APPENDIX C

HEALTH RISK ASSESSMENT

Health Risk Assessment

355 First Street

June 10, 2021

Prepared by

EMC Planning Group

HEALTH RISK ASSESSMENT

355 FIRST STREET

PREPARED FOR

City of Los Altos

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1.0 Introduction

1.1 PURPOSE

The purpose of this report is to address community health risk impacts associated with the demolition of seven existing buildings and construction of a four-story, 50-unit condominium project located on a 0.64-acre site at 355 First Street in the City of Los Altos. Figure 1-1, Location Map, presents the regional location of the project site.

An initial study is being prepared for the proposed project pursuant to the California Environmental Quality Act (CEQA) and the results of the health risk assessment will inform an analysis of health risks associated with sensitive receptor exposures to project-related emissions. Demolition and construction activities on the site would generate air pollutant emissions, which were predicted and analyzed using models. Community health risk assessments typically look at all substantial sources of toxic air contaminants (TACs) that can affect sensitive receptors located within 1,000 feet of a project site (i.e., influence area). These sources include rail lines, highways, busy surface streets, and stationary sources. The potential health risk impacts to nearby sensitive receptors from exposure to emissions generated by project demolition and construction activity were evaluated in combination with exposures to existing TACs from stationary sources and high-traffic volume roadways. The impact analysis is based on the guidance provided by the Bay Area Air Quality Management District (air district).

This introductory section provides a description of the project. Section 2 describes the existing environmental setting including air quality conditions, and the regulatory setting for addressing emissions-related health risks. Section 3 identifies thresholds of significance and describes the analysis methodology. Section 4 presents an assessment of project-related health risks related to emissions generated by construction of the project, Section 5 includes a list of persons who prepared this technical report; and Section 6 identifies references cited.

1.2 PROJECT DESCRIPTION

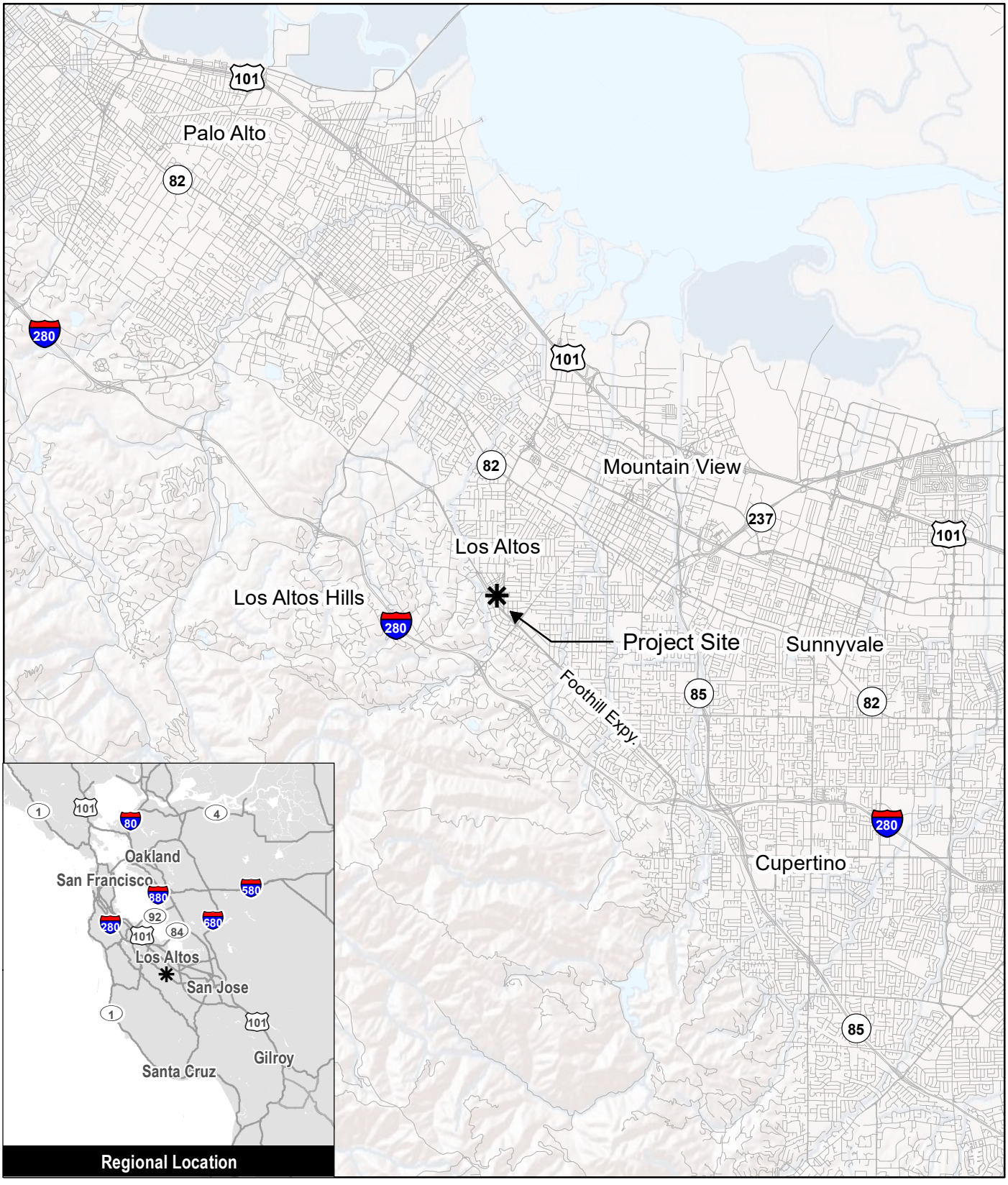
The proposed project is located on four lots comprising 0.64 acres in the City of Los Altos. The proposed project is the demolition of seven existing buildings totaling 7,648 square feet, including a hair salon, coin shop, office building, a single-family residence and two outbuildings, pavement and vegetation to accommodate the construction of a 79,431 square

