ANY CRITERIA POLLUTANT FOR WHICH THE PROJECT REGION IS IN NON-ATTAINMENT UNDER AN APPLICABLE FEDERAL OR STATE AMBIENT AIR QUALITY STANDARD. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

Construction Emissions

Project construction would involve demolition, site preparation, grading, building construction, paving, and architectural coating activities that have the potential to generate air pollutant emissions. Table 4 summarizes the estimated maximum daily emissions of ROG, NO_X, PM_{10} and $PM_{2.5}$ during project construction. As shown in Table 4 , project construction emissions for all criteria pollutants would be below the BAAQMD average daily thresholds of significance and therefore would be less than significant.

Table 4 Project Construction Emissions

	Average Daily Emissions (lbs/day)					
	ROG	**NO_X**	**CO**	**PM_{10} (exhaust)**	**$PM_{2.5}$ (exhaust)**	**SO_X**
Maximum Daily Emissions	22.3	22.9	19.6	1.1	1.0	<0.1
BAAQMD Thresholds (average daily emissions)	54	54	N/A	82	54	N/A
Threshold Exceeded?	No	No	N/A	No	No	N/A

Source: See Table 2.0 "Overall Construction-mitigated" emissions. Winter emissions results are shown for all emissions. See CalEEMod worksheets in Appendix B. Note modeling conservatively includes higher number of parking spaces from previous site plans.

N/A = not applicable; no BAAQMD threshold for CO or SO_X

The BAAQMD does not have quantitative thresholds for fugitive dust emissions during construction. Instead, the BAAQMD recommends Best Management Practices (BMPs) be implemented to reduce fugitive dust emissions. The City of San José requires projects to implement BMPs consistent with the BAAQMD *Basic Construction Mitigation Measures*. These measures would be part of standard conditions of approval for project construction.

Standard Permit Conditions

Consistent with the BAAQMD *CEQA Air Quality Guidelines* and the City of San José General Plan Policy MS-13.1, the project shall implement the following measures during all phases of construction on the project site, to reduce dust fall-out emissions:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered or maintain at least two feet of freeboard.

- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- Enclose, cover, water daily or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.)
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The air district's phone number shall also be visible to ensure compliance with applicable regulations.

With the implementation of this Standard Permit Condition, construction air quality impacts would be less than significant.

Operational Emissions

Long-term emissions associated with project operation are shown in Table 5. Emissions would not exceed BAAQMD daily or annual thresholds for any criteria pollutant. Since project emissions would not exceed BAAQMD thresholds for construction or operation, the project would not violate an air quality standard or result in a cumulatively considerable net increase in criteria pollutants and impacts would be less than significant.

Table 5 Project Operational Average Daily Emissions

Sources	Average Daily Emissions (lbs/day)					
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_X
Area	5.4	0.2	16.0	0.1	0.1	<0.1
Energy	0.1	0.4	0.2	<0.1	<0.1	<0.1
Mobile	1.5	5.7	14.0	4.2	1.1	<0.1
Total Project Emissions	7.0	6.3	30.2	4.3	1.3	<0.1
BAAQMD Thresholds	54	54	N/A	82	54	N/A
Threshold Exceeded?	No	No	N/A	No	No	N/A

Source: See Table 2.2 "Overall operational-mitigated" Winter emissions. See CalEEMod worksheets in Appendix B. Numbers may not add up due to rounding. Note modeling conservatively includes higher number of parking spaces from previous site plans.

N/A = not applicable; no BAAQMD threshold for CO or SO_X

Threshold 3 Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact AQ-3 **THE PROJECT WOULD NOT INCREASE CARBON MONOXIDE CONCENTRATIONS SUCH THAT IT WOULD CREATE CARBON MONOXIDE HOTSPOTS, AND CONSTRUCTION OF THE PROJECT WOULD NOT RESULT IN EMISSIONS OF TACS SUFFICIENT TO EXCEED APPLICABLE HEALTH RISK CRITERIA. THE PROJECT WOULD INVOLVE CONSTRUCTION OF NEW SENSITIVE RECEPTORS IN PROXIMITY TO EXISTING HIGHWAY, MAJOR ROADWAY, AND PERMITTED STATIONARY SOURCES OF TACS, WHICH MAY RESULT IN FUTURE RESIDENTS OF THE PROJECT BEING EXPOSED TO HEALTH RISKS IN EXCESS OF BAAQMD THRESHOLDS. IMPLEMENTATION OF MITIGATION MEASURE AQ-1 WOULD BE REQUIRED TO REDUCE THIS IMPACT TO A LESS THAN SIGNIFICANT LEVEL.**

Carbon Monoxide Hotspots

A carbon monoxide (CO) hotspot is a localized concentration of CO that is above a CO ambient air quality standard. Localized CO hotspots can occur at intersections with heavy peak hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the federal one-hour standard of 35.0 parts per million (ppm) or the federal and state eight-hour standard of 9.0 ppm (CARB 2016).

BAAQMD recommends comparing project's attributes with the following screening criteria as a first step to evaluating whether the project would result in the generation of CO concentrations that would substantially contribute to an exceedance of the *Thresholds of Significance*. The project would result in a less than significant impact to localized CO concentrations if:

1. The project is consistent with an applicable congestion management program for designated roads or highways, regional transportation plan, and local congestion management agency plans
2. The project would not increase traffic volumes at affected intersections to more than 44, 000 vehicles per hour
3. the project traffic would not increase traffic volumes at the affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage).

The project would include 194 residential units and 3,000 square feet of commercial development. Based on CalEEMod trip generation estimates for the land use type of "apartments mid-rise" and "general office building," there would be approximately 864 vehicle trips to the site per day (Hexagon 2020). The project trip generation is far below the screening thresholds listed above. Although queuing would occur on the project site it would only exceed storage space five percent of the time for a signalized movement.; thus, the concentration of CO emissions would be low and would rapidly disperse. Therefore, the impact of localized CO emissions would not be significant.

Toxic Air Contaminants

Construction Impacts

Construction-related activities would result in temporary project-generated emissions of diesel particulate matter (DPM) exhaust emissions from off-road, heavy-duty diesel equipment for site preparation, grading, building construction, and other construction activities. DPM was identified as a TAC by CARB in 1998(CARB 2017b).

Generation of DPM from construction projects typically occurs in a single area for a short period. Construction of the proposed project would occur over approximately 18 months. The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the Maximally Exposed Individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project. Thus, the duration of proposed construction activities (i.e., 18 months) is approximately 2 percent of the total exposure period used for health risk calculation. Current models and methodologies for conducting health-risk assessments are associated with longer-term exposure periods of 9, 30, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities, resulting in difficulties in producing accurate estimates of health risk (BAAQMD 2017c). Therefore, this analysis qualitatively discusses potential health risks associated with construction-related emissions of TACs, focusing on construction activities most likely to generate substantial TAC emissions and the duration of such activities relative to established, longer-term health risk exposure periods.

The maximum PM_{10} and $PM_{2.5}$ emissions would occur during site preparation and grading activities. These activities would last for approximately two months. PM emissions would decrease for the remaining construction period because construction activities such as building construction and architectural coating would require less construction equipment. While the maximum DPM emissions associated with site preparation and grading activities would only occur for a portion of the overall construction period, these activities represent the maximum exposure condition for the total construction period. The duration of site preparation and grading activities would represent less than one percent of the total exposure period for a 70-year health risk calculation.[3] Therefore, DPM generated by project construction would not create conditions where the probability is greater than 10 in one million of contracting cancer for the Maximally Exposed Individual or to generate

[3] (2 months / [12 months x 70 years]) x 100 = 0.24 percent

ground-level concentrations of non-carcinogenic TACs that exceed a Hazard Index greater than one for the Maximally Exposed Individual. This impact would be less than significant.

Operational Impacts

There is one permitted emission source identified within 1,000 feet of the project's fence line using BAAQMD's *Permitted Stationary Source Risk and Hazards* mapping tool.[4] The San José Dental Surgery Center (Source 19418) is located immediately adjacent to the project site's western boundary at 1988 Alum Rock Avenue. Generators located at the source are associated with a cancer risk of 0.770 in one million, and no non-cancer hazard index or $PM_{2.5}$ concentration. Due to the proximity of the source and to provide a conservative assessment of health risks at the project site, BAAQMD's distance adjustment multipliers were not applied to the cancer risk for Source 19418 for this analysis.

Other sources within 1,000 feet of the project fence line include Alum Rock Avenue, a California State Highway (State Route [SR] 130), and East San Antonio Street, a major roadway with more than 10,000 average daily trips (ADT). Alum Rock Avenue (SR 130) runs immediately north of the project site (approximately 50 feet to the highway centerline) and has an average daily trip volume of 15,329 trips, based on a traffic measurement collected in September 2018. East San Antonio Street runs approximately 825 feet south of the project site and has an average daily trip volume of approximately 11,546 trips, based on a traffic measurement collected in September 2005 (City of San José 2020). For screening purposes BAAQMD uses AERMOD[5] to model cancer risk and $PM_{2.5}$ concentrations associated with highways, major roadways, and railroads in the Bay Area, providing raster data indicating health risk associated with each of these sources. For this analysis cancer risk and $PM_{2.5}$ concentrations associated with the above-mentioned sources at four discrete receptors located at each corner of the project's fence-line were reviewed. To provide a conservative analysis, only the greatest cancer risk and $PM_{2.5}$ concentrations are provided in the Table 6.

As shown in Table 6, TAC emissions from SR 130 would expose future residents to $PM_{2.5}$ concentrations in excess of BAAQMD thresholds and a cancer risk greater than 10 in one million. All other sources would not exceed the cancer risk, $PM_{2.5}$, or non-cancer risk at the project site. Therefore, impacts to future residents from individual sources, specifically Alum Rock Avenue (SR 130) would be potentially significant.[6]

Table 6 also presents the sum of the screening data for all emission sources within 1,000 feet of the project's fence-line and represents the potential cumulative impact on future residents. Cancer risk, non-cancer risk, and $PM_{2.5}$ concentrations from highway, major roadway, rail, and permitted stationary sources within 1,000 feet of the project site would not exceed BAAQMD's cumulative health risk thresholds. Therefore, cumulative impacts would be less than significant.

[5] A steady-state plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain.

[6] Calculations used in the screening analysis do not include source-specific exhaust information such as release height, exhaust gas exit velocity, exhaust gas temperature, nor do they account for specific distances from receptors. Therefore, the resulting values are based on worst-case assumptions. A more refined analysis using source-specific exhaust parameters, site-specific meteorological data, site-specific building dimensions and locations, and actual location of source and receptors would be expected to result in lower and more accurate values than the conservative values from the screening tools.

Table 6 Individual and Cumulative Cancer Risk and Particulate Matter Concentrations

Source ID[1]	Description	Distance to Project Site (feet)	Cancer Risk (in 1 million)	$PM_{2.5}$ Concentration (µg/m3)	Increased Non-Cancer Risk (Chronic Hazard Index)
N/A	Highway	50	32.68	0.65	N/A
N/A	Major Roadways	825	2.20	0.05	N/A
N/A	Rail	--[2]	1.01	<0.01	N/A
19418	Generators	20	0.77	N/A	0
Combined Total			**36.66**	**0.70**	**<0.01**
BAAQMD Individual Source Screening Threshold			10	0.3	1
Individual Source Threshold Exceeded?			**Yes**	**Yes**	No
BAAQMD Cumulative Screening Threshold			100	0.8	10
Cumulative Threshold Exceeded?			No	No	No

[1] Source IDs presented here are those used in the *Stationary Source Screening Analysis Tool.*

[2] While BAAQMD Raster Files report a health risk associated with rail sources, there are no rail sources located within 1,000 feet of the project site. Health risk associated with rail sources as reported by BAAQMD is included to provide a conservative analysis.

N/A: not applicable; data was not provided in the BAAQMD risk screening values.

Source: Appendix C, Health Risk Report

Mitigation Measures

Because the screening analysis for operation indicates that the proposed project would potentially expose future residents to excess cancer risk and PM $_{2.5}$ concentrations that exceed the single source health risk thresholds, Mitigation Measure AQ-1 is required. Mitigation Measure AQ-1 would involve refined project-specific modeling, thereby providing a more accurate estimation of the potential risk to future residents; if the refined health risk modeling determines that the project poses an unacceptable risk to the future residents incorporation of appropriate ventilation design features to mitigate health risk would be required.

Mitigation Measure AQ-1

A location-specific health risk assessment (HRA) shall be prepared by a qualified air quality specialist in accordance with the most recent Bay Area Air Quality Management District guidelines for modeling local risks and hazards. If the HRA indicates that the project would expose sensitive receptors to an unacceptable health risk from the project's proximity to State Route 130, then mitigation (such as incorporating HVAC systems with high efficiency DPFs or MERV-13 filters into the ventilation design, weatherproofing windows and doors, installation of passive electrostatic filtering systems, and adoption of a maintenance plan for the HVAC and air filtration systems) that reduces health risk below standards recommended by the Bay Area Air Quality Management District shall be incorporated into the development prior to permit issuance.

Significance After Mitigation

Preparation of a HRA under Mitigation Measure AQ-1 would first involve refined modeling specific to the project to determine the level of health risk. Because BAAQMD's screening tools represent a reasonable maximum exposure assumption, it is possible that the results of a site specific HRA would not show the project to exceed the applicable thresholds and the additional ventilation measures discussed above would not be necessary. However, if the HRA determines that the project

would expose sensitive receptors to an unacceptable health risk resulting from the project's proximity to SR 130, then Mitigation Measure AQ-1 would require the incorporation of measures to reduce residence exposure to TACs from indoor air into the development of the project such that health risk would be reduced to an acceptable level. Consequently, this impact would be less than significant with mitigation incorporated.

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

Impact AQ-4 THE PROJECT WOULD NOT GENERATE ODORS ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE DURING CONSTRUCTION OR OPERATION. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The project would generate oil and diesel fuel odors during construction from equipment use as well as odors related to asphalt paving. The odors would be limited to the construction period and would be temporary. With respect to operation, the BAAQMD's *CEQA Air Quality Guidelines* (2017) identifies land uses associated with odor complaints to include, but not limited to, wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. Residential uses are not identified on this list. Therefore, the proposed project would not generate objectionable odors affecting a substantial number of people, and impacts would be less than significant.

3 Greenhouse Gas Emissions

3.1 Environmental and Regulatory Setting

3.1.1 Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. The term "climate change" is often used interchangeably with the term "global warming," but climate change is preferred because it conveys that other changes are happening in addition to rising temperatures. The baseline against which these changes are measured originates in historical records that identify temperature changes that occurred in the past, such as during previous ice ages. The global climate is changing continuously, as evidenced in the geologic record which indicates repeated episodes of substantial warming and cooling. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming over the past 150 years. The United Nations Intergovernmental Panel on Climate Change (IPCC) expressed a high degree of confidence (95 percent or greater chance) that the global average net effect of human activities has been the dominant cause of warming since the mid-twentieth century (IPCC 2014).

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). The gases widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere, and natural processes, such as oceanic evaporation, largely determine its atmospheric concentrations.

GHGs are emitted by natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are usually by-products of fossil fuel combustion, and CH_4 results from off-gassing associated with agricultural practices and landfills. Human-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases and SF_6 (United States Environmental Protection Agency [U.S. EPA] 2019). Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO_2e), and is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 28, meaning its global warming effect is 28 times greater than carbon dioxide on a molecule per molecule basis (IPCC 2015).[7]

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat-trapping effect of GHGs, the earth's surface would be about 33° Celsius (°C) cooler

[7] The IPCC's (2015) *Fifth Assessment Report* determined that methane has a GWP of 28. However, modeling of GHG emissions was completed using the California Emissions Estimator Model version 2016.3.2, which uses a GWP of 25 for methane, consistent with the IPCC's (2007) *Fourth Assessment Report*.

(World Meteorological Organization 2020). However, emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, are believed to have elevated the concentration of these gases in the atmosphere beyond the level of concentrations that occur naturally.

3.1.2 Greenhouse Gas Emissions Inventory

Worldwide anthropogenic emissions of GHGs were approximately 46,000 million metric tons (MMT or gigaton) of CO_2e in 2010 (IPCC 2014). CO_2 emissions from fossil fuel combustion and industrial processes contributed about 65 percent of total emissions in 2010. Of anthropogenic GHGs, carbon dioxide was the most abundant, accounting for 76 percent of total 2010 emissions. Methane emissions accounted for 16 percent of the 2010 total, while N_2O and fluorinated gases account for 6 and 2 percent respectively (IPCC 2014).

Total United States (U.S.) GHG emissions were 6,456.7 MMT of CO_2e in 2017. Since 1990, total U.S. emissions have increased by an average annual rate of 0.04 percent for a total increase of 1.3 percent since 1990. However, emissions decreased by 0.5 percent from 2016 to 2017. The decrease from 2016 to 2017 was a result of multiple factors, including (1) a continued shift from coal to natural gas and other non-fossil fuel energy sources in the electric power sector and (2) milder weather in 2017 resulting in overall decreased electricity usage. In 2017, the industrial and transportation end-use sectors accounted for 30 percent and 29 percent, respectively, of GHG emissions while, the residential and commercial end-use sectors accounted for 15 percent and 16 percent of GHG emissions, respectively, with electricity emissions distributed among the various sectors (U.S. EPA 2019).