foot, 50-unit, four story condominium building with two levels of underground parking, landscaping, and walkways. The proposed project includes replacing approximately 1,708 square feet of sidewalks within the public way on First Street and Whitney Street. The total area of disturbance during construction would be approximately 0.68 acres. The proposed parking garage is 51,023 square feet and would accommodate 115 parking spaces, 50 bicycle lockers, 50 storage units, and EV charging stations for each unit. The proposed driveway surface is interlocking pavers.

Demolition and construction activity is anticipated to occur over a period of approximately 24 months. Grading for the proposed project includes excavation of 19,000 cubic yards of soil to accommodate the proposed underground parking garage. Excavated soils would be disposed of off-site.

The project site is located within the San Francisco Bay Area Air Basin, which is within the jurisdiction of the Bay Area Air Quality Management District (air district). An initial study is being prepared pursuant to the California Environmental Quality Act, and a community health risk assessment is being prepared to evaluate project-related single-source and cumulative construction health risks to nearby sensitive receptors within 1,000 feet of the project site.

The entire project site would be disturbed by construction. Figure 1-2, Aerial Photograph, presents an aerial of the project site and delineates the area within which construction is proposed (project site). Figure 1-3, Site Plan, presents the proposed project layout.



0 2 miles

Source: ESRI 2019

Figure 1-1

Location Map

355 First St. Health Risk Assessment

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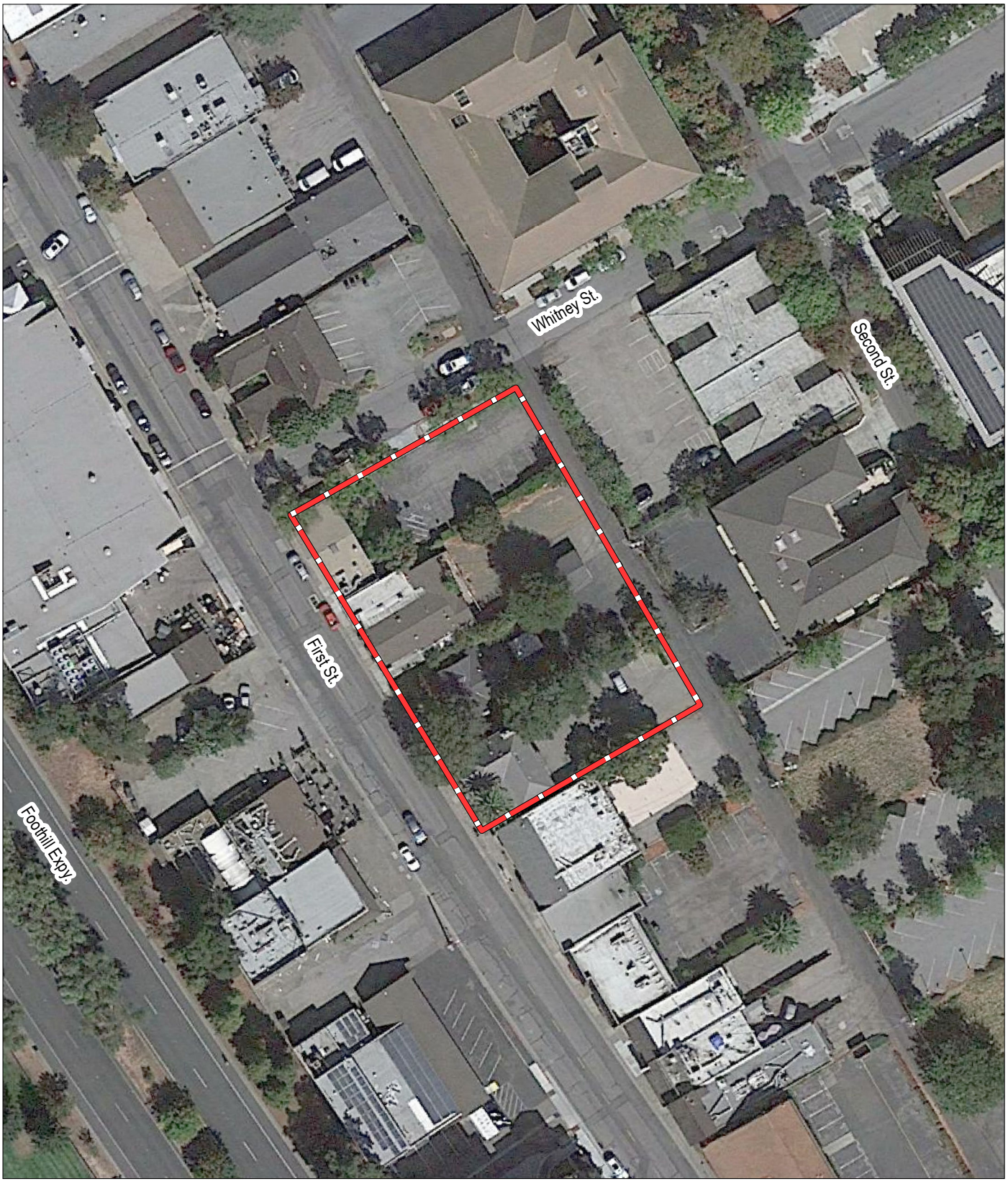