Based on the California Air Resource Board's (CARB) California Greenhouse Gas Inventory for 2000-2017, California produced 424.1 MMT of CO_2e in 2017. The major source of GHG emissions in California is transportation, contributing 41 percent of the state's total GHG emissions. The industrial sector is the second largest source, contributing 24 percent of the state's GHG emissions, and electric power accounts for approximately 15 percent (CARB 2019a). California emissions are due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions, as compared to other states, is its relatively mild climate. In 2016, the State of California achieved its 2020 GHG emission reduction targets as emissions fell below 431 MMT of CO_2e (CARB 2019a). The annual 2030 statewide target emissions level is 260 MMT of CO_2e (CARB 2017).

3.1.3 Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources though potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. Each of the past three decades has been warmer than all the previous decades in the instrumental record, and the decade from 2000 through 2010 has been the warmest. The observed global mean surface temperature (GMST) from 2015 to 2017 was approximately 1.0°C (1.8°F) higher than the average GMST over the period from 1880 to 1900 (National Oceanic and Atmospheric Administration 2019). Furthermore, several independently analyzed data records of global and regional Land-Surface Air Temperature (LSAT) obtained from station observations jointly indicate that LSAT and sea surface temperatures have increased. Due to past and current activities, anthropogenic GHG emissions are increasing global mean surface temperature at a rate of 0.2°C per

decade. In addition to these findings, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic over the past two decades (IPCC 2014 and 2018).

According to *California's Fourth Climate Change Assessment*, statewide temperatures from 1986 to 2016 were approximately 0.6 to 1.1°C higher than those recorded from 1901 to 1960. Potential impacts of climate change in California may include reduced water supply from snow pack, sea level rise, more extreme heat days per year, more large forest fires, and more drought years (State of California 2018). While there is growing scientific consensus about the possible effects of climate change at a global and statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. In addition to statewide projections, *California's Fourth Climate Change Assessment* includes regional reports that summarize climate impacts and adaptation solutions for nine regions of the state and regionally-specific climate change case studies (State of California 2018). A summary follows of some of the potential effects that could be experienced in California as a result of climate change.

Air Quality

Higher temperatures are conducive to air pollution formation and could worsen air quality in California as they rise. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. As temperatures have increased in recent years, the area burned by wildfires throughout the state has increased, and wildfires have occurred at higher elevations in the Sierra Nevada Mountains (State of California 2018). If higher temperatures continue to be accompanied by an increase in the incidence and extent of large wildfires, air quality would worsen, but if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution. This would effectively reduce the number of large wildfires, thereby ameliorating the pollution associated with them. Severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (California Natural Resources Agency 2009).

Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future precipitation trends and water supplies in California. Year-to-year variability in statewide precipitation levels has increased since 1980, meaning that wet and dry precipitation extremes have become more common (California Department of Water Resources 2018). This uncertainty regarding future precipitation trends complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The average early spring snowpack in the western U.S., including the Sierra Nevada Mountains, decreased by about 10 percent during the last century. During the same period, sea level rose over 0.15 meter along the central and southern California coasts (State of California 2018). The Sierra snowpack provides the majority of California's water supply, as snow that accumulates during wet winters is released slowly during the dry months of spring and summer. A warmer climate is predicted to reduce the fraction of precipitation that falls as snow and result in less snowfall at lower elevations, thereby reducing the total snowpack (State of California 2018). Projections indicate that average spring snowpack in the Sierra Nevada and

other mountain catchments in central and northern California will decline by approximately 66 percent from its historical average by 2050 (State of California 2018).

Hydrology and Sea Level Rise

Climate change could affect the intensity and frequency of storms and flooding (State of California 2018). Furthermore, climate change could induce substantial sea level rise in the coming century. Rising sea level increases the likelihood of and risk from flooding. The rate of increase of global mean sea levels over the 2001-2010 decade, observed by satellites, ocean buoys, and land gauges, was approximately 3.2 millimeters per year, double the twentieth century trend of 1.6 millimeters per year. Global mean sea levels averaged over the last decade were about 0.20 meter higher than those of 1880 (World Meteorological Organization 2013). Sea levels are rising faster now than in the previous two millennia, and the rise will probably accelerate, even with robust GHG emission control measures. The most recent IPCC report predicts a mean sea-level rise of 0.25 to 0.94 meter by 2100 (IPCC 2018). A rise in sea levels could erode 31 to 67 percent of southern California beaches and cause flooding of approximately 370 miles of coastal highways during 100-year storm events. This would also jeopardize California's water supply due to salt water intrusion and induce groundwater flooding and/or exposure of buried infrastructure (State of California 2018). Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture

California has a nearly $50 billion annual agricultural industry that produces over a third of the country's vegetables and two-thirds of the country's fruits and nuts (California Department of Food and Agriculture 2019). Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency, but if temperatures rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent. This would increase water demand as hotter conditions lead to the loss of soil moisture; crop-yield could be threatened by water-induced stress and extreme heat waves; and plants may be susceptible to new and changing pest and disease outbreaks (State of California 2018). Temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (California Climate Change Center 2006).

Ecosystems and Wildlife

Climate change and the potential resulting changes in weather patterns could have ecological effects on the global and local scales. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists project that the annual average maximum daily temperatures in California could rise by 2.4 to 3.2°C in the next 50 years and by 3.1 to 4.9°C in the next century (State of California 2018). Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: timing of ecological events; geographic distribution and range of species; species composition and the incidence of nonnative species within communities; and ecosystem processes, such as carbon cycling and storage (Parmesan 2006; State of California 2018).

3.1.4 Regulatory Setting

The following regulations address both climate change and GHG emissions.

Federal Regulations

The U.S. Supreme Court determined in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) that the U.S. EPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act. The U.S. EPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. In 2012, the U.S. EPA issued a Final Rule that established the GHG permitting thresholds that determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

In *Utility Air Regulatory Group v. Environmental Protection Agency* (134 S. Ct. 2427 [2014]), the U.S. Supreme Court held U.S. EPA may not treat GHGs as an air pollutant for purposes of determining whether a source can be considered a major source and be required to obtain a PSD or Title V permit. The Court also held that PSD permits otherwise required based on emissions of other pollutants, may continue to require limitations on GHG emissions based on the application of Best Available Control Technology.

State Regulations

The State of California considers GHG emissions and the impacts of climate change to be a serious threat to the public health, environment, economic well-being, and natural resources of California and has taken an aggressive stance to mitigate the State's impact on climate change through the adoption of policies and legislation. CARB is responsible for the coordination and oversight of state and local air pollution control programs in California. California has a numerous regulation aimed at reducing the state's GHG emissions. Some of the major initiatives are summarized below.

Assembly Bill 32

California's major initiative for reducing GHG emissions is outlined in Assembly Bill (AB) 32, the "California Global Warming Solutions Act of 2006," which was signed into law in 2006. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 limit of 427 MMT CO_2e. The Scoping Plan was approved by CARB on December 11, 2008 and included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since approval of the Scoping Plan.

In May 2014, CARB approved the first update to the AB 32 Scoping Plan. The 2013 Scoping Plan update defined CARB's climate change priorities for the next five years and set the groundwork to reach post-2020 statewide goals. The update highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the State's longer-term GHG reduction strategies with other State policy

priorities, including those for water, waste, natural resources, clean energy, transportation, and land use (CARB 2014).

Senate Bill 375

Senate Bill (SB) 375, signed in August 2008, enhances the State's ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles for 2020 and 2035. In addition, SB 375 directs each of the state's 18 major Metropolitan Planning Organizations (MPO) to prepare a "sustainable communities' strategy" (SCS) that contains a growth strategy to meet these emission targets for inclusion in the Regional Transportation Plan (RTP). On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. SB 375 also provides the option for the coordinated development of subregional plans by the subregional councils of governments and the county transportation commissions to meet SB 375 requirements.

Senate Bill 97

SB 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in CEQA documents. In March 2010, the California Natural Resources Agency adopted amendments to the *CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and climate change impacts.

Senate Bill 1383

Adopted in September 2016, SB 1383 requires CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. The bill requires the strategy to achieve the following reduction targets by 2030:

- Methane – 40 percent below 2013 levels
- Hydrofluorocarbons – 40 percent below 2013 levels
- Anthropogenic black carbon – 50 percent below 2013 levels

The bill also requires the California Department of Resources Recycling and Recovery, in consultation with CARB, to adopt regulations that achieve specified targets for reducing organic waste in landfills.

Senate Bill 32

On September 8, 2016, the governor signed SB 32 into law, extending AB 32 by requiring the State to further reduce GHGs to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently adopted policies and policies, such as SB 1383. The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally-appropriate quantitative thresholds consistent with statewide per capita goals of six metric tons (MT) of CO_2e by 2030 and two MT of CO_2e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level

analyses (city, county, subregional, or regional level), but not for specific individual projects because they include all emissions sectors in the state (CARB 2017).

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard (RPS) Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 44 percent by 2024, 60 percent by 2030, and 100 percent by 2045.

Executive Order B-55-18

On September 10, 2018, the governor issued Executive Order B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100. EO B-55-18 also tasks CARB with including a pathway toward the EO B-55-18 carbon neutrality goal in the next Scoping Plan update.

California Environmental Quality Act

Pursuant to the requirements of SB 97, the California Natural Resources Agency has adopted amendments to the *CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted *CEQA Guidelines* provide general regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts.

For more information on Senate and Assembly bills, Executive Orders, and reports discussed above, and to view reports and research referenced above, please refer to www.climatechange.ca.gov and www.arb.ca.gov/cc/cc.htm.

Regional/Local Regulations

Plan Bay Area

Plan Bay Area 2040 is a state-mandated, integrated long-range transportation, land-use, and housing plan that would support a growing economy, provide more housing and transportation choices and reduce transportation-related pollution in the nine-county San Francisco Bay Area (Association of Bay Area Governments [ABAG] 2017). The Sustainable Community Strategy (SCS) builds on earlier efforts to develop an efficient transportation network and grow in a financially and environmentally responsible way. Plan Bay Area 2040 would be updated every four years to reflect new priorities. A goal of the SCS is to "reduce vehicles miles traveled (VMT) per capita by 10 percent" (ABAG 2017).

City of San José Green Building Policy

Under the City's Green Building Policy, all private sector and municipal building projects constructing or adding more than 10,000 square feet of occupied space (as defined in the adopting building code) are required to be designed and constructed to achieve, at a minimum, the United States Green Building Council's Leadership in Energy and Environmental Design (LEED ™) rating system Silver-level certification with a goal of reaching LEED Gold or Platinum levels.

Climate Smart San José

Climate Smart San José builds upon the 2007 Green Vision, encouraging the entire San José community to join an ambitious campaign to reduce greenhouse gas emissions, save water and improve quality of life. The plan focuses on energy, mobility, and water to achieve its climate goals in the City.[8]

San José's Reach Code

The City Council approved Ordinance No. 30311 in September 2019 to amend various sections of Title 24 of the City's Municipal Code to adopt provisions of the 2019 California Green Building Standards Code and California Building Energy Efficiency Standards with certain exceptions, modifications, and additions which serve as a Reach Code to increase building efficiency, mandate solar readiness and increase requirements related to electric vehicle charging stations. The Reach Code went into effect on January 1, 2020 and affects all new construction.

3.2 Impact Analysis

3.2.1 Methodology

Calculations of CO_2, CH_4, and N_2O emissions are provided to identify the magnitude of potential project effects. The analysis focuses on CO_2, CH_4, and N_2O because these make up 98 percent of all GHG emissions by volume and are the GHG emissions the project would emit in the largest quantities (IPCC 2014). Fluorinated gases, such as HFCs, PFCs, and SF_6, were also considered for the analysis. However, because the project is a residential development, the quantity of fluorinated gases would not be significant since fluorinated gases are primarily associated with industrial processes. Emissions of all GHGs are converted into their equivalent GWP in terms of CO_2 (CO_2e). Minimal amounts of other GHGs (such as chlorofluorocarbons [CFCs]) would be emitted; however, these other GHG emissions would not substantially add to the total calculated CO_2e amounts. Calculations are based on the methodologies discussed in the California Air Pollution Control Officers Association (CAPCOA) CEQA and Climate Change white paper (CAPCOA 2008).

GHG emissions associated with the proposed project were calculated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 (see Appendix B for calculations). In order to provide an accurate comparison to GHG emissions thresholds established in accordance with the statewide 2030 emissions reduction target, annual GHG emissions were modeled for a 2030 project operation year.

Construction Emissions

Construction activities emit GHGs primarily though combustion of fuels (mostly diesel) in the engines of off-road construction equipment and in on-road construction vehicles and in the commute vehicles of the construction workers. Smaller amounts of GHGs are emitted indirectly through the energy required for water used for fugitive dust control and lighting for the construction activity. Every phase of the construction process, including demolition, grading, paving, and building, emits GHG emissions in volumes proportional to the quantity and type of construction

[8] The City is currently in the process of completing an update to the GHG Reduction Strategy which will expand on Climate Smart San José, in response to Senate Bill 32, which required GHG emissions to be reduced by 40 percent below 1990 levels by 2030.

equipment used. Heavier equipment typically emits more GHGs per hour than does lighter equipment because of its engine design and greater fuel consumption.

Operational Emissions

Area Source Emissions

Emissions associated with area sources, including consumer products, landscape maintenance, and architectural coating, were calculated in CalEEMod and utilize standard emission rates from CARB, USEPA, and emission factor values provided by the local air district. Low VOC paint for architectural coating will be implemented to mitigate area source emissions.

Water and Wastewater Emissions

Water used and wastewater generated by a project generate indirect GHG emissions. These emissions are a result of the energy used to supply, convey, and treat water and wastewater. In addition to the indirect GHG emissions associated with energy use, the wastewater treatment process itself can directly emit both CH_4 and N_2O.

The indoor and outdoor water use consumption data for each land use subtype comes from the Pacific Institute's *Waste Not, Want Not: The Potential for Urban Water Conservation in California* (2003).[9] Based on that report, a percentage of total water consumption was dedicated to landscape irrigation, which is used to determine outdoor water use. Wastewater generation was similarly based on a reported percentage of total indoor water use.

New development would be subject to CALGreen, which requires a 20 percent increase in indoor water use efficiency. Thus, in order to account for compliance with CALGreen, a 20 percent reduction in indoor water use was included in the water consumption calculations for new development. In addition to water reductions associated with building code compliance the GHG emissions from the energy used to transport the water for both existing and new development account for compliance with the RPS as discussed under "Energy Emissions".

Solid Waste Emissions

The disposal of solid waste produces GHG emissions from the transportation of waste, anaerobic decomposition in landfills, and incineration. To calculate the GHG emissions generated by solid waste disposal, the total volume of solid waste was calculated using waste disposal rates identified by the California Department of Resources Recycling and Recovery (CalRecycle). The methods for quantifying GHG emissions from solid waste are based on the IPCC method, using the degradable organic content of waste. GHG emissions associated with the project's waste disposal were calculated using these parameters.

Energy Use Emissions

GHGs are emitted on-site during the combustion of natural gas for space and water heating and off-site during the generation of electricity from fossil fuels in power plants. CalEEMod estimates GHG emissions from energy use by multiplying average rates of residential and non-residential energy consumption by the quantities of residential units and non-residential square footage entered in the

[9] California Emissions Estimator Model, User Guide, Appendix D http://www.caleemod.com/

land use module to obtain total projected energy use. This value is then multiplied by electricity and natural gas GHG emission factors applicable to the project location and utility provider.

Building energy use is typically divided into energy consumed by the built environment and energy consumed by uses that are independent of the building, such as plug-in appliances. Non-building energy use, or "plug-in energy use," can be further subdivided by specific end-use (refrigeration, cooking, office equipment, etc.). In California, Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting.

Electricity emissions are calculated by multiplying the energy use times the carbon intensity of the utility district per kilowatt hour (CAPCOA 2017). In February 2019, the City of San José launched San José Clean Energy (SJCE), a community choice aggregate program providing carbon-free electricity to municipal customers, residents and businesses in the City of San José. Electricity provided to customers by SJCE is transferred and delivered using existing Pacific Gas and Electric (PG&E) infrastructure. Electricity service at the project site would be provided by SJCE. Therefore, SJCE's specific energy intensity factors (i.e., the amount of CO_2, CH_4, and N_2O per kilowatt-hour) are used in the calculations of GHG emissions. The energy intensity factors included in CalEEMod are based on 2012 data by default. Per SB 100, the statewide Renewable Portfolio Standard (RPS) Program requires electricity providers to increase procurement from eligible renewable energy sources to 60 percent by 2030. To account for the continuing effects of the RPS, the energy intensity factors included in CalEEMod were reduced based on the percentage of renewables reported by SJCE. SJCE energy intensity factors that include this reduction are shown in Appendix B.

Mobile

For mobile sources, CO_2, and CH_4 emissions were quantified in CalEEMod based on trip generation rates provided by Hexagon Transportation Consultants, Inc. (Hexagon 2020). To calculate mobile source emissions, CalEEMod used CO_2 emission factors from the EMFAC2014 Emissions Inventory based on the aggregated model year and aggregated speed for Santa Clara County and CH_4 emission factors provided by CARB for year 2030 (CAPCOA 2017, Appendix A). Because CalEEMod does not calculate N_2O emissions from mobile sources, N_2O emissions were quantified using guidance from CARB and the EMFAC2017 Emissions Inventory for the Santa Clara County region for the year 2030 (the next State milestone target year for GHG emission reductions) using the EMFAC2011 categories (CARB 2018 and 2019b; see Appendix B for calculations).

Service Population

As a mixed-use project the service population is equal to the number of residents and employees accommodated by the project. According to the California State Department of Finance (2020), the average household size in San José is 3.19 persons. Based on the average household size, the proposed project would accommodate approximately 619 persons (194 units x 3.19 persons/unit). The proposed 3,000 square feet of commercial space would also generate employment. According to the report *Building San José's Future: Jobs, Land Use, and Fiscal Issues in Key Employment Areas, 2000 – 2020*, employment forecasts for retail in San José use an employment density factor of 500 square feet per employee (City of San José 2004). Therefore, the project would be expected to generate approximately six employees, resulting in a total service population of 625 persons. To compare the estimated project emissions to the applicable, project-specific efficiency threshold (see Section 3.2.2, *Significance Thresholds*), the project's per person GHG emissions were calculated by dividing total GHG emissions by the project's service population.

3.2.2 Significance Thresholds

To determine whether a project would result in a significant impact related to GHG emissions, Appendix G of the *CEQA Guidelines* requires consideration of whether a project would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The majority of individual projects do not generate sufficient GHG emissions to create significant project-specific environment effects. However, the environmental effects of a project's GHG emissions can contribute incrementally to cumulative environmental effects that are significant, contributing to climate change, even if an individual project's environmental effects are limited (CEQA Guidelines Section 15064[h][1]). The issue of a project's environmental effects and contribution towards climate change typically involves an analysis of whether or not a project's contribution towards climate change is cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, §15064[h][1]).

Section 15064.4 of the *CEQA Guidelines* recommends that lead agencies quantify GHG emissions of projects and consider several other factors that may be used in the determination of significance of GHG emissions from a project, including the extent to which the project may increase or reduce GHG emissions; whether a project exceeds an applicable significance threshold; and the extent to which the project complies with regulations or requirements adopted to implement a plan for the reduction or mitigation of GHG emissions.

CEQA Guidelines Section 15064.4 does not establish a threshold of significance. Lead agencies have the discretion to establish significance thresholds for their respective jurisdictions, and in establishing those thresholds, a lead agency may appropriately look to thresholds developed by other public agencies, or suggested by other experts, as long as any threshold chosen is supported by substantial evidence (CEQA Guidelines Section 15064.7[c]).

According to CEQA Guidelines Section 15183.5, projects can tier off of a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the project's consistency with the GHG reduction policies included in a qualified GHG reduction plan. This approach is considered by the Association of Environmental Professionals (AEP) in their white paper, *Beyond Newhall and 2020*, to be the most defensible approach presently available under CEQA to determine the significance of a project's GHG emissions (AEP 2016). However, although the City's CAP provides emission reduction measures to reduce GHG emissions through year 2020, it does not include goals or emission reduction measures to meet the State's SB 32 target by 2030.

According to the BAAQMD *CEQA Air Quality Guidelines* (2017c), an efficiency threshold of 4.6 MT CO_2e per service population per year is appropriate for mixed-use projects that include both residential and non-residential land uses. Therefore, this approach is appropriate for the project, which includes both residential housing and approximately 3,000 square feet of commercial space. Although the BAAQMD has not yet quantified a threshold for 2030, reduction of the 4.6 MT CO_2e per service population per year threshold by 40 percent to 2.76 MT CO_2e per service population per year would be consistent with the State reduction target established in SB 32. As such, the adjusted service population threshold of 2.76 MT CO_2e per service population is the most appropriate

threshold for the project. Additionally, this analysis qualitatively assesses consistency with local and statewide GHG reduction regulations.

Local Thresholds

The City of San José adopted a GHG Reduction Strategy in conjunction with the Envision San José 2040 General Plan Update and consistent with the implementation requirements of AB 32. The Strategy was adopted by the City Council on November 1, 2011 as an appendix to the General Plan; it was updated in December 2015. The Strategy establishes mandatory and voluntary GHG reduction measures. Voluntary measures could be incorporated as mitigation measures for proposed projects, at the City's discretion. Applicable mandatory reduction measures include the following:

- Comply with the City Green Building Policy
- Develop green buildings
- Increase density of development
- Increase location efficiency
- Provide bike parking in residential projects

Construction Emissions

Construction of the project would generate temporary GHG emissions from the operation of construction equipment on-site, from vehicles transporting construction workers to and from the project site, and from the use of heavy trucks to export earth materials offsite. Site preparation and grading typically generate the greatest amount of emissions due to the use of grading equipment and soil hauling equipment. CalEEMod provides an estimate of emissions associated with the construction period, based on parameters such as duration of construction activity, area of disturbance, and types of equipment used during construction.

Neither the City nor BAAQMD have an adopted threshold of significance for construction related GHG emissions, although the BAAQMD recommends quantifying emissions and disclosing GHG construction emissions. This analysis presents total construction-related GHG emissions for information purposes.

3.2.3 Project Impacts

Threshold 1:	Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact GHG-1 THE PROPOSED PROJECT WOULD GENERATE TEMPORARY AND LONG-TERM INCREASES IN GHG EMISSIONS, BUT SUCH EMISSIONS WOULD REMAIN BELOW THE ADJUSTED BAAQMD EFFICIENCY THRESHOLD INTENDED TO DEMONSTRATE CONSISTENCY WITH THE 2030 STATEWIDE GHG REDUCTION TARGET. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Construction Emissions

Project-related construction emissions are confined to a relatively short period in relation to the overall life of the project. As described under section 3.2.2, *Significance Thresholds*, neither the City nor BAAQMD have adopted a threshold of significance for construction-related GHG emissions. However, the BAAQMD recommends quantifying and disclosing GHG construction emissions.

Therefore, construction-related GHG emissions were quantified for informational purposes. Table 7 shows that project construction would result in a total of approximately 585 MT CO_2e.

Table 7 Estimated Construction GHG Emissions

Construction	Project Emissions MT CO_2e
2021	129.7
2022	455.3
Total	585

Source: Appendix B CalEEMod worksheets. Note modeling conservatively includes higher number of parking spaces from previous site plans.

Operational Emissions

Table 8 shows GHG emissions associated with operation of the proposed project. As shown therein, the project would generate approximately 1.5 MT of CO_2e per person per year, which would not exceed the adjusted BAAQMD efficiency threshold of 2.76 MT of CO_2e per person per year. Therefore, impacts would be less than significant.

Table 8 Combined Annual Emissions

Emission Source	Project Emissions (MT of CO_2e)
Operational	
Area	2.4
Energy	178.5
Solid Waste	46.5
Water	19.9
Mobile	
CO_2 and CH_4	646.5
N_2O	17.3
Total Emissions	**911.1**
Service Population (Residents)	625
Emissions per Service Person	**1.5**
Adjusted BAAQMD Efficiency Threshold (per Service Person)	2.76
Exceeds Threshold?	No

MT = metric tons; CO_2e = carbon dioxide equivalents

Source: Appendices B CalEEMod worksheets. Note modeling conservatively includes higher number of parking spaces from previous site plans.

Threshold 2:	Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact GHG-2 THE PROPOSED PROJECT WOULD BE CONSISTENT WITH APPLICABLE PLANS AND POLICIES, INCLUDING PLAN BAY AREA 2040, THE CITY OF SAN JOSÉ GHG REDUCTION STRATEGY, AND CLIMATE SMART SAN JOSÉ. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The City of San José has an adopted GHG Reduction Strategy as an appendix to the Envision San José 2040 General Plan and recently adopted the Climate Smart San José that offers GHG reduction strategies only related to energy and mobility. The GHG reduction strategy includes mandatory measures for all projects and others that are voluntary and that could be incorporated as mitigation measures for proposed projects, at the discretion of the City. Table 9 shows that the project would be consistent with the goals, targets, and policies of Plan Bay Area 2040, the City of San José GHG Reduction Strategy, and the Climate Smart San José.

Table 9 Project Consistency with Plan Bay Area 2040, the City of San José GHG Reduction Strategy, and the *Climate Smart San José*

Goals, Targets, and Policies	Consistency
Plan Bay Area 2040	
Plan for housing sufficient to house 100% of the Bay Area's future workers and residents from all income levels, without displacing current low-income residents.	**Consistent** The project would be a compact infill development that would add 194 new residential units, 116 new parking spaces, and 3,000 square feet of commercial space on a largely undeveloped site surrounded by urban development. The project would accommodate future workers and residents by providing employment opportunities and in-fill housing. The project site does not currently provide housing and, therefore, would not displace current low-income residents. In addition, the project would be 100 percent affordable housing.
Preserve agriculture and open space by planning direct development within urban footprint	**Consistent** The project is a compact infill development located within a dense urban area of San José and is not on or adjacent to agricultural land.
City of San José GHG Reduction Strategy	
Compliance with the City Green Building Ordinance	**Consistent** The project would be required to comply with the City's Green Building Ordinance. The Green Building Ordinance requires all Tier 2 projects, such as the project, to receive a minimum green building certification of LEED Silver.
New construction must be developed as green buildings	**Consistent** The project would include the following green building features: ▪ Energy efficient appliances ▪ Southwest facing resident courtyards ▪ Bicycle racks and lockers ▪ Modular construction
Increased density of development	**Consistent** The project would be a compact infill development, based on CAPCOA guidelines (2010), and would include the construction of 194 residential units and 3,000 square feet of commercial space in a five-story building. Therefore, the project would add residences on site subject to the Green Building Codes.

Goals, Targets, and Policies	Consistency
Climate Smart Plan	
Complete Streets	**Consistent** The project location as infill development would encourage walkability and bicycling in the adjacent neighborhoods. Providing pedestrian friendly streets is codified under California's 2008 Complete Streets Act.
Densify land-use to make room for anticipated new residents	**Consistent** The project would be located on an undeveloped site used for storage and would therefore densify land use on the site and create housing for new residents.

Source: Metropolitan Transportation Commission and Association of Bay Area Governments 2017; City of San José 2018

As shown in Table 9, the project would be consistent with Plan Bay Area 2040, the City of San José GHG Reduction Strategy, and the Climate Smart Plan. According to the adjusted BAAQMD GHG significance thresholds, a project's GHG emissions would be less than significant if they are less than 2.76 MT of CO_2e per service population per year. As discussed under Impact GHG-1, the project would not conflict with the adjusted BAAQMD GHG threshold. Therefore, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, and this impact would be less than significant.

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Appendix A

Project Plans

VILLA DEL SOL MIXED-USE RESIDENTIAL
SAN JOSE, CA.

PROJECT DESCRIPTION

A 194 UNIT PROJECT CONSISTING OF A
5-STORY TYPE III-A MIXED-USE BUILDING ON TOP OF A
1-STORY TYPE I-A "PODIUM" PARKING STRUCTURE

GROSS LAND AREA:	1.49 ACRES
TOTAL UNITS:	194 UNITS
DENSITY:	130.20 DU/AC

EXISTING/PROPOSED USES

EXISTING USES:	COMMERCIAL
PROPOSED USES:	MIXED-USE RESIDENTIAL

UNIT SUMMARY

UNIT TYPE	UNIT	UNIT NET SQ. FT.	UNIT TOTALS	NET SQ. FT. TOTALS	UNIT TYPE TOTALS	UNIT %	UNIT TYPE %
STUDIO	S1	414	60	24,840	60	30.9%	31%
1 BED	A1	549	60	32,940	80	30.9%	41%
	A2	606	20	12,120		10.3%	
2 BED	B1	727	17	12,359	49	8.8%	25%
	B1-A	744	17	12,648		8.8%	
	B3	738	15	11,070		7.7%	
3 BED	C1	1,055	5	5,275	5	2.6%	3%
TOTALS				**111,252**	**194**	**100%**	**100%**

BUILDING SUMMARY

UNIT TYPE	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6	UNIT TOTAL
S1	0	12	12	12	12	12	60
A1	0	16	11	11	11	11	60
A2	0	4	4	4	4	4	20
B1	0	1	4	4	4	4	17
B1-A	0	1	4	4	4	4	17
B3	0	3	3	3	3	3	15
C1	0	1	1	1	1	1	5
TOTALS	**0**	**38**	**39**	**39**	**39**	**39**	**194**

PARKING SUMMARY

	REQUIRED RATIO	REQUIRED STALLS	PROVIDED STALLS
RESIDENT	0.5 RESIDENTIAL STALLS PER UNIT 0.5 X 194	**97**	**97**
RETAIL	1 STALL PER 250 SF OF RETAIL 1 X 3,650 / 250	**14**	**12**
REQUIRED STALL TOTALS		**111**	**109**

	PARKING STALL TYPE	REQUIRED RATIO	REQUIRED TOTALS	PROVIDED TOTALS
RESID.	STANDARD GARAGE STALLS	n/a	-	57
	GUEST STALLS	5% of total	5	5
	LEASING STALLS	1 per 25 stalls	3	3
	EVCS STALLS	10% of total	8	8
	ACCESSIBLE EVCS STALLS		1	1
	ACCESSIBLE STALLS	per Table 11B-208.2	6	2
	TANDEM STALLS	n/a	-	7
	STANDARD OPEN-AIR STALLS	n/a	-	14
	RESIDENTIAL STALL TOTALS	0.5 per 1 unit	**97**	**97**
RETAIL	STANDARD STALLS	n/a	-	8
	EVCS STALLS	10% of total	1	1
	ACCESSIBLE EVCS STALLS		1	1
	ACCESSIBLE STALLS	per Table 11B-208.2	1	
	USPS AND RIDESHARE STALLS	n/a	-	2
	RETAIL STALL TOTALS	1 per 200 SF	**14**	**12**
TOTAL STALLS			**111**	**109**

MOTORCYCLE PARKING

RESIENTIAL REQUIRED	1 STALL PER EVERY 4 UNITS 1 X 49	49
RETAIL REQUIRED	1 STALL PER EVERY 20 CAR STALLS 1 X (14/20)	1
REQUIRED STALL TOTALS		**50**
PROVIDED STALL TOTALS	RESIDENTIAL **22** RETAIL **2**	**24**

BICYCLE PARKING

RESIENTIAL REQUIRED (80% LONG-TERM, 20% SHORT-TERM)	1 STALL PER UNIT 1 X 194	194
RETAIL REQUIRED	1 STALL PER 3,000 SF 1 X (3650/3000)	1
REQUIRED STALL TOTALS		**195**
PROVIDED STALL TOTALS	RESIDENTIAL **194** RETAIL **1**	**195**

OPEN SPACE SUMMARY

REQUIRED COMMON OPEN SPACE	100 SF PER UNIT 100 X 194	19,400
REQUIRED PRIVATE OPEN SPACE	60 SF FOR 50% OF TOTAL UNITS 60 X 97	5,820
TOTAL REQUIRED OPEN SPACE		**25,220**

LOCATION	SQ. FT.
LEASING LOBBY	918
CLUB	800
FITNESS	546
GROUND FLOOR OPEN SPACE	1,057
COURTYARD 1	1,799
COURTYARD 2	2,293
COURTYARD 3	3,018
TOTAL COMMON OPEN SPACE PROVIDED	**10,431**
PRIVATE OPEN SPACE PROVIDED	1,659
TOTAL OPEN SPACE PROVIDED	**12,090**

THE PACIFIC COMPANIES
430 EAST STATE ST., SUITE 100, EAGLE, ID 83616
(208) 461-0022

AO ARCHITECTS
144 NORTH ORANGE ST., ORANGE, CA 92866
(714) 639-9860

Architecture.
Design.
Relationships.