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Property Boundary

Source: Google Earth 2020
Santa Clara County GIS 2020

Figure 1-2

Aerial Photograph

355 First St. Health Risk Assessment

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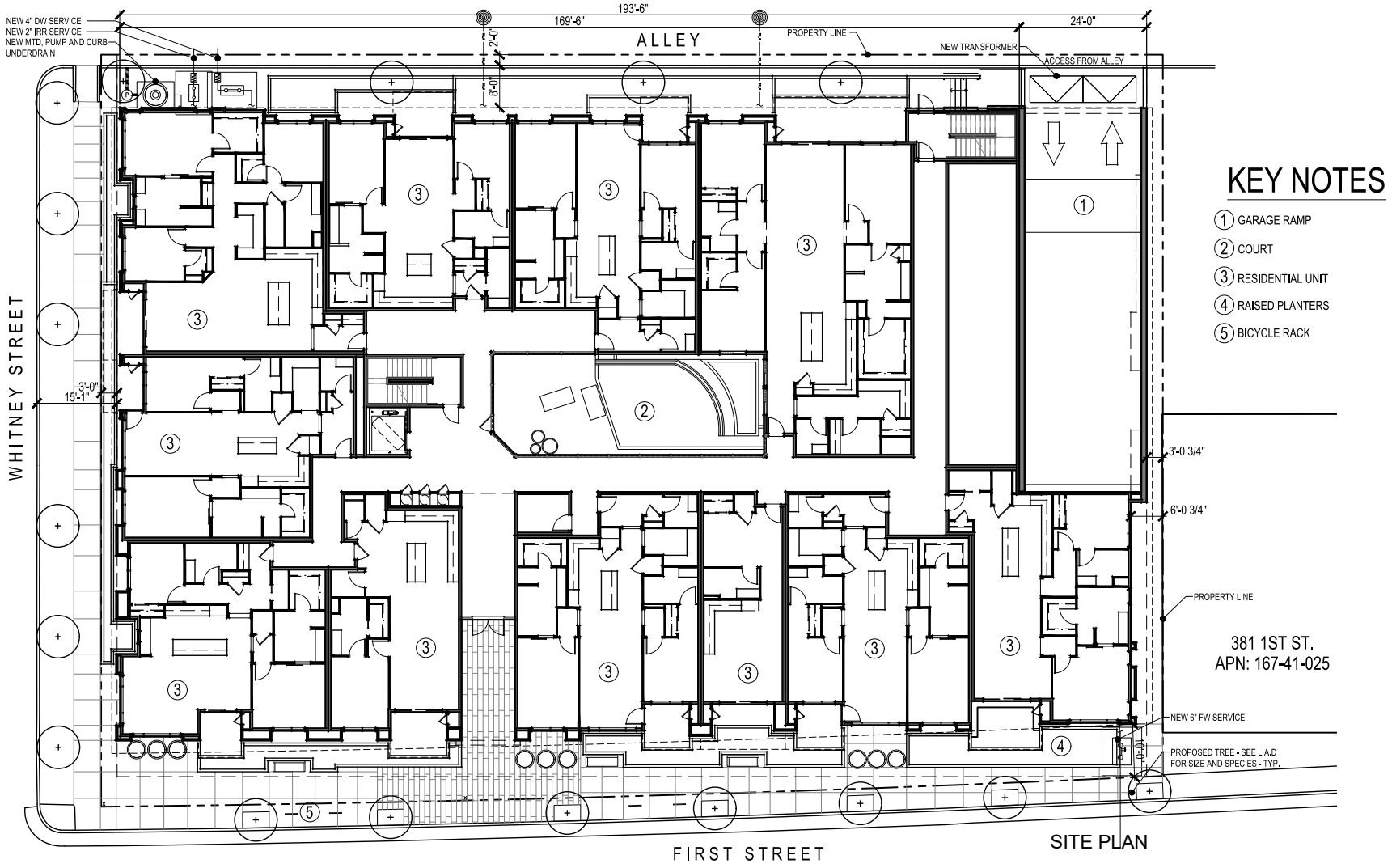

Source: SDG Architects 2021

Figure 1-3
Site Plan

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2.0
Setting

2.1 ENVIRONMENTAL SETTING

Regional Climate and Topography

The project is located in Santa Clara County, which is in the San Francisco Bay Area Air Basin (hereinafter "air basin"). The air basin encompasses all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, and the southern portions of Solano and Sonoma counties.

The topography of the air basin is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys and bays. This complex terrain, especially the higher elevations, distorts the normal wind flow patterns in the air basin. The greatest distortion occurs when low-level inversions are present and the air beneath the inversion flows independently of air above the inversion, a condition that is common in the summer time.

The climate of the air basin is determined largely by a high-pressure system that is usually present over the eastern Pacific Ocean off the west coast of North America. During winter, the Pacific high-pressure system shifts southward, allowing more storms to pass through the region. During summer and early fall, when few storms pass through the region, emissions generated within the Bay Area can combine with abundant sunshine under the restraining influences of topography and subsidence inversions to create conditions that are conducive to the formation of photochemical pollutants, such as ozone, and secondary particulates, such as nitrates and sulfates.