Appendix B

California Emissions Estimator Model Output

Villa Del Sol Mixed-Use Residential Project

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	127.00	Space	0.00	50,800.00	0
Apartments Mid Rise	194.00	Dwelling Unit	1.42	194,000.00	281
Strip Mall	3.00	1000sqft	0.07	3,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2023
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	172.75	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.002

1.3 User Entered Comments & Non-Default Data

Villa Del Sol Mixed-Use Residential Project - Bay Area AQMD Air District, Winter

Project Characteristics - To reflect SJCE, intensity factors were calculated by adusting PG&E levels from 33% to 45% elegibility renewals to SJCE

Land Use - Lot agerage 1.49 per site plans. 127 parking spaces - 11 for commerical and 116 for residential. Population 281 based on number of rooms

Construction Phase - Arch coating to occur half way through building cons. updated per applicant proivded schedule

Demolition - 65,342 sf demolished per applicant info

Grading - Per applicant supplied information. Demo export added as part of site prep. Site prep 807 CY export and grading 1511 CY export

Architectural Coating - Changed to 100 g/L per BAAQMD Rule 3

Vehicle Trips - Trip gen rates per Hexagon 2020. Apt. 5.44 and retail 37.75

Road Dust -

Woodstoves - No woodstoves or fireplaces per applicant supplied information

Area Coating - Updated to 100 g/L per BAAQMD Rule 3

Energy Use - Reduced Title 24 energy by 30% for commerical uses to 1.932 and 1.659

Water And Wastewater - Indoor water use reduced by 20% per 2016 Title 24 to 177774.05 for mall and 9,642,795.79 for residential

Construction Off-road Equipment Mitigation - Water 2 times daily and 15 mph vehicle speed per San Jose Standar Condition of Approval

Mobile Land Use Mitigation - Nearest transit 0.07 mile, all units below market rate, 100% below market rate housing

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	100.00
tblArchitecturalCoating	EF_Parking	150.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	100
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	2.00	12.00
tblConstructionPhase	NumDays	4.00	43.00

tblConstructionPhase	NumDays	200.00	250.00
tblConstructionPhase	NumDays	10.00	125.00
tblConstructionPhase	NumDays	10.00	20.00
tblEnergyUse	T24E	2.76	1.93
tblEnergyUse	T24NG	2.37	1.66
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	29.10	0.00
tblFireplaces	NumberNoFireplace	7.76	0.00
tblFireplaces	NumberWood	32.98	0.00
tblGrading	AcresOfGrading	16.13	1.50
tblGrading	AcresOfGrading	6.00	1.00
tblGrading	MaterialExported	0.00	1,511.00
tblGrading	MaterialExported	0.00	807.00
tblGrading	MaterialSiltContent	6.90	4.30
tblGrading	MeanVehicleSpeed	7.10	40.00
tblLandUse	LotAcreage	1.14	0.00
tblLandUse	LotAcreage	5.11	1.42
tblLandUse	Population	555.00	281.00
tblProjectCharacteristics	CH4IntensityFactor	0	0.022
tblProjectCharacteristics	CO2IntensityFactor	0	172.75
tblProjectCharacteristics	N2OIntensityFactor	0	0.002
tblVehicleTrips	ST_TR	6.39	5.44
tblVehicleTrips	ST_TR	42.04	37.75
tblVehicleTrips	SU_TR	5.86	5.44
tblVehicleTrips	SU_TR	20.43	37.75

tblVehicleTrips	WD_TR	6.65	5.44
tblVehicleTrips	WD_TR	44.32	37.75
tblWater	IndoorWaterUseRate	12,639,880.97	9,642,795.79
tblWater	IndoorWaterUseRate	222,217.56	177,774.05
tblWater	OutdoorWaterUseRate	7,968,620.61	7,598,942.34
tblWoodstoves	NumberCatalytic	3.88	0.00
tblWoodstoves	NumberNoncatalytic	3.88	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.4629	22.9437	17.4626	0.0419	5.6177	1.0516	6.3906	2.5257	0.9817	3.1312	0.0000	4,027.9508	4,027.9508	0.6480	0.0000	4,038.6515
2022	22.3199	17.2757	19.4211	0.0466	1.7967	0.6864	2.4832	0.4812	0.6654	1.1465	0.0000	4,482.9241	4,482.9241	0.4382	0.0000	4,493.8655
Maximum	**22.3199**	**22.9437**	**19.4211**	**0.0466**	**5.6177**	**1.0516**	**6.3906**	**2.5257**	**0.9817**	**3.1312**	**0.0000**	**4,482.9241**	**4,482.9241**	**0.6480**	**0.0000**	**4,493.8655**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.4629	22.9437	17.4626	0.0419	2.6450	1.0516	3.4179	1.1577	0.9817	1.8320	0.0000	4,027.9508	4,027.9508	0.6480	0.0000	4,038.6515
2022	22.3199	17.2757	19.4211	0.0466	1.7967	0.6864	2.4832	0.4812	0.6654	1.1465	0.0000	4,482.9241	4,482.9241	0.4382	0.0000	4,493.8655
Maximum	**22.3199**	**22.9437**	**19.4211**	**0.0466**	**2.6450**	**1.0516**	**3.4179**	**1.1577**	**0.9817**	**1.8320**	**0.0000**	**4,482.9241**	**4,482.9241**	**0.6480**	**0.0000**	**4,493.8655**

	ROG	NOx	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**	**40.09**	**0.00**	**33.50**	**45.50**	**0.00**	**30.37**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.3940	0.1847	16.0221	8.5000e-004		0.0887	0.0887		0.0887	0.0887	0.0000	28.8476	28.8476	0.0278	0.0000	29.5423
Energy	0.0497	0.4245	0.1812	2.7100e-003		0.0343	0.0343		0.0343	0.0343		541.8319	541.8319	0.0104	9.9300e-003	545.0517
Mobile	1.4291	6.4855	16.9620	0.0593	5.5486	0.0493	5.5979	1.4844	0.0460	1.5304		6,004.4665	6,004.4665	0.2173		6,009.8986
Total	**6.8727**	**7.0947**	**33.1653**	**0.0629**	**5.5486**	**0.1723**	**5.7209**	**1.4844**	**0.1690**	**1.6534**	**0.0000**	**6,575.1459**	**6,575.1459**	**0.2555**	**9.9300e-003**	**6,584.4926**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.3940	0.1847	16.0221	8.5000e-004		0.0887	0.0887		0.0887	0.0887	0.0000	28.8476	28.8476	0.0278	0.0000	29.5423
Energy	0.0497	0.4245	0.1812	2.7100e-003		0.0343	0.0343		0.0343	0.0343		541.8319	541.8319	0.0104	9.9300e-003	545.0517
Mobile	1.3012	5.6790	13.9686	0.0454	4.1418	0.0385	4.1802	1.1080	0.0359	1.1439		4,595.0564	4,595.0564	0.1787		4,599.5244
Total	**6.7448**	**6.2881**	**30.1718**	**0.0489**	**4.1418**	**0.1614**	**4.3032**	**1.1080**	**0.1589**	**1.2669**	**0.0000**	**5,165.7359**	**5,165.7359**	**0.2169**	**9.9300e-003**	**5,174.1184**

	ROG	NOx	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	1.86	11.37	9.03	22.16	25.35	6.29	24.78	25.35	6.00	23.38	0.00	21.44	21.44	15.10	0.00	21.42

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	8/2/2021	9/3/2021	5	25	
2	Site Preparation	Site Preparation	9/6/2021	9/21/2021	5	12	
3	Grading	Grading	10/1/2021	11/30/2021	5	43	
4	Building Construction	Building Construction	12/1/2021	11/15/2022	5	250	
5	Architectural Coating	Architectural Coating	7/4/2022	12/23/2022	5	125	
6	Paving	Paving	11/16/2022	12/13/2022	5	20	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 392,850; Residential Outdoor: 130,950; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped Parking Area: 3,048 (Architectural Coating – sqft)

OffRoad Equipment

Villa Del Sol Mixed-Use Residential Project - Bay Area AQMD Air District, Winter

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
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
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	6.00	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	8.00	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	0.00	297.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	101.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	189.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	162.00	30.00	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
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	32.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved 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	lb/day										lb/day					
Fugitive Dust					2.5728	0.0000	2.5728	0.3895	0.0000	0.3895			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715		2,322.7171	2,322.7171	0.5940		2,337.5658
Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**2.5728**	**1.0409**	**3.6137**	**0.3895**	**0.9715**	**1.3610**		**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0950	3.2170	0.7114	9.1600e-003	0.2076	0.0100	0.2176	0.0569	9.6000e-003	0.0665		980.9442	980.9442	0.0519		982.2421
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0443	0.0302	0.2988	9.5000e-004	0.1068	6.7000e-004	0.1075	0.0283	6.2000e-004	0.0290		94.8398	94.8398	2.1500e-003		94.8934
Total	**0.1393**	**3.2471**	**1.0101**	**0.0101**	**0.3143**	**0.0107**	**0.3251**	**0.0852**	**0.0102**	**0.0954**		**1,075.7839**	**1,075.7839**	**0.0541**		**1,077.1355**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1578	0.0000	1.1578	0.1753	0.0000	0.1753			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715	0.0000	2,322.7171	2,322.7171	0.5940		2,337.5658
Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**1.1578**	**1.0409**	**2.1987**	**0.1753**	**0.9715**	**1.1468**	**0.0000**	**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0950	3.2170	0.7114	9.1600e-003	0.2076	0.0100	0.2176	0.0569	9.6000e-003	0.0665		980.9442	980.9442	0.0519		982.2421
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0443	0.0302	0.2988	9.5000e-004	0.1068	6.7000e-004	0.1075	0.0283	6.2000e-004	0.0290		94.8398	94.8398	2.1500e-003		94.8934
Total	**0.1393**	**3.2471**	**1.0101**	**0.0101**	**0.3143**	**0.0107**	**0.3251**	**0.0852**	**0.0102**	**0.0954**		**1,075.7839**	**1,075.7839**	**0.0541**		**1,077.1355**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.4049	0.0000	5.4049	2.3622	0.0000	2.3622			0.0000			0.0000
Off-Road	1.5558	17.4203	7.5605	0.0172		0.7654	0.7654		0.7041	0.7041		1,666.5174	1,666.5174	0.5390		1,679.9920
Total	**1.5558**	**17.4203**	**7.5605**	**0.0172**	**5.4049**	**0.7654**	**6.1703**	**2.3622**	**0.7041**	**3.0663**		**1,666.5174**	**1,666.5174**	**0.5390**		**1,679.9920**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0673	2.2791	0.5040	6.4900e-003	0.1471	7.1100e-003	0.1542	0.0403	6.8000e-003	0.0471		694.9731	694.9731	0.0368		695.8927
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0273	0.0186	0.1839	5.9000e-004	0.0657	4.1000e-004	0.0661	0.0174	3.8000e-004	0.0178		58.3629	58.3629	1.3200e-003		58.3960
Total	**0.0946**	**2.2977**	**0.6878**	**7.0800e-003**	**0.2128**	**7.5200e-003**	**0.2203**	**0.0577**	**7.1800e-003**	**0.0649**		**753.3360**	**753.3360**	**0.0381**		**754.2886**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4322	0.0000	2.4322	1.0630	0.0000	1.0630			0.0000			0.0000
Off-Road	1.5558	17.4203	7.5605	0.0172		0.7654	0.7654		0.7041	0.7041	0.0000	1,666.5174	1,666.5174	0.5390		1,679.9920
Total	**1.5558**	**17.4203**	**7.5605**	**0.0172**	**2.4322**	**0.7654**	**3.1976**	**1.0630**	**0.7041**	**1.7671**	**0.0000**	**1,666.5174**	**1,666.5174**	**0.5390**		**1,679.9920**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0673	2.2791	0.5040	6.4900e-003	0.1471	7.1100e-003	0.1542	0.0403	6.8000e-003	0.0471		694.9731	694.9731	0.0368		695.8927
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0273	0.0186	0.1839	5.9000e-004	0.0657	4.1000e-004	0.0661	0.0174	3.8000e-004	0.0178		58.3629	58.3629	1.3200e-003		58.3960
Total	**0.0946**	**2.2977**	**0.6878**	**7.0800e-003**	**0.2128**	**7.5200e-003**	**0.2203**	**0.0577**	**7.1800e-003**	**0.0649**		**753.3360**	**753.3360**	**0.0381**		**754.2886**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5575	0.0000	4.5575	2.4873	0.0000	2.4873			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869		1,365.0648	1,365.0648	0.4415		1,376.1020
Total	**1.2884**	**14.3307**	**6.3314**	**0.0141**	**4.5575**	**0.6379**	**5.1954**	**2.4873**	**0.5869**	**3.0742**		**1,365.0648**	**1,365.0648**	**0.4415**		**1,376.1020**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0352	1.1902	0.2632	3.3900e-003	0.0768	3.7100e-003	0.0805	0.0210	3.5500e-003	0.0246		362.9286	362.9286	0.0192		363.4088
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0273	0.0186	0.1839	5.9000e-004	0.0657	4.1000e-004	0.0661	0.0174	3.8000e-004	0.0178		58.3629	58.3629	1.3200e-003		58.3960
Total	**0.0624**	**1.2088**	**0.4470**	**3.9800e-003**	**0.1425**	**4.1200e-003**	**0.1466**	**0.0385**	**3.9300e-003**	**0.0424**		**421.2915**	**421.2915**	**0.0205**		**421.8048**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0509	0.0000	2.0509	1.1193	0.0000	1.1193			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869	0.0000	1,365.0648	1,365.0648	0.4415		1,376.1020
Total	**1.2884**	**14.3307**	**6.3314**	**0.0141**	**2.0509**	**0.6379**	**2.6888**	**1.1193**	**0.5869**	**1.7062**	**0.0000**	**1,365.0648**	**1,365.0648**	**0.4415**		**1,376.1020**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0352	1.1902	0.2632	3.3900e-003	0.0768	3.7100e-003	0.0805	0.0210	3.5500e-003	0.0246		362.9286	362.9286	0.0192		363.4088
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0273	0.0186	0.1839	5.9000e-004	0.0657	4.1000e-004	0.0661	0.0174	3.8000e-004	0.0178		58.3629	58.3629	1.3200e-003		58.3960
Total	**0.0624**	**1.2088**	**0.4470**	**3.9800e-003**	**0.1425**	**4.1200e-003**	**0.1466**	**0.0385**	**3.9300e-003**	**0.0424**		**421.2915**	**421.2915**	**0.0205**		**421.8048**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**		**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.0986	3.1269	0.8403	7.9800e-003	0.2031	6.9500e-003	0.2100	0.0585	6.6500e-003	0.0651		844.8814	844.8814	0.0440		845.9819
Worker	0.5518	0.3760	3.7230	0.0119	1.3308	8.3700e-003	1.3392	0.3530	7.7100e-003	0.3607		1,181.8494	1,181.8494	0.0267		1,182.5179
Total	**0.6504**	**3.5029**	**4.5632**	**0.0198**	**1.5339**	**0.0153**	**1.5492**	**0.4115**	**0.0144**	**0.4258**		**2,026.7308**	**2,026.7308**	**0.0708**		**2,028.4998**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**	**0.0000**	**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.0986	3.1269	0.8403	7.9800e-003	0.2031	6.9500e-003	0.2100	0.0585	6.6500e-003	0.0651		844.8814	844.8814	0.0440		845.9819
Worker	0.5518	0.3760	3.7230	0.0119	1.3308	8.3700e-003	1.3392	0.3530	7.7100e-003	0.3607		1,181.8494	1,181.8494	0.0267		1,182.5179
Total	**0.6504**	**3.5029**	**4.5632**	**0.0198**	**1.5339**	**0.0153**	**1.5492**	**0.4115**	**0.0144**	**0.4258**		**2,026.7308**	**2,026.7308**	**0.0708**		**2,028.4998**

3.5 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	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**		**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0919	2.9604	0.7899	7.8900e-003	0.2031	6.0300e-003	0.2091	0.0585	5.7700e-003	0.0642		836.5167	836.5167	0.0421		837.5679
Worker	0.5150	0.3371	3.4164	0.0114	1.3308	8.1800e-003	1.3390	0.3530	7.5300e-003	0.3605		1,138.5231	1,138.5231	0.0239		1,139.1217
Total	**0.6069**	**3.2975**	**4.2063**	**0.0193**	**1.5339**	**0.0142**	**1.5481**	**0.4115**	**0.0133**	**0.4248**		**1,975.0398**	**1,975.0398**	**0.0660**		**1,976.6896**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**	**0.0000**	**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0919	2.9604	0.7899	7.8900e-003	0.2031	6.0300e-003	0.2091	0.0585	5.7700e-003	0.0642		836.5167	836.5167	0.0421		837.5679
Worker	0.5150	0.3371	3.4164	0.0114	1.3308	8.1800e-003	1.3390	0.3530	7.5300e-003	0.3605		1,138.5231	1,138.5231	0.0239		1,139.1217
Total	**0.6069**	**3.2975**	**4.2063**	**0.0193**	**1.5339**	**0.0142**	**1.5481**	**0.4115**	**0.0133**	**0.4248**		**1,975.0398**	**1,975.0398**	**0.0660**		**1,976.6896**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	19.7580					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**19.9625**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1017	0.0666	0.6748	2.2600e-003	0.2629	1.6200e-003	0.2645	0.0697	1.4900e-003	0.0712		224.8935	224.8935	4.7300e-003		225.0117
Total	**0.1017**	**0.0666**	**0.6748**	**2.2600e-003**	**0.2629**	**1.6200e-003**	**0.2645**	**0.0697**	**1.4900e-003**	**0.0712**		**224.8935**	**224.8935**	**4.7300e-003**		**225.0117**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	19.7580					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**19.9625**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1017	0.0666	0.6748	2.2600e-003	0.2629	1.6200e-003	0.2645	0.0697	1.4900e-003	0.0712		224.8935	224.8935	4.7300e-003		225.0117
Total	**0.1017**	**0.0666**	**0.6748**	**2.2600e-003**	**0.2629**	**1.6200e-003**	**0.2645**	**0.0697**	**1.4900e-003**	**0.0712**		**224.8935**	**224.8935**	**4.7300e-003**		**225.0117**

3.7 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**		**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

3.7 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0827	0.0541	0.5483	1.8300e-003	0.3992	1.3100e-003	0.4005	0.1022	1.2100e-003	0.1034		182.7259	182.7259	3.8400e-003		182.8220
Total	**0.0827**	**0.0541**	**0.5483**	**1.8300e-003**	**0.3992**	**1.3100e-003**	**0.4005**	**0.1022**	**1.2100e-003**	**0.1034**		**182.7259**	**182.7259**	**3.8400e-003**		**182.8220**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205	0.0000	1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**	**0.0000**	**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

3.7 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0827	0.0541	0.5483	1.8300e-003	0.3992	1.3100e-003	0.4005	0.1022	1.2100e-003	0.1034		182.7259	182.7259	3.8400e-003		182.8220
Total	**0.0827**	**0.0541**	**0.5483**	**1.8300e-003**	**0.3992**	**1.3100e-003**	**0.4005**	**0.1022**	**1.2100e-003**	**0.1034**		**182.7259**	**182.7259**	**3.8400e-003**		**182.8220**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

Integrate Below Market Rate Housing

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.3012	5.6790	13.9686	0.0454	4.1418	0.0385	4.1802	1.1080	0.0359	1.1439		4,595.0564	4,595.0564	0.1787		4,599.5244
Unmitigated	1.4291	6.4855	16.9620	0.0593	5.5486	0.0493	5.5979	1.4844	0.0460	1.5304		6,004.4665	6,004.4665	0.2173		6,009.8986

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,055.36	1,055.36	1055.36	2,437,467	1,819,466
Enclosed Parking Structure	0.00	0.00	0.00		
Strip Mall	113.25	113.25	113.25	174,409	130,189
Total	1,168.61	1,168.61	1,168.61	2,611,876	1,949,655

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	86	11	3
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Enclosed Parking Structure	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Strip Mall	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0497	0.4245	0.1812	2.7100e-003		0.0343	0.0343		0.0343	0.0343		541.8319	541.8319	0.0104	9.9300e-003	545.0517
NaturalGas Unmitigated	0.0497	0.4245	0.1812	2.7100e-003		0.0343	0.0343		0.0343	0.0343		541.8319	541.8319	0.0104	9.9300e-003	545.0517

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	4591.93	0.0495	0.4232	0.1801	2.7000e-003		0.0342	0.0342		0.0342	0.0342		540.2267	540.2267	0.0104	9.9000e-003	543.4370
Enclosed Parking Structure	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
Strip Mall	13.6438	1.5000e-004	1.3400e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6052	1.6052	3.0000e-005	3.0000e-005	1.6147
Total		**0.0497**	**0.4245**	**0.1812**	**2.7100e-003**		**0.0343**	**0.0343**		**0.0343**	**0.0343**		**541.8319**	**541.8319**	**0.0104**	**9.9300e-003**	**545.0517**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	4.59193	0.0495	0.4232	0.1801	2.7000e-003		0.0342	0.0342		0.0342	0.0342		540.2267	540.2267	0.0104	9.9000e-003	543.4370
Enclosed Parking Structure	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
Strip Mall	0.0136438	1.5000e-004	1.3400e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6052	1.6052	3.0000e-005	3.0000e-005	1.6147
Total		**0.0497**	**0.4245**	**0.1812**	**2.7100e-003**		**0.0343**	**0.0343**		**0.0343**	**0.0343**		**541.8319**	**541.8319**	**0.0104**	**9.9300e-003**	**545.0517**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.3940	0.1847	16.0221	8.5000e-004		0.0887	0.0887		0.0887	0.0887	0.0000	28.8476	28.8476	0.0278	0.0000	29.5423
Unmitigated	5.3940	0.1847	16.0221	8.5000e-004		0.0887	0.0887		0.0887	0.0887	0.0000	28.8476	28.8476	0.0278	0.0000	29.5423

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.2338					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	0.4835	0.1847	16.0221	8.5000e-004		0.0887	0.0887		0.0887	0.0887		28.8476	28.8476	0.0278		29.5423
Total	**5.3940**	**0.1847**	**16.0221**	**8.5000e-004**		**0.0887**	**0.0887**		**0.0887**	**0.0887**	**0.0000**	**28.8476**	**28.8476**	**0.0278**	**0.0000**	**29.5423**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.2338					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	0.4835	0.1847	16.0221	8.5000e-004		0.0887	0.0887		0.0887	0.0887		28.8476	28.8476	0.0278		29.5423
Total	**5.3940**	**0.1847**	**16.0221**	**8.5000e-004**		**0.0887**	**0.0887**		**0.0887**	**0.0887**	**0.0000**	**28.8476**	**28.8476**	**0.0278**	**0.0000**	**29.5423**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Villa Del Sol Mixed-Use Residential Project

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	127.00	Space	0.00	50,800.00	0
Apartments Mid Rise	194.00	Dwelling Unit	1.42	194,000.00	281
Strip Mall	3.00	1000sqft	0.07	3,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2023
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	172.75	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.002

1.3 User Entered Comments & Non-Default Data

Villa Del Sol Mixed-Use Residential Project - Bay Area AQMD Air District, Summer

Project Characteristics - To reflect SJCE, intensity factors were calculated by adusting PG&E levels from 33% to 45% elegibility renewals to SJCE

Land Use - Lot agerage 1.49 per site plans. 127 parking spaces - 11 for commerical and 116 for residential. Population 281 based on number of rooms

Construction Phase - Arch coating to occur half way through building cons. updated per applicant proivded schedule

Demolition - 65,342 sf demolished per applicant info

Grading - Per applicant supplied information. Demo export added as part of site prep. Site prep 807 CY export and grading 1511 CY export

Architectural Coating - Changed to 100 g/L per BAAQMD Rule 3

Vehicle Trips - Trip gen rates per Hexagon 2020. Apt. 5.44 and retail 37.75

Road Dust -

Woodstoves - No woodstoves or fireplaces per applicant supplied information

Area Coating - Updated to 100 g/L per BAAQMD Rule 3

Energy Use - Reduced Title 24 energy by 30% for commerical uses to 1.932 and 1.659

Water And Wastewater - Indoor water use reduced by 20% per 2016 Title 24 to 177774.05 for mall and 9,642,795.79 for residential

Construction Off-road Equipment Mitigation - Water 2 times daily and 15 mph vehicle speed per San Jose Standar Condition of Approval

Mobile Land Use Mitigation - Nearest transit 0.07 mile, all units below market rate, 100% below market rate housing

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	100.00
tblArchitecturalCoating	EF_Parking	150.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	100
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	2.00	12.00
tblConstructionPhase	NumDays	4.00	43.00

Villa Del Sol Mixed-Use Residential Project - Bay Area AQMD Air District, Summer

tblConstructionPhase	NumDays	200.00	250.00
tblConstructionPhase	NumDays	10.00	125.00
tblConstructionPhase	NumDays	10.00	20.00
tblEnergyUse	T24E	2.76	1.93
tblEnergyUse	T24NG	2.37	1.66
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	29.10	0.00
tblFireplaces	NumberNoFireplace	7.76	0.00
tblFireplaces	NumberWood	32.98	0.00
tblGrading	AcresOfGrading	16.13	1.50
tblGrading	AcresOfGrading	6.00	1.00
tblGrading	MaterialExported	0.00	1,511.00
tblGrading	MaterialExported	0.00	807.00
tblGrading	MaterialSiltContent	6.90	4.30
tblGrading	MeanVehicleSpeed	7.10	40.00
tblLandUse	LotAcreage	1.14	0.00
tblLandUse	LotAcreage	5.11	1.42
tblLandUse	Population	555.00	281.00
tblProjectCharacteristics	CH4IntensityFactor	0	0.022
tblProjectCharacteristics	CO2IntensityFactor	0	172.75
tblProjectCharacteristics	N2OIntensityFactor	0	0.002
tblVehicleTrips	ST_TR	6.39	5.44
tblVehicleTrips	ST_TR	42.04	37.75
tblVehicleTrips	SU_TR	5.86	5.44
tblVehicleTrips	SU_TR	20.43	37.75

tblVehicleTrips	WD_TR	6.65	5.44
tblVehicleTrips	WD_TR	44.32	37.75
tblWater	IndoorWaterUseRate	12,639,880.97	9,642,795.79
tblWater	IndoorWaterUseRate	222,217.56	177,774.05
tblWater	OutdoorWaterUseRate	7,968,620.61	7,598,942.34
tblWoodstoves	NumberCatalytic	3.88	0.00
tblWoodstoves	NumberNoncatalytic	3.88	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.4264	22.8645	17.6097	0.0431	5.6177	1.0514	6.3904	2.5257	0.9815	3.1311	0.0000	4,151.0701	4,151.0701	0.6458	0.0000	4,161.7359
2022	22.2786	17.1767	19.6185	0.0480	1.7967	0.6862	2.4830	0.4812	0.6652	1.1463	0.0000	4,621.4414	4,621.4414	0.4388	0.0000	4,632.3583
Maximum	**22.2786**	**22.8645**	**19.6185**	**0.0480**	**5.6177**	**1.0514**	**6.3904**	**2.5257**	**0.9815**	**3.1311**	**0.0000**	**4,621.4414**	**4,621.4414**	**0.6458**	**0.0000**	**4,632.3583**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.4264	22.8645	17.6097	0.0431	2.6450	1.0514	3.4177	1.1577	0.9815	1.8319	0.0000	4,151.0701	4,151.0701	0.6458	0.0000	4,161.7359
2022	22.2786	17.1767	19.6185	0.0480	1.7967	0.6862	2.4830	0.4812	0.6652	1.1463	0.0000	4,621.4414	4,621.4414	0.4388	0.0000	4,632.3583
Maximum	**22.2786**	**22.8645**	**19.6185**	**0.0480**	**2.6450**	**1.0514**	**3.4177**	**1.1577**	**0.9815**	**1.8319**	**0.0000**	**4,621.4414**	**4,621.4414**	**0.6458**	**0.0000**	**4,632.3583**

	ROG	NOx	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**	**40.09**	**0.00**	**33.50**	**45.50**	**0.00**	**30.37**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.3940	0.1847	16.0221	8.5000e-004		0.0887	0.0887		0.0887	0.0887	0.0000	28.8476	28.8476	0.0278	0.0000	29.5423
Energy	0.0497	0.4245	0.1812	2.7100e-003		0.0343	0.0343		0.0343	0.0343		541.8319	541.8319	0.0104	9.9300e-003	545.0517
Mobile	1.6632	6.1747	16.8328	0.0633	5.5486	0.0491	5.5976	1.4844	0.0458	1.5302		6,411.7129	6,411.7129	0.2131		6,417.0390
Total	**7.1068**	**6.7839**	**33.0361**	**0.0669**	**5.5486**	**0.1720**	**5.7206**	**1.4844**	**0.1688**	**1.6532**	**0.0000**	**6,982.3923**	**6,982.3923**	**0.2512**	**9.9300e-003**	**6,991.6330**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.3940	0.1847	16.0221	8.5000e-004		0.0887	0.0887		0.0887	0.0887	0.0000	28.8476	28.8476	0.0278	0.0000	29.5423
Energy	0.0497	0.4245	0.1812	2.7100e-003		0.0343	0.0343		0.0343	0.0343		541.8319	541.8319	0.0104	9.9300e-003	545.0517
Mobile	1.5335	5.4506	13.4684	0.0485	4.1418	0.0382	4.1800	1.1080	0.0357	1.1437		4,910.0295	4,910.0295	0.1727		4,914.3479
Total	**6.9771**	**6.0598**	**29.6717**	**0.0520**	**4.1418**	**0.1612**	**4.3030**	**1.1080**	**0.1586**	**1.2667**	**0.0000**	**5,480.7090**	**5,480.7090**	**0.2109**	**9.9300e-003**	**5,488.9419**

	ROG	NOx	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	1.82	10.67	10.18	22.21	25.35	6.30	24.78	25.35	6.01	23.38	0.00	21.51	21.51	16.05	0.00	21.49

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/2/2021	9/3/2021	5	25	
2	Site Preparation	Site Preparation	9/6/2021	9/21/2021	5	12	
3	Grading	Grading	10/1/2021	11/30/2021	5	43	
4	Building Construction	Building Construction	12/1/2021	11/15/2022	5	250	
5	Architectural Coating	Architectural Coating	7/4/2022	12/23/2022	5	125	
6	Paving	Paving	11/16/2022	12/13/2022	5	20	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 392,850; Residential Outdoor: 130,950; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped Parking Area: 3,048 (Architectural Coating – sqft)

OffRoad Equipment

Villa Del Sol Mixed-Use Residential Project - Bay Area AQMD Air District, Summer

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
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
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	6.00	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	8.00	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	0.00	297.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	101.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	189.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	162.00	30.00	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
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	32.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved 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	lb/day										lb/day					
Fugitive Dust					2.5728	0.0000	2.5728	0.3895	0.0000	0.3895			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715		2,322.7171	2,322.7171	0.5940		2,337.5658
Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**2.5728**	**1.0409**	**3.6137**	**0.3895**	**0.9715**	**1.3610**		**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0925	3.1434	0.6626	9.3200e-003	0.2076	9.8600e-003	0.2174	0.0569	9.4300e-003	0.0663		997.8127	997.8127	0.0495		999.0506
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0418	0.0244	0.3193	1.0300e-003	0.1068	6.7000e-004	0.1075	0.0283	6.2000e-004	0.0290		102.9547	102.9547	2.3000e-003		103.0123
Total	**0.1343**	**3.1679**	**0.9820**	**0.0104**	**0.3143**	**0.0105**	**0.3249**	**0.0852**	**0.0101**	**0.0953**		**1,100.7675**	**1,100.7675**	**0.0518**		**1,102.0629**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1578	0.0000	1.1578	0.1753	0.0000	0.1753			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715	0.0000	2,322.7171	2,322.7171	0.5940		2,337.5658
Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**1.1578**	**1.0409**	**2.1987**	**0.1753**	**0.9715**	**1.1468**	**0.0000**	**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0925	3.1434	0.6626	9.3200e-003	0.2076	9.8600e-003	0.2174	0.0569	9.4300e-003	0.0663		997.8127	997.8127	0.0495		999.0506
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0418	0.0244	0.3193	1.0300e-003	0.1068	6.7000e-004	0.1075	0.0283	6.2000e-004	0.0290		102.9547	102.9547	2.3000e-003		103.0123
Total	**0.1343**	**3.1679**	**0.9820**	**0.0104**	**0.3143**	**0.0105**	**0.3249**	**0.0852**	**0.0101**	**0.0953**		**1,100.7675**	**1,100.7675**	**0.0518**		**1,102.0629**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.4049	0.0000	5.4049	2.3622	0.0000	2.3622			0.0000			0.0000
Off-Road	1.5558	17.4203	7.5605	0.0172		0.7654	0.7654		0.7041	0.7041		1,666.5174	1,666.5174	0.5390		1,679.9920
Total	**1.5558**	**17.4203**	**7.5605**	**0.0172**	**5.4049**	**0.7654**	**6.1703**	**2.3622**	**0.7041**	**3.0663**		**1,666.5174**	**1,666.5174**	**0.5390**		**1,679.9920**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0656	2.2270	0.4695	6.6000e-003	0.1471	6.9800e-003	0.1540	0.0403	6.6800e-003	0.0470		706.9240	706.9240	0.0351		707.8010
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0257	0.0150	0.1965	6.4000e-004	0.0657	4.1000e-004	0.0661	0.0174	3.8000e-004	0.0178		63.3568	63.3568	1.4200e-003		63.3922
Total	**0.0913**	**2.2421**	**0.6660**	**7.2400e-003**	**0.2128**	**7.3900e-003**	**0.2202**	**0.0577**	**7.0600e-003**	**0.0648**		**770.2808**	**770.2808**	**0.0365**		**771.1932**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4322	0.0000	2.4322	1.0630	0.0000	1.0630			0.0000			0.0000
Off-Road	1.5558	17.4203	7.5605	0.0172		0.7654	0.7654		0.7041	0.7041	0.0000	1,666.5174	1,666.5174	0.5390		1,679.9920
Total	**1.5558**	**17.4203**	**7.5605**	**0.0172**	**2.4322**	**0.7654**	**3.1976**	**1.0630**	**0.7041**	**1.7671**	**0.0000**	**1,666.5174**	**1,666.5174**	**0.5390**		**1,679.9920**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0656	2.2270	0.4695	6.6000e-003	0.1471	6.9800e-003	0.1540	0.0403	6.6800e-003	0.0470		706.9240	706.9240	0.0351		707.8010
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0257	0.0150	0.1965	6.4000e-004	0.0657	4.1000e-004	0.0661	0.0174	3.8000e-004	0.0178		63.3568	63.3568	1.4200e-003		63.3922
Total	**0.0913**	**2.2421**	**0.6660**	**7.2400e-003**	**0.2128**	**7.3900e-003**	**0.2202**	**0.0577**	**7.0600e-003**	**0.0648**		**770.2808**	**770.2808**	**0.0365**		**771.1932**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5575	0.0000	4.5575	2.4873	0.0000	2.4873			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869		1,365.0648	1,365.0648	0.4415		1,376.1020
Total	**1.2884**	**14.3307**	**6.3314**	**0.0141**	**4.5575**	**0.6379**	**5.1954**	**2.4873**	**0.5869**	**3.0742**		**1,365.0648**	**1,365.0648**	**0.4415**		**1,376.1020**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0342	1.1630	0.2452	3.4500e-003	0.0768	3.6500e-003	0.0804	0.0210	3.4900e-003	0.0245		369.1696	369.1696	0.0183		369.6276
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0257	0.0150	0.1965	6.4000e-004	0.0657	4.1000e-004	0.0661	0.0174	3.8000e-004	0.0178		63.3568	63.3568	1.4200e-003		63.3922
Total	**0.0600**	**1.1780**	**0.4417**	**4.0900e-003**	**0.1425**	**4.0600e-003**	**0.1466**	**0.0385**	**3.8700e-003**	**0.0423**		**432.5264**	**432.5264**	**0.0197**		**433.0198**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0509	0.0000	2.0509	1.1193	0.0000	1.1193			0.0000			0.0000
Off-Road	1.2884	14.3307	6.3314	0.0141		0.6379	0.6379		0.5869	0.5869	0.0000	1,365.0648	1,365.0648	0.4415		1,376.1020
Total	**1.2884**	**14.3307**	**6.3314**	**0.0141**	**2.0509**	**0.6379**	**2.6888**	**1.1193**	**0.5869**	**1.7062**	**0.0000**	**1,365.0648**	**1,365.0648**	**0.4415**		**1,376.1020**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0342	1.1630	0.2452	3.4500e-003	0.0768	3.6500e-003	0.0804	0.0210	3.4900e-003	0.0245		369.1696	369.1696	0.0183		369.6276
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0257	0.0150	0.1965	6.4000e-004	0.0657	4.1000e-004	0.0661	0.0174	3.8000e-004	0.0178		63.3568	63.3568	1.4200e-003		63.3922
Total	**0.0600**	**1.1780**	**0.4417**	**4.0900e-003**	**0.1425**	**4.0600e-003**	**0.1466**	**0.0385**	**3.8700e-003**	**0.0423**		**432.5264**	**432.5264**	**0.0197**		**433.0198**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608		2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**		**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.0930	3.1002	0.7311	8.1800e-003	0.2031	6.7200e-003	0.2098	0.0585	6.4200e-003	0.0649		866.8756	866.8756	0.0407		867.8928
Worker	0.5209	0.3044	3.9792	0.0129	1.3308	8.3700e-003	1.3392	0.3530	7.7100e-003	0.3607		1,282.9744	1,282.9744	0.0287		1,283.6914
Total	**0.6139**	**3.4047**	**4.7103**	**0.0211**	**1.5339**	**0.0151**	**1.5490**	**0.4115**	**0.0141**	**0.4256**		**2,149.8501**	**2,149.8501**	**0.0694**		**2,151.5842**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8125	13.6361	12.8994	0.0221		0.6843	0.6843		0.6608	0.6608	0.0000	2,001.2200	2,001.2200	0.3573		2,010.1517
Total	**1.8125**	**13.6361**	**12.8994**	**0.0221**		**0.6843**	**0.6843**		**0.6608**	**0.6608**	**0.0000**	**2,001.2200**	**2,001.2200**	**0.3573**		**2,010.1517**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.0930	3.1002	0.7311	8.1800e-003	0.2031	6.7200e-003	0.2098	0.0585	6.4200e-003	0.0649		866.8756	866.8756	0.0407		867.8928
Worker	0.5209	0.3044	3.9792	0.0129	1.3308	8.3700e-003	1.3392	0.3530	7.7100e-003	0.3607		1,282.9744	1,282.9744	0.0287		1,283.6914
Total	**0.6139**	**3.4047**	**4.7103**	**0.0211**	**1.5339**	**0.0151**	**1.5490**	**0.4115**	**0.0141**	**0.4256**		**2,149.8501**	**2,149.8501**	**0.0694**		**2,151.5842**