Temperature inversions can often occur during the summer and winter months. An inversion is a layer of warmer air over a layer of cooler air that traps and concentrates pollutants near the ground. As such, the highest air pollutant concentrations in the air basin generally occur during inversions (Bay Area Air Quality Management District 2017).

The project site is located in the Santa Clara Valley climatological subregion. The Santa Clara Valley subregion is bounded by the Bay to the north and by mountains to the east, south and west. Temperatures are warm on summer days and cool on summer nights, and winter temperatures are fairly mild. At the northern end of the valley, mean maximum temperatures are in the low-80's degrees Fahrenheit (°F) during the summer and the high-50's °F during the winter, and mean minimum temperatures range from the high-50's °F in

the summer to the low-40's °F in the winter. Winds in the valley are greatly influenced by the terrain, resulting in a prevailing flow that roughly parallels the valley's northwest-southeast axis. A north-northwesterly sea breeze flows through the valley during the afternoon and early evening, and a light south-southeasterly drainage flow occurs during the late evening and early morning. In the summer the southern end of the valley sometimes becomes a "convergence zone," when air flowing from the Monterey Bay gets channeled northward into the southern end of the valley and meets with the prevailing north-northwesterly winds. Wind speeds are greatest in the spring and summer and weakest in the fall and winter. Nighttime and early morning hours frequently have calm winds in all seasons, while summer afternoons and evenings are quite breezy. Strong winds are rare, associated mostly with the occasional winter storm (Bay Area Air Quality Management District 2017).

The air pollution potential of the Santa Clara Valley is high. High summer temperatures, stable air and mountains surrounding the valley combine to promote ozone formation. In addition to the many local sources of pollution, ozone precursors from San Francisco, San Mateo and Alameda counties are carried by prevailing winds to the Santa Clara Valley. The valley tends to channel pollutants to the southeast. In addition, on summer days with low level inversions, ozone can be recirculated by southerly drainage flows in the late evening and early morning and by the prevailing north-westerly winds in the afternoon. A similar recirculation pattern occurs in the winter, affecting levels of carbon monoxide and particulate matter. This movement of the air up and down the valley increases the impact of the pollutants significantly (Bay Area Air Quality Management District 2017).

Air Pollutants of Concern

The air basin is currently designated as a non-attainment area for state and national ozone standards, for state and national fine particulate matter ($PM_{2.5}$) standards, and state respirable particulate matter (PM_{10}) standards.

Ground-level ozone is caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_X). These precursor pollutants react under certain meteorological conditions to form ground-level ozone. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant in the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less or PM_{10} and fine particulate matter where particles have a diameter of 2.5 micrometers or less $PM_{2.5}$. Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High

particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic Air Contaminants

TACs have the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure or acute (short-term) and/or chronic (long-term) non-cancer health effects. Examples of TACs include certain aromatic and chlorinated hydrocarbons, diesel particulate matter (DPM), certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and non-carcinogenic effects. Non-carcinogenic effects typically affect one or more target organ systems and may be experienced through either acute or chronic exposure to a given TAC.

Construction activity on the project site would generate emissions of TACs from equipment and trucks that could affect nearby sensitive receptors.

Construction Emissions

Construction emissions are typically generated by the use of heavy equipment, the transport of materials, and construction employee commute trips. Construction-related emissions consist primarily of ROG, NO_X, carbon monoxide, and particulate matter (PM_{10} and $PM_{2.5}$). Emissions of ROG, NO_X, carbon monoxide, and exhaust particulate matter are generated primarily by the operation of gas and diesel-powered motor vehicles, asphalt paving activities, and the application of architectural coatings. Fugitive particulate matter emissions are generated primarily by wind erosion of exposed graded surfaces.