3.5 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	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**		**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0868	2.9382	0.6875	8.1000e-003	0.2031	5.8200e-003	0.2089	0.0585	5.5700e-003	0.0640		858.4335	858.4335	0.0389		859.4060
Worker	0.4848	0.2730	3.6666	0.0124	1.3308	8.1800e-003	1.3390	0.3530	7.5300e-003	0.3605		1,235.8905	1,235.8905	0.0258		1,236.5344
Total	**0.5716**	**3.2113**	**4.3542**	**0.0205**	**1.5339**	**0.0140**	**1.5479**	**0.4115**	**0.0131**	**0.4246**		**2,094.3240**	**2,094.3240**	**0.0647**		**2,095.9404**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689	0.0000	2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**	**0.0000**	**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0868	2.9382	0.6875	8.1000e-003	0.2031	5.8200e-003	0.2089	0.0585	5.5700e-003	0.0640		858.4335	858.4335	0.0389		859.4060
Worker	0.4848	0.2730	3.6666	0.0124	1.3308	8.1800e-003	1.3390	0.3530	7.5300e-003	0.3605		1,235.8905	1,235.8905	0.0258		1,236.5344
Total	**0.5716**	**3.2113**	**4.3542**	**0.0205**	**1.5339**	**0.0140**	**1.5479**	**0.4115**	**0.0131**	**0.4246**		**2,094.3240**	**2,094.3240**	**0.0647**		**2,095.9404**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	19.7580					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**19.9625**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0958	0.0539	0.7243	2.4500e-003	0.2629	1.6200e-003	0.2645	0.0697	1.4900e-003	0.0712		244.1265	244.1265	5.0900e-003		244.2537
Total	**0.0958**	**0.0539**	**0.7243**	**2.4500e-003**	**0.2629**	**1.6200e-003**	**0.2645**	**0.0697**	**1.4900e-003**	**0.0712**		**244.1265**	**244.1265**	**5.0900e-003**		**244.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	19.7580					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**19.9625**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0958	0.0539	0.7243	2.4500e-003	0.2629	1.6200e-003	0.2645	0.0697	1.4900e-003	0.0712		244.1265	244.1265	5.0900e-003		244.2537
Total	**0.0958**	**0.0539**	**0.7243**	**2.4500e-003**	**0.2629**	**1.6200e-003**	**0.2645**	**0.0697**	**1.4900e-003**	**0.0712**		**244.1265**	**244.1265**	**5.0900e-003**		**244.2537**

3.7 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**		**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

3.7 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0778	0.0438	0.5885	1.9900e-003	0.3992	1.3100e-003	0.4005	0.1022	1.2100e-003	0.1034		198.3528	198.3528	4.1300e-003		198.4561
Total	**0.0778**	**0.0438**	**0.5885**	**1.9900e-003**	**0.3992**	**1.3100e-003**	**0.4005**	**0.1022**	**1.2100e-003**	**0.1034**		**198.3528**	**198.3528**	**4.1300e-003**		**198.4561**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205	0.0000	1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**	**0.0000**	**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

3.7 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0778	0.0438	0.5885	1.9900e-003	0.3992	1.3100e-003	0.4005	0.1022	1.2100e-003	0.1034		198.3528	198.3528	4.1300e-003		198.4561
Total	**0.0778**	**0.0438**	**0.5885**	**1.9900e-003**	**0.3992**	**1.3100e-003**	**0.4005**	**0.1022**	**1.2100e-003**	**0.1034**		**198.3528**	**198.3528**	**4.1300e-003**		**198.4561**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

Integrate Below Market Rate Housing

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.5335	5.4506	13.4684	0.0485	4.1418	0.0382	4.1800	1.1080	0.0357	1.1437		4,910.0295	4,910.0295	0.1727		4,914.3479
Unmitigated	1.6632	6.1747	16.8328	0.0633	5.5486	0.0491	5.5976	1.4844	0.0458	1.5302		6,411.7129	6,411.7129	0.2131		6,417.0390

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,055.36	1,055.36	1055.36	2,437,467	1,819,466
Enclosed Parking Structure	0.00	0.00	0.00		
Strip Mall	113.25	113.25	113.25	174,409	130,189
Total	1,168.61	1,168.61	1,168.61	2,611,876	1,949,655

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	86	11	3
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Enclosed Parking Structure	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Strip Mall	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0497	0.4245	0.1812	2.7100e-003		0.0343	0.0343		0.0343	0.0343		541.8319	541.8319	0.0104	9.9300e-003	545.0517
NaturalGas Unmitigated	0.0497	0.4245	0.1812	2.7100e-003		0.0343	0.0343		0.0343	0.0343		541.8319	541.8319	0.0104	9.9300e-003	545.0517

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	4591.93	0.0495	0.4232	0.1801	2.7000e-003		0.0342	0.0342		0.0342	0.0342		540.2267	540.2267	0.0104	9.9000e-003	543.4370
Enclosed Parking Structure	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
Strip Mall	13.6438	1.5000e-004	1.3400e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6052	1.6052	3.0000e-005	3.0000e-005	1.6147
Total		**0.0497**	**0.4245**	**0.1812**	**2.7100e-003**		**0.0343**	**0.0343**		**0.0343**	**0.0343**		**541.8319**	**541.8319**	**0.0104**	**9.9300e-003**	**545.0517**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	4.59193	0.0495	0.4232	0.1801	2.7000e-003		0.0342	0.0342		0.0342	0.0342		540.2267	540.2267	0.0104	9.9000e-003	543.4370
Enclosed Parking Structure	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
Strip Mall	0.0136438	1.5000e-004	1.3400e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6052	1.6052	3.0000e-005	3.0000e-005	1.6147
Total		**0.0497**	**0.4245**	**0.1812**	**2.7100e-003**		**0.0343**	**0.0343**		**0.0343**	**0.0343**		**541.8319**	**541.8319**	**0.0104**	**9.9300e-003**	**545.0517**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.3940	0.1847	16.0221	8.5000e-004		0.0887	0.0887		0.0887	0.0887	0.0000	28.8476	28.8476	0.0278	0.0000	29.5423
Unmitigated	5.3940	0.1847	16.0221	8.5000e-004		0.0887	0.0887		0.0887	0.0887	0.0000	28.8476	28.8476	0.0278	0.0000	29.5423

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.2338					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	0.4835	0.1847	16.0221	8.5000e-004		0.0887	0.0887		0.0887	0.0887		28.8476	28.8476	0.0278		29.5423
Total	**5.3940**	**0.1847**	**16.0221**	**8.5000e-004**		**0.0887**	**0.0887**		**0.0887**	**0.0887**	**0.0000**	**28.8476**	**28.8476**	**0.0278**	**0.0000**	**29.5423**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.2338					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	0.4835	0.1847	16.0221	8.5000e-004		0.0887	0.0887		0.0887	0.0887		28.8476	28.8476	0.0278		29.5423
Total	**5.3940**	**0.1847**	**16.0221**	**8.5000e-004**		**0.0887**	**0.0887**		**0.0887**	**0.0887**	**0.0000**	**28.8476**	**28.8476**	**0.0278**	**0.0000**	**29.5423**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Villa Del Sol Mixed-Use Residential Project

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	127.00	Space	0.00	50,800.00	0
Apartments Mid Rise	194.00	Dwelling Unit	1.42	194,000.00	281
Strip Mall	3.00	1000sqft	0.07	3,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2030
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	172.75	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.002

1.3 User Entered Comments & Non-Default Data

Villa Del Sol Mixed-Use Residential Project - Bay Area AQMD Air District, Annual

Project Characteristics - To reflect SJCE, intensity factors were calculated by adusting PG&E levels from 33% to 45% elegibility renewals to SJCE

Land Use - Lot agerage 1.49 per site plans. 127 parking spaces - 11 for commerical and 116 for residential. Population 281 based on number of rooms

Construction Phase - Arch coating to occur half way through building cons. updated per applicant proivded schedule

Demolition - 65,342 sf demolished per applicant info

Grading - Per applicant supplied information. Demo export added as part of site prep. Site prep 807 CY export and grading 1511 CY export

Architectural Coating - Changed to 100 g/L per BAAQMD Rule 3

Vehicle Trips - Trip gen rates per Hexagon 2020. Apt. 5.44 and retail 37.75

Road Dust -

Woodstoves - No woodstoves or fireplaces per applicant supplied information

Area Coating - Updated to 100 g/L per BAAQMD Rule 3

Energy Use - Reduced Title 24 energy by 30% for commerical uses to 1.932 and 1.659

Water And Wastewater - Indoor water use reduced by 20% per 2016 Title 24 to 177774.05 for mall and 9,642,795.79 for residential

Construction Off-road Equipment Mitigation - Water 2 times daily and 15 mph vehicle speed per San Jose Standar Condition of Approval

Mobile Land Use Mitigation - Nearest transit 0.07 mile, all units below market rate, 100% below market rate housing

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	100.00
tblArchitecturalCoating	EF_Parking	150.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	100
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	2.00	12.00
tblConstructionPhase	NumDays	4.00	43.00

tblConstructionPhase	NumDays	200.00	250.00
tblConstructionPhase	NumDays	10.00	125.00
tblConstructionPhase	NumDays	10.00	20.00
tblEnergyUse	T24E	2.76	1.93
tblEnergyUse	T24NG	2.37	1.66
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	29.10	0.00
tblFireplaces	NumberNoFireplace	7.76	0.00
tblFireplaces	NumberWood	32.98	0.00
tblGrading	AcresOfGrading	16.13	1.50
tblGrading	AcresOfGrading	6.00	1.00
tblGrading	MaterialExported	0.00	1,511.00
tblGrading	MaterialExported	0.00	807.00
tblGrading	MaterialSiltContent	6.90	4.30
tblGrading	MeanVehicleSpeed	7.10	40.00
tblLandUse	LotAcreage	1.14	0.00
tblLandUse	LotAcreage	5.11	1.42
tblLandUse	Population	555.00	281.00
tblProjectCharacteristics	CH4IntensityFactor	0	0.022
tblProjectCharacteristics	CO2IntensityFactor	0	172.75
tblProjectCharacteristics	N2OIntensityFactor	0	0.002
tblVehicleTrips	ST_TR	6.39	5.44
tblVehicleTrips	ST_TR	42.04	37.75
tblVehicleTrips	SU_TR	5.86	5.44
tblVehicleTrips	SU_TR	20.43	37.75

tblVehicleTrips	WD_TR	6.65	5.44
tblVehicleTrips	WD_TR	44.32	37.75
tblWater	IndoorWaterUseRate	12,639,880.97	9,642,795.79
tblWater	IndoorWaterUseRate	222,217.56	177,774.05
tblWater	OutdoorWaterUseRate	7,968,620.61	7,598,942.34
tblWoodstoves	NumberCatalytic	3.88	0.00
tblWoodstoves	NumberNoncatalytic	3.88	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

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	0.0931	0.9357	0.5872	1.4500e-003	0.1875	0.0396	0.2272	0.0793	0.0370	0.1163	0.0000	129.0647	129.0647	0.0239	0.0000	129.6626
2022	1.5108	1.9509	2.1549	5.2000e-003	0.1873	0.0771	0.2644	0.0503	0.0745	0.1248	0.0000	454.1215	454.1215	0.0476	0.0000	455.3112
Maximum	**1.5108**	**1.9509**	**2.1549**	**5.2000e-003**	**0.1875**	**0.0771**	**0.2644**	**0.0793**	**0.0745**	**0.1248**	**0.0000**	**454.1215**	**454.1215**	**0.0476**	**0.0000**	**455.3112**

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	0.0931	0.9357	0.5872	1.4500e-003	0.0981	0.0396	0.1378	0.0394	0.0370	0.0764	0.0000	129.0646	129.0646	0.0239	0.0000	129.6625
2022	1.5108	1.9509	2.1549	5.2000e-003	0.1873	0.0771	0.2644	0.0503	0.0745	0.1248	0.0000	454.1213	454.1213	0.0476	0.0000	455.3109
Maximum	**1.5108**	**1.9509**	**2.1549**	**5.2000e-003**	**0.1873**	**0.0771**	**0.2644**	**0.0503**	**0.0745**	**0.1248**	**0.0000**	**454.1213**	**454.1213**	**0.0476**	**0.0000**	**455.3109**

	ROG	NOx	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**	**23.86**	**0.00**	**18.19**	**30.79**	**0.00**	**16.55**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Villa Del Sol Mixed-Use Residential Project - Bay Area AQMD Air District, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-2-2021	11-1-2021	0.6093	0.6093
2	11-2-2021	2-1-2022	0.5983	0.5983
3	2-2-2022	5-1-2022	0.5726	0.5726
4	5-2-2022	8-1-2022	0.8122	0.8122
5	8-2-2022	9-30-2022	0.8455	0.8455
		Highest	0.8455	0.8455

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9392	0.0166	1.4379	8.0000e-005		7.9900e-003	7.9900e-003		7.9900e-003	7.9900e-003	0.0000	2.3553	2.3553	2.2500e-003	0.0000	2.4115
Energy	9.0600e-003	0.0775	0.0331	4.9000e-004		6.2600e-003	6.2600e-003		6.2600e-003	6.2600e-003	0.0000	177.3511	177.3511	0.0129	2.6600e-003	178.4656
Mobile	0.1846	0.9560	2.0276	9.1100e-003	0.9713	6.0600e-003	0.9774	0.2606	5.6400e-003	0.2662	0.0000	841.0077	841.0077	0.0268	0.0000	841.6776
Waste						0.0000	0.0000		0.0000	0.0000	18.7543	0.0000	18.7543	1.1084	0.0000	46.4631
Water						0.0000	0.0000		0.0000	0.0000	3.1156	6.2853	9.4009	0.3208	7.6300e-003	19.6943
Total	**1.1329**	**1.0500**	**3.4986**	**9.6800e-003**	**0.9713**	**0.0203**	**0.9917**	**0.2606**	**0.0199**	**0.2805**	**21.8700**	**1,026.9994**	**1,048.8694**	**1.4711**	**0.0103**	**1,088.7121**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9392	0.0166	1.4379	8.0000e-005		7.9900e-003	7.9900e-003		7.9900e-003	7.9900e-003	0.0000	2.3553	2.3553	2.2500e-003	0.0000	2.4115
Energy	9.0600e-003	0.0775	0.0331	4.9000e-004		6.2600e-003	6.2600e-003		6.2600e-003	6.2600e-003	0.0000	177.3511	177.3511	0.0129	2.6600e-003	178.4656
Mobile	0.1670	0.8616	1.6442	6.9900e-003	0.7251	4.7600e-003	0.7298	0.1945	4.4300e-003	0.1989	0.0000	645.9433	645.9433	0.0219	0.0000	646.4896
Waste						0.0000	0.0000		0.0000	0.0000	18.7543	0.0000	18.7543	1.1084	0.0000	46.4631
Water						0.0000	0.0000		0.0000	0.0000	3.1156	6.2853	9.4009	0.3208	7.6300e-003	19.6943
Total	**1.1153**	**0.9556**	**3.1151**	**7.5600e-003**	**0.7251**	**0.0190**	**0.7441**	**0.1945**	**0.0187**	**0.2132**	**21.8700**	**831.9350**	**853.8049**	**1.4661**	**0.0103**	**893.5241**

	ROG	NOx	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	**1.55**	**8.99**	**10.96**	**21.90**	**25.35**	**6.40**	**24.97**	**25.35**	**6.08**	**23.99**	**0.00**	**18.99**	**18.60**	**0.34**	**0.00**	**17.93**

3.0 Construction Detail

Construction Phase

Villa Del Sol Mixed-Use Residential Project - Bay Area AQMD Air District, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/2/2021	9/3/2021	5	25	
2	Site Preparation	Site Preparation	9/6/2021	9/21/2021	5	12	
3	Grading	Grading	10/1/2021	11/30/2021	5	43	
4	Building Construction	Building Construction	12/1/2021	11/15/2022	5	250	
5	Architectural Coating	Architectural Coating	7/4/2022	12/23/2022	5	125	
6	Paving	Paving	11/16/2022	12/13/2022	5	20	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 392,850; Residential Outdoor: 130,950; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped Parking Area: 3,048 (Architectural Coating – sqft)

OffRoad Equipment

Villa Del Sol Mixed-Use Residential Project - Bay Area AQMD Air District, Annual

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
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
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	6.00	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	8.00	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	0.00	297.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	101.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	189.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	162.00	30.00	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
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	32.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved 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					
Fugitive Dust					0.0322	0.0000	0.0322	4.8700e-003	0.0000	4.8700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.2462	0.1812	3.0000e-004		0.0130	0.0130		0.0121	0.0121	0.0000	26.3392	26.3392	6.7400e-003	0.0000	26.5076
Total	**0.0249**	**0.2462**	**0.1812**	**3.0000e-004**	**0.0322**	**0.0130**	**0.0452**	**4.8700e-003**	**0.0121**	**0.0170**	**0.0000**	**26.3392**	**26.3392**	**6.7400e-003**	**0.0000**	**26.5076**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1700e-003	0.0401	8.5400e-003	1.2000e-004	2.5100e-003	1.2000e-004	2.6300e-003	6.9000e-004	1.2000e-004	8.1000e-004	0.0000	11.2347	11.2347	5.7000e-004	0.0000	11.2490
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.4000e-004	3.6400e-003	1.0000e-005	1.2800e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.0855	1.0855	2.0000e-005	0.0000	1.0861
Total	**1.6700e-003**	**0.0404**	**0.0122**	**1.3000e-004**	**3.7900e-003**	**1.3000e-004**	**3.9200e-003**	**1.0300e-003**	**1.3000e-004**	**1.1600e-003**	**0.0000**	**12.3202**	**12.3202**	**5.9000e-004**	**0.0000**	**12.3351**

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					0.0145	0.0000	0.0145	2.1900e-003	0.0000	2.1900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.2462	0.1812	3.0000e-004		0.0130	0.0130		0.0121	0.0121	0.0000	26.3391	26.3391	6.7400e-003	0.0000	26.5075
Total	**0.0249**	**0.2462**	**0.1812**	**3.0000e-004**	**0.0145**	**0.0130**	**0.0275**	**2.1900e-003**	**0.0121**	**0.0143**	**0.0000**	**26.3391**	**26.3391**	**6.7400e-003**	**0.0000**	**26.5075**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1700e-003	0.0401	8.5400e-003	1.2000e-004	2.5100e-003	1.2000e-004	2.6300e-003	6.9000e-004	1.2000e-004	8.1000e-004	0.0000	11.2347	11.2347	5.7000e-004	0.0000	11.2490
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.4000e-004	3.6400e-003	1.0000e-005	1.2800e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.0855	1.0855	2.0000e-005	0.0000	1.0861
Total	**1.6700e-003**	**0.0404**	**0.0122**	**1.3000e-004**	**3.7900e-003**	**1.3000e-004**	**3.9200e-003**	**1.0300e-003**	**1.3000e-004**	**1.1600e-003**	**0.0000**	**12.3202**	**12.3202**	**5.9000e-004**	**0.0000**	**12.3351**

3.3 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					0.0324	0.0000	0.0324	0.0142	0.0000	0.0142	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3300e-003	0.1045	0.0454	1.0000e-004		4.5900e-003	4.5900e-003		4.2200e-003	4.2200e-003	0.0000	9.0710	9.0710	2.9300e-003	0.0000	9.1444
Total	**9.3300e-003**	**0.1045**	**0.0454**	**1.0000e-004**	**0.0324**	**4.5900e-003**	**0.0370**	**0.0142**	**4.2200e-003**	**0.0184**	**0.0000**	**9.0710**	**9.0710**	**2.9300e-003**	**0.0000**	**9.1444**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-004	0.0136	2.9000e-003	4.0000e-005	8.5000e-004	4.0000e-005	9.0000e-004	2.3000e-004	4.0000e-005	2.7000e-004	0.0000	3.8205	3.8205	1.9000e-004	0.0000	3.8254
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.0000e-004	1.0800e-003	0.0000	3.8000e-004	0.0000	3.8000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3206	0.3206	1.0000e-005	0.0000	0.3208
Total	**5.5000e-004**	**0.0137**	**3.9800e-003**	**4.0000e-005**	**1.2300e-003**	**4.0000e-005**	**1.2800e-003**	**3.3000e-004**	**4.0000e-005**	**3.7000e-004**	**0.0000**	**4.1412**	**4.1412**	**2.0000e-004**	**0.0000**	**4.1462**

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					0.0146	0.0000	0.0146	6.3800e-003	0.0000	6.3800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3300e-003	0.1045	0.0454	1.0000e-004		4.5900e-003	4.5900e-003		4.2200e-003	4.2200e-003	0.0000	9.0710	9.0710	2.9300e-003	0.0000	9.1444
Total	**9.3300e-003**	**0.1045**	**0.0454**	**1.0000e-004**	**0.0146**	**4.5900e-003**	**0.0192**	**6.3800e-003**	**4.2200e-003**	**0.0106**	**0.0000**	**9.0710**	**9.0710**	**2.9300e-003**	**0.0000**	**9.1444**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-004	0.0136	2.9000e-003	4.0000e-005	8.5000e-004	4.0000e-005	9.0000e-004	2.3000e-004	4.0000e-005	2.7000e-004	0.0000	3.8205	3.8205	1.9000e-004	0.0000	3.8254
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.0000e-004	1.0800e-003	0.0000	3.8000e-004	0.0000	3.8000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3206	0.3206	1.0000e-005	0.0000	0.3208
Total	**5.5000e-004**	**0.0137**	**3.9800e-003**	**4.0000e-005**	**1.2300e-003**	**4.0000e-005**	**1.2800e-003**	**3.3000e-004**	**4.0000e-005**	**3.7000e-004**	**0.0000**	**4.1412**	**4.1412**	**2.0000e-004**	**0.0000**	**4.1462**

3.4 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					0.0980	0.0000	0.0980	0.0535	0.0000	0.0535	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0277	0.3081	0.1361	3.0000e-004		0.0137	0.0137		0.0126	0.0126	0.0000	26.6249	26.6249	8.6100e-003	0.0000	26.8401
Total	**0.0277**	**0.3081**	**0.1361**	**3.0000e-004**	**0.0980**	**0.0137**	**0.1117**	**0.0535**	**0.0126**	**0.0661**	**0.0000**	**26.6249**	**26.6249**	**8.6100e-003**	**0.0000**	**26.8401**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.4000e-004	0.0255	5.4300e-003	7.0000e-005	1.6000e-003	8.0000e-005	1.6800e-003	4.4000e-004	8.0000e-005	5.1000e-004	0.0000	7.1493	7.1493	3.6000e-004	0.0000	7.1585
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.6000e-004	3.8600e-003	1.0000e-005	1.3600e-003	1.0000e-005	1.3700e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.1489	1.1489	3.0000e-005	0.0000	1.1496
Total	**1.2700e-003**	**0.0259**	**9.2900e-003**	**8.0000e-005**	**2.9600e-003**	**9.0000e-005**	**3.0500e-003**	**8.0000e-004**	**9.0000e-005**	**8.8000e-004**	**0.0000**	**8.2983**	**8.2983**	**3.9000e-004**	**0.0000**	**8.3080**

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					0.0441	0.0000	0.0441	0.0241	0.0000	0.0241	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0277	0.3081	0.1361	3.0000e-004		0.0137	0.0137		0.0126	0.0126	0.0000	26.6248	26.6248	8.6100e-003	0.0000	26.8401
Total	**0.0277**	**0.3081**	**0.1361**	**3.0000e-004**	**0.0441**	**0.0137**	**0.0578**	**0.0241**	**0.0126**	**0.0367**	**0.0000**	**26.6248**	**26.6248**	**8.6100e-003**	**0.0000**	**26.8401**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.4000e-004	0.0255	5.4300e-003	7.0000e-005	1.6000e-003	8.0000e-005	1.6800e-003	4.4000e-004	8.0000e-005	5.1000e-004	0.0000	7.1493	7.1493	3.6000e-004	0.0000	7.1585
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.6000e-004	3.8600e-003	1.0000e-005	1.3600e-003	1.0000e-005	1.3700e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.1489	1.1489	3.0000e-005	0.0000	1.1496
Total	**1.2700e-003**	**0.0259**	**9.2900e-003**	**8.0000e-005**	**2.9600e-003**	**9.0000e-005**	**3.0500e-003**	**8.0000e-004**	**9.0000e-005**	**8.8000e-004**	**0.0000**	**8.2983**	**8.2983**	**3.9000e-004**	**0.0000**	**8.3080**

3.5 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	0.0208	0.1568	0.1483	2.5000e-004		7.8700e-003	7.8700e-003		7.6000e-003	7.6000e-003	0.0000	20.8780	20.8780	3.7300e-003	0.0000	20.9712
Total	**0.0208**	**0.1568**	**0.1483**	**2.5000e-004**		**7.8700e-003**	**7.8700e-003**		**7.6000e-003**	**7.6000e-003**	**0.0000**	**20.8780**	**20.8780**	**3.7300e-003**	**0.0000**	**20.9712**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	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-003	0.0360	8.9900e-003	9.0000e-005	2.2600e-003	8.0000e-005	2.3400e-003	6.5000e-004	7.0000e-005	7.3000e-004	0.0000	8.9474	8.9474	4.4000e-004	0.0000	8.9584
Worker	5.7200e-003	3.9400e-003	0.0418	1.4000e-004	0.0147	1.0000e-004	0.0148	3.9200e-003	9.0000e-005	4.0000e-003	0.0000	12.4447	12.4447	2.8000e-004	0.0000	12.4516
Total	**6.8200e-003**	**0.0400**	**0.0508**	**2.3000e-004**	**0.0170**	**1.8000e-004**	**0.0172**	**4.5700e-003**	**1.6000e-004**	**4.7300e-003**	**0.0000**	**21.3920**	**21.3920**	**7.2000e-004**	**0.0000**	**21.4100**

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	0.0208	0.1568	0.1483	2.5000e-004		7.8700e-003	7.8700e-003		7.6000e-003	7.6000e-003	0.0000	20.8780	20.8780	3.7300e-003	0.0000	20.9711
Total	**0.0208**	**0.1568**	**0.1483**	**2.5000e-004**		**7.8700e-003**	**7.8700e-003**		**7.6000e-003**	**7.6000e-003**	**0.0000**	**20.8780**	**20.8780**	**3.7300e-003**	**0.0000**	**20.9711**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	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-003	0.0360	8.9900e-003	9.0000e-005	2.2600e-003	8.0000e-005	2.3400e-003	6.5000e-004	7.0000e-005	7.3000e-004	0.0000	8.9474	8.9474	4.4000e-004	0.0000	8.9584
Worker	5.7200e-003	3.9400e-003	0.0418	1.4000e-004	0.0147	1.0000e-004	0.0148	3.9200e-003	9.0000e-005	4.0000e-003	0.0000	12.4447	12.4447	2.8000e-004	0.0000	12.4516
Total	**6.8200e-003**	**0.0400**	**0.0508**	**2.3000e-004**	**0.0170**	**1.8000e-004**	**0.0172**	**4.5700e-003**	**1.6000e-004**	**4.7300e-003**	**0.0000**	**21.3920**	**21.3920**	**7.2000e-004**	**0.0000**	**21.4100**

3.5 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	0.1871	1.4191	1.4445	2.5000e-003		0.0668	0.0668		0.0646	0.0646	0.0000	206.0898	206.0898	0.0359	0.0000	206.9872
Total	**0.1871**	**1.4191**	**1.4445**	**2.5000e-003**		**0.0668**	**0.0668**		**0.0646**	**0.0646**	**0.0000**	**206.0898**	**206.0898**	**0.0359**	**0.0000**	**206.9872**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0101	0.3368	0.0835	9.1000e-004	0.0223	6.7000e-004	0.0230	6.4600e-003	6.4000e-004	7.1000e-003	0.0000	87.4407	87.4407	4.1500e-003	0.0000	87.5445
Worker	0.0526	0.0349	0.3790	1.3100e-003	0.1453	9.3000e-004	0.1462	0.0387	8.5000e-004	0.0395	0.0000	118.3204	118.3204	2.4700e-003	0.0000	118.3822
Total	**0.0627**	**0.3717**	**0.4625**	**2.2200e-003**	**0.1676**	**1.6000e-003**	**0.1692**	**0.0451**	**1.4900e-003**	**0.0466**	**0.0000**	**205.7612**	**205.7612**	**6.6200e-003**	**0.0000**	**205.9266**

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	0.1871	1.4191	1.4445	2.5000e-003		0.0668	0.0668		0.0646	0.0646	0.0000	206.0896	206.0896	0.0359	0.0000	206.9869
Total	**0.1871**	**1.4191**	**1.4445**	**2.5000e-003**		**0.0668**	**0.0668**		**0.0646**	**0.0646**	**0.0000**	**206.0896**	**206.0896**	**0.0359**	**0.0000**	**206.9869**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0101	0.3368	0.0835	9.1000e-004	0.0223	6.7000e-004	0.0230	6.4600e-003	6.4000e-004	7.1000e-003	0.0000	87.4407	87.4407	4.1500e-003	0.0000	87.5445
Worker	0.0526	0.0349	0.3790	1.3100e-003	0.1453	9.3000e-004	0.1462	0.0387	8.5000e-004	0.0395	0.0000	118.3204	118.3204	2.4700e-003	0.0000	118.3822
Total	**0.0627**	**0.3717**	**0.4625**	**2.2200e-003**	**0.1676**	**1.6000e-003**	**0.1692**	**0.0451**	**1.4900e-003**	**0.0466**	**0.0000**	**205.7612**	**205.7612**	**6.6200e-003**	**0.0000**	**205.9266**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.2349					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0128	0.0880	0.1134	1.9000e-004		5.1100e-003	5.1100e-003		5.1100e-003	5.1100e-003	0.0000	15.9578	15.9578	1.0400e-003	0.0000	15.9838
Total	**1.2477**	**0.0880**	**0.1134**	**1.9000e-004**		**5.1100e-003**	**5.1100e-003**		**5.1100e-003**	**5.1100e-003**	**0.0000**	**15.9578**	**15.9578**	**1.0400e-003**	**0.0000**	**15.9838**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7200e-003	3.8000e-003	0.0412	1.4000e-004	0.0158	1.0000e-004	0.0159	4.2000e-003	9.0000e-005	4.3000e-003	0.0000	12.8700	12.8700	2.7000e-004	0.0000	12.8767
Total	**5.7200e-003**	**3.8000e-003**	**0.0412**	**1.4000e-004**	**0.0158**	**1.0000e-004**	**0.0159**	**4.2000e-003**	**9.0000e-005**	**4.3000e-003**	**0.0000**	**12.8700**	**12.8700**	**2.7000e-004**	**0.0000**	**12.8767**