Existing Sources of TAC Emissions Near the Project Site

Stationary-source Emissions

A stationary source consists of a single emission source with an identified emission point, such as a stack at an industrial facility. Facilities can have multiple emission point sources located on-site and sometimes the facility as a whole is referred to as a stationary source. Examples of air district-permitted stationary sources include refineries, gasoline dispensing stations, dry cleaning establishments, back-up diesel generators, boilers, heaters, flares, cement kilns, and other types of combustion equipment, as well as non-combustion sources such as coating or printing operations.

According to the air district's Permitted Stationary Source Risks and Hazards geographic information systems (GIS) map tool, two stationary sources (gasoline dispensing facilities) are located within 1,000 feet of the project site. The Main Street Chevron gasoline dispensing station is located at 401 Main Street, approximately 612 feet north of the project site. The Los Altos 76 gasoline dispensing station is located at 330 South San Antonio Road, approximately 500 feet east of the project site. Figure 2-1, Existing Emissions Sources Within 1,000 Feet, illustrates the locations of the two gas stations.

Mobile-source Emissions

Two high-volume roadways are located within 1,000 feet of the project site (refer to Figure 2-1). At their nearest points, Foothill Expressway is located approximately 185 feet west of the site and South San Antonio Road is located approximately 380 feet east of the site.

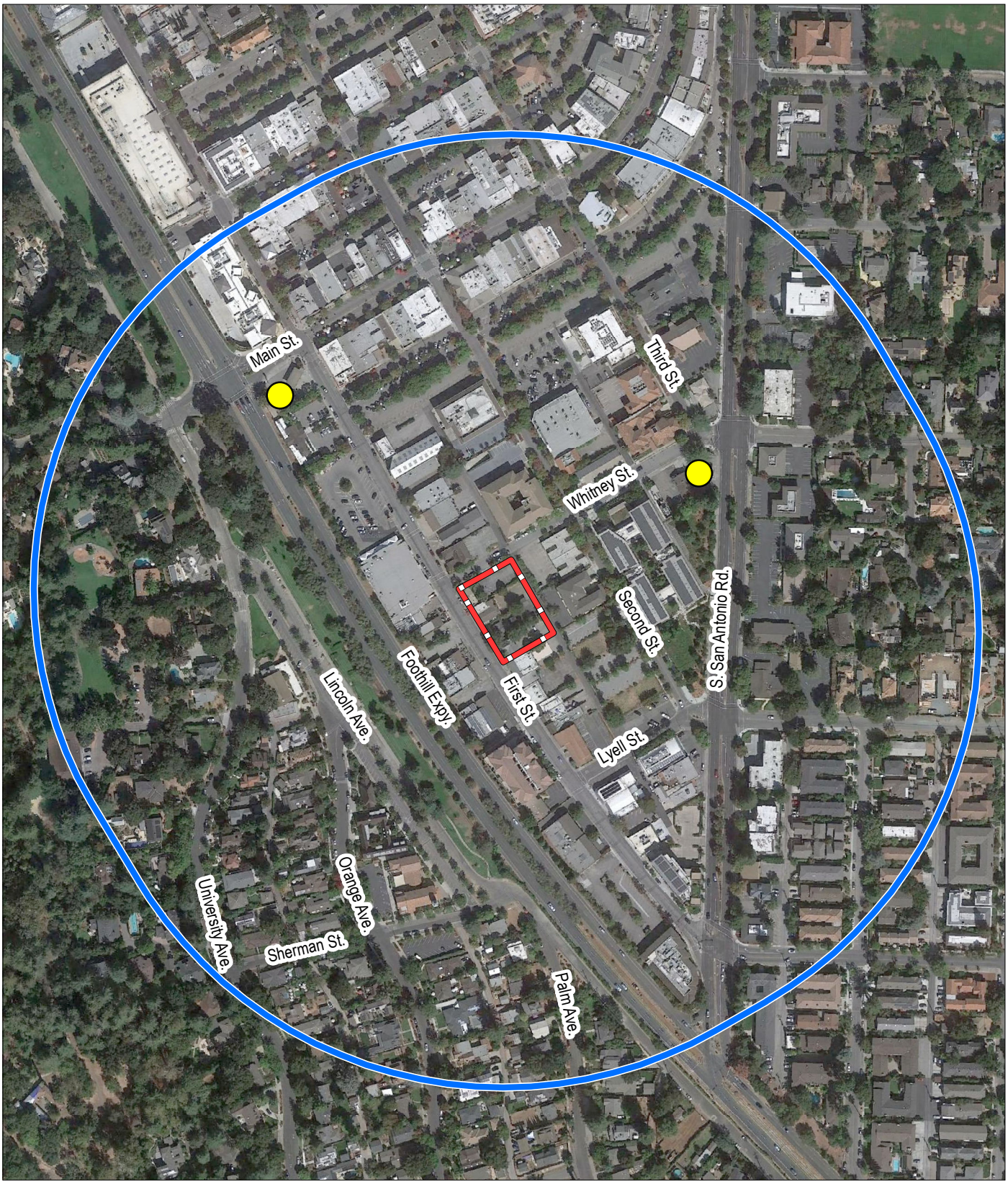
Average Daily Travel (ADT) along Foothill Expressway is 38,940 vehicles per day, while the ADT along South San Antonio Road were 45,200 vehicles per day (Caltrans 2017) (Email Thien Pham, May 7, 2021).