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	1.2349					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0128	0.0880	0.1134	1.9000e-004		5.1100e-003	5.1100e-003		5.1100e-003	5.1100e-003	0.0000	15.9578	15.9578	1.0400e-003	0.0000	15.9838
Total	**1.2477**	**0.0880**	**0.1134**	**1.9000e-004**		**5.1100e-003**	**5.1100e-003**		**5.1100e-003**	**5.1100e-003**	**0.0000**	**15.9578**	**15.9578**	**1.0400e-003**	**0.0000**	**15.9838**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7200e-003	3.8000e-003	0.0412	1.4000e-004	0.0158	1.0000e-004	0.0159	4.2000e-003	9.0000e-005	4.3000e-003	0.0000	12.8700	12.8700	2.7000e-004	0.0000	12.8767
Total	**5.7200e-003**	**3.8000e-003**	**0.0412**	**1.4000e-004**	**0.0158**	**1.0000e-004**	**0.0159**	**4.2000e-003**	**9.0000e-005**	**4.3000e-003**	**0.0000**	**12.8700**	**12.8700**	**2.7000e-004**	**0.0000**	**12.8767**

3.7 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8800e-003	0.0677	0.0881	1.4000e-004		3.4700e-003	3.4700e-003		3.2100e-003	3.2100e-003	0.0000	11.7696	11.7696	3.7300e-003	0.0000	11.8629
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.8800e-003**	**0.0677**	**0.0881**	**1.4000e-004**		**3.4700e-003**	**3.4700e-003**		**3.2100e-003**	**3.2100e-003**	**0.0000**	**11.7696**	**11.7696**	**3.7300e-003**	**0.0000**	**11.8629**

3.7 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	4.9000e-004	5.3600e-003	2.0000e-005	3.8300e-003	1.0000e-005	3.8400e-003	9.8000e-004	1.0000e-005	9.9000e-004	0.0000	1.6731	1.6731	3.0000e-005	0.0000	1.6740
Total	**7.4000e-004**	**4.9000e-004**	**5.3600e-003**	**2.0000e-005**	**3.8300e-003**	**1.0000e-005**	**3.8400e-003**	**9.8000e-004**	**1.0000e-005**	**9.9000e-004**	**0.0000**	**1.6731**	**1.6731**	**3.0000e-005**	**0.0000**	**1.6740**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8800e-003	0.0677	0.0881	1.4000e-004		3.4700e-003	3.4700e-003		3.2100e-003	3.2100e-003	0.0000	11.7696	11.7696	3.7300e-003	0.0000	11.8629
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.8800e-003**	**0.0677**	**0.0881**	**1.4000e-004**		**3.4700e-003**	**3.4700e-003**		**3.2100e-003**	**3.2100e-003**	**0.0000**	**11.7696**	**11.7696**	**3.7300e-003**	**0.0000**	**11.8629**

3.7 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	4.9000e-004	5.3600e-003	2.0000e-005	3.8300e-003	1.0000e-005	3.8400e-003	9.8000e-004	1.0000e-005	9.9000e-004	0.0000	1.6731	1.6731	3.0000e-005	0.0000	1.6740
Total	**7.4000e-004**	**4.9000e-004**	**5.3600e-003**	**2.0000e-005**	**3.8300e-003**	**1.0000e-005**	**3.8400e-003**	**9.8000e-004**	**1.0000e-005**	**9.9000e-004**	**0.0000**	**1.6731**	**1.6731**	**3.0000e-005**	**0.0000**	**1.6740**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

Integrate Below Market Rate Housing

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1670	0.8616	1.6442	6.9900e-003	0.7251	4.7600e-003	0.7298	0.1945	4.4300e-003	0.1989	0.0000	645.9433	645.9433	0.0219	0.0000	646.4896
Unmitigated	0.1846	0.9560	2.0276	9.1100e-003	0.9713	6.0600e-003	0.9774	0.2606	5.6400e-003	0.2662	0.0000	841.0077	841.0077	0.0268	0.0000	841.6776

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,055.36	1,055.36	1055.36	2,437,467	1,819,466
Enclosed Parking Structure	0.00	0.00	0.00		
Strip Mall	113.25	113.25	113.25	174,409	130,189
Total	1,168.61	1,168.61	1,168.61	2,611,876	1,949,655

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	86	11	3
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.585795	0.036515	0.193581	0.106455	0.012789	0.005274	0.019465	0.028415	0.002699	0.001789	0.005626	0.000921	0.000676
Enclosed Parking Structure	0.585795	0.036515	0.193581	0.106455	0.012789	0.005274	0.019465	0.028415	0.002699	0.001789	0.005626	0.000921	0.000676
Strip Mall	0.585795	0.036515	0.193581	0.106455	0.012789	0.005274	0.019465	0.028415	0.002699	0.001789	0.005626	0.000921	0.000676

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	87.6448	87.6448	0.0112	1.0100e-003	88.2262
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	87.6448	87.6448	0.0112	1.0100e-003	88.2262
NaturalGas Mitigated	9.0600e-003	0.0775	0.0331	4.9000e-004		6.2600e-003	6.2600e-003		6.2600e-003	6.2600e-003	0.0000	89.7063	89.7063	1.7200e-003	1.6400e-003	90.2394
NaturalGas Unmitigated	9.0600e-003	0.0775	0.0331	4.9000e-004		6.2600e-003	6.2600e-003		6.2600e-003	6.2600e-003	0.0000	89.7063	89.7063	1.7200e-003	1.6400e-003	90.2394

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	1.67605e+006	9.0400e-003	0.0772	0.0329	4.9000e-004		6.2400e-003	6.2400e-003		6.2400e-003	6.2400e-003	0.0000	89.4406	89.4406	1.7100e-003	1.6400e-003	89.9721
Enclosed Parking Structure	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
Strip Mall	4980	3.0000e-005	2.4000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2658	0.2658	1.0000e-005	0.0000	0.2673
Total		**9.0700e-003**	**0.0775**	**0.0331**	**4.9000e-004**		**6.2600e-003**	**6.2600e-003**		**6.2600e-003**	**6.2600e-003**	**0.0000**	**89.7063**	**89.7063**	**1.7200e-003**	**1.6400e-003**	**90.2394**

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	1.67605e+006	9.0400e-003	0.0772	0.0329	4.9000e-004		6.2400e-003	6.2400e-003		6.2400e-003	6.2400e-003	0.0000	89.4406	89.4406	1.7100e-003	1.6400e-003	89.9721
Enclosed Parking Structure	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
Strip Mall	4980	3.0000e-005	2.4000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2658	0.2658	1.0000e-005	0.0000	0.2673
Total		**9.0700e-003**	**0.0775**	**0.0331**	**4.9000e-004**		**6.2600e-003**	**6.2600e-003**		**6.2600e-003**	**6.2600e-003**	**0.0000**	**89.7063**	**89.7063**	**1.7200e-003**	**1.6400e-003**	**90.2394**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	800900	62.7570	7.9900e-003	7.3000e-004	63.1733
Enclosed Parking Structure	288036	22.5700	2.8700e-003	2.6000e-004	22.7197
Strip Mall	29580	2.3178	3.0000e-004	3.0000e-005	2.3332
Total		**87.6448**	**0.0112**	**1.0200e-003**	**88.2262**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	800900	62.7570	7.9900e-003	7.3000e-004	63.1733
Enclosed Parking Structure	288036	22.5700	2.8700e-003	2.6000e-004	22.7197
Strip Mall	29580	2.3178	3.0000e-004	3.0000e-005	2.3332
Total		**87.6448**	**0.0112**	**1.0200e-003**	**88.2262**

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	0.9392	0.0166	1.4379	8.0000e-005		7.9900e-003	7.9900e-003		7.9900e-003	7.9900e-003	0.0000	2.3553	2.3553	2.2500e-003	0.0000	2.4115
Unmitigated	0.9392	0.0166	1.4379	8.0000e-005		7.9900e-003	7.9900e-003		7.9900e-003	7.9900e-003	0.0000	2.3553	2.3553	2.2500e-003	0.0000	2.4115

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1235					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7727					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	0.0431	0.0166	1.4379	8.0000e-005		7.9900e-003	7.9900e-003		7.9900e-003	7.9900e-003	0.0000	2.3553	2.3553	2.2500e-003	0.0000	2.4115
Total	**0.9392**	**0.0166**	**1.4379**	**8.0000e-005**		**7.9900e-003**	**7.9900e-003**		**7.9900e-003**	**7.9900e-003**	**0.0000**	**2.3553**	**2.3553**	**2.2500e-003**	**0.0000**	**2.4115**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1235					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7727					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	0.0431	0.0166	1.4379	8.0000e-005		7.9900e-003	7.9900e-003		7.9900e-003	7.9900e-003	0.0000	2.3553	2.3553	2.2500e-003	0.0000	2.4115
Total	**0.9392**	**0.0166**	**1.4379**	**8.0000e-005**		**7.9900e-003**	**7.9900e-003**		**7.9900e-003**	**7.9900e-003**	**0.0000**	**2.3553**	**2.3553**	**2.2500e-003**	**0.0000**	**2.4115**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	9.4009	0.3208	7.6300e-003	19.6943
Unmitigated	9.4009	0.3208	7.6300e-003	19.6943

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	9.6428 / 7.59894	9.2318	0.3150	7.4900e-003	19.3389
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.177774 / 0.136198	0.1691	5.8100e-003	1.4000e-004	0.3555
Total		**9.4009**	**0.3208**	**7.6300e-003**	**19.6944**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	9.6428 / 7.59894	9.2318	0.3150	7.4900e-003	19.3389
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.177774 / 0.136198	0.1691	5.8100e-003	1.4000e-004	0.3555
Total		**9.4009**	**0.3208**	**7.6300e-003**	**19.6944**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	18.7543	1.1084	0.0000	46.4631
Unmitigated	18.7543	1.1084	0.0000	46.4631

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	89.24	18.1149	1.0706	0.0000	44.8789
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	3.15	0.6394	0.0378	0.0000	1.5841
Total		**18.7543**	**1.1084**	**0.0000**	**46.4631**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	89.24	18.1149	1.0706	0.0000	44.8789
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	3.15	0.6394	0.0378	0.0000	1.5841
Total		**18.7543**	**1.1084**	**0.0000**	**46.4631**

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

N2O Operational GHG Emission Mobile Calculations

Alum Rock Ave.

Vehicle Population Breakdown*	
1319606	Gasoline vehicles
52786	Diesel vehicles
96.2%	Gasoline vehicle %
3.8%	Diesel vehicle %

VMT per Vehicle Type	
1949655	Project VMT (CalEEMod output)
1874666	Gasoline vehicle VMT
74989	Diesel vehicle VMT

Gasoline Vehicles	
96.2%	Gasoline vehicle %
0.955	Tons per year mobile NOX emissions (annual output in CalEEMod)
0.92	Gasoline vehicle tons per year NOX emissions
0.0577	Tons per year N2O emissions for gasoline vehicles**
0.0523	Metric tons per year N2O emissions for gasoline vehicles

Diesel Vehicles	
1.60	grams N2O per gallon of fuel for diesel vehicles**
21.40	Diesel average miles per gallon*
0.07475	grams per mile N2O for diesel vehicles
5605.7	grams per year N2O for diesel vehicles
0.0056057	Metric tons per year N2O emissions for diesel vehicles

CO2e Emissions from N2O	
0.0579	Metric tons per year from gasoline + diesel vehicles
298	GWP of N2O***
17.3	**CO2e emissions per year from N2O emissions from gasoline + diesel vehicles**

Sources
***Vehicle population source:** EMFAC2017 (v1.0.2) Emissions Inventory Region Type: County Region: Santa Clara County Calendar Year: 2024 Season: Annual Vehicle Classification: EMFAC2011 Categories ****Methodology source:** EMFAC2017 Volume III - Technical Documentation https://www.arb.ca.gov/msei/emfac2011-faq.htm *****GWP source:** Intergovernmental Panel on Climate Change (IPCC). 2007. AR4 Climate Change 2007: The Physical Science Basis. Contrbution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.

Appendix C

Bay Area Air Quality Management District Health Risk Report

05/01/2020

HEALTH RISK – YR2014

RECEPTOR ID: 1		37.354906°, -121.850437°
	Type	**Risk**
Cancer	Highway	28.659
	Major Street	2.200
	Rail	0.942
PM2.5	Highway	0.563
	Major Street	0.052
	Rail	0.002

RECEPTOR ID: 2		37.354878°, -121.850771°
	Type	**Risk**
Cancer	Highway	32.683
	Major Street	2.199
	Rail	0.942
PM2.5	Highway	0.652
	Major Street	0.052
	Rail	0.002

RECEPTOR ID: 3		37.353995° , -121.849700°
	Type	**Risk**
Cancer	Highway	23.713
	Major Street	2.162
	Rail	1.006
PM2.5	Highway	0.452
	Major Street	0.051
	Rail	0.002

RECEPTOR ID: 4		37.353871°, -121.850009°
	Type	**Risk**
Cancer	Highway	23.971
	Major Street	2.165
	Rail	1.008
PM2.5	Highway	0.458
	Major Street	0.051
	Rail	0.002

METHOD/DATA

Cancer risk and PM2.5 were modeled in AERMOD for all highways/freeways and roadways >30,000 AADT (annual average daily traffic) and rail in 20 x 20 meter grid cells. The files incorporate AADT for that highway using EMFAC 2014 data for fleet mix and includes OEHHA's 2015 Air Toxics Hot Spots Guidance methods.

THRESHOLDS OF SIGNIFICANCE BASED ON CEQA GUIDANCE:

Local community risk and hazard impacts are associated with Toxic Air Contaminants (TACs) and fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less ($PM_{2.5}$) because emissions of these pollutants can have significant health impacts at the local level. If emissions of TACs or $PM_{2.5}$ exceed any of the Thresholds of Significance, a project would result in a significant impact.

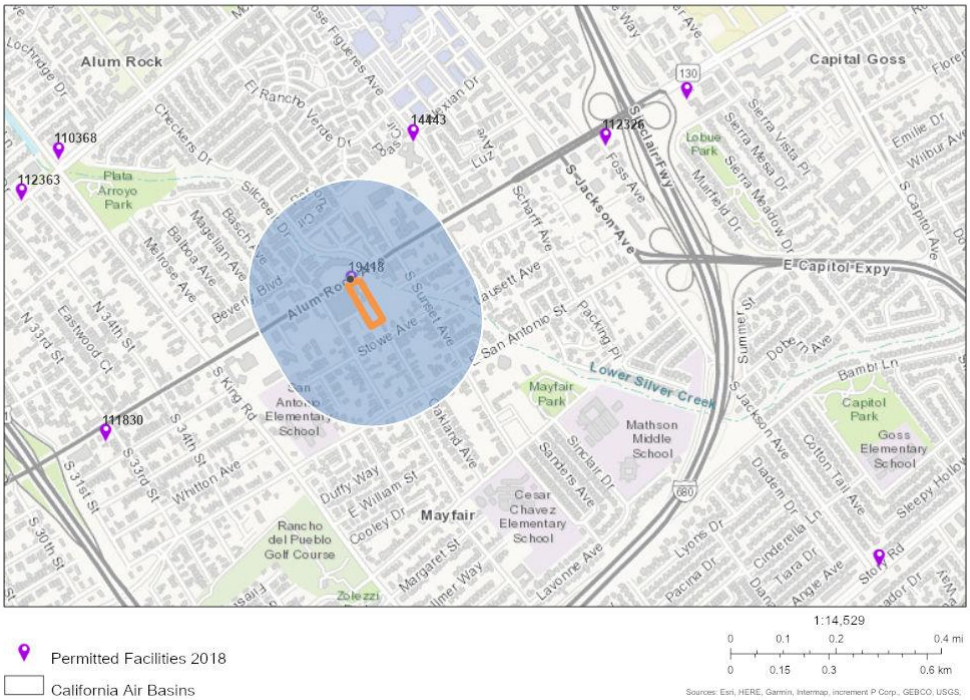
	SIGNIFICANCE THRESHOLD
CANCER	10 in a million
AMBIENT PM2.5	0.3 ug/m^3

Stationary Source Risk & Hazards Screening Report

Area of Interest (AOI) Information

Area : 4,401,211.18 ft²

Mar 30 2020 11:50:10 Pacific Daylight Time



Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Facilities 2018	1	N/A	N/A

Permitted Facilities 2018

#	FACID	Name	Address	City	St	Zip	County	Cancer
1	19418	San Jose Dental Surgery Center	1998 Alum Rock Ave	San Jose	CA	95116	Santa Clara	0.770

#	Hazard	PM_25	Type	Count
1	0.000	0.000	Generators	1

Note: The estimated risk and hazard impacts from these sources would be expected to be substantially lower when site specific Health Risk Screening Assessments are conducted.

The screening level map is not recommended for evaluating sensitive land uses such as schools, senior centers, day cares, and health facilities.