The air district guidance for high-volume roadways is that roadways with traffic counts greater than 10,000 vehicles per day need to be included in a cumulative risk assessment (BAAQMD 2017). Typically, for residential projects located near high-volume roadways, the primary TAC of concern with non-cancer health effects is DPM. Vehicle traffic on South San Antonio Road and Foothill Expressway generates DPM volumes that can negatively affect the health of nearby sensitive receptors.

Sensitive Receptors

There are groups of people more affected by air pollution than others. Children, the elderly, and people with illnesses are especially vulnerable to the effects of air pollution. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer-causing TACs. Residential locations are assumed to include infants and small children.

Existing sensitive receptors located adjacent to or in the vicinity of the project site include residential uses to the west of the Foothill Expressway, and residential uses to the east of South San Antonio Road (Google, Inc. 2021). The project will also introduce new sensitive receptors (residents) to the site whose vehicles would contribute to on-site exposures to mobile source emissions generated by traffic on Foothill Expressway and South San Antonio Road. Figure 2-2, Nearest Sensitive and Worker Receptor Locations, MEI and PMI, presents the locations of sensitive receptors within 1,000 feet of the project site, and the MEI and PMI.



0 325 feet

Property Boundary

Gasoline Dispensing Facility

1,000-foot Radius

Source: Google Earth 2020
Santa Clara County GIS 2020

Figure 2-1

Existing Emissions Sources Within 1,000 Feet

355 First St. Health Risk Assessment

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Source: Google Earth 2020
Santa Clara County GIS 2020

Figure 2-2

Nearest Sensitive and Worker Receptors Locations, MEI, and PMI

355 First St. Health Risk Assessment

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2.2 REGULATORY SETTING

Federal

United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) was established on December 2, 1970 to create a single agency that covered several agency concerns: federal research, monitoring, standard-setting and enforcement.

The EPA regulates diesel engine design and has implemented a series of measures since 1996 to reduce NO_X and particulate emissions from off-road and highway diesel equipment. EPA Tier 1 non-road diesel engine standards were introduced in 1996, Tier 2 in 2001, Tier 3 in 2006, with final Tier 4 in 2014 (DieselNet 2017). Table 2-1, Typical Non-road Engine Emissions Standards, compares emissions standards for NO_X and particulate matter from non-road engine Tier 1 through Tier 4 for typical engine sizes. As illustrated in the table, emissions for these pollutants have decreased significantly for construction equipment manufactured over the past 20 years, and especially for construction equipment manufactured in the past five years. The City of San Francisco has been monitoring the availability of Tier 3 and Tier 4 compliance diesel construction vehicles. Results show that 60 to 70 percent of construction vehicles can meet the Tier 3 and Tier 4 standards.

Table 2-1 Typical Non-road Engine Emissions Standards

Engine Tier and Year Introduced	NO_X Emissions[1]			Particulate Emissions[1]		
	100-175 HP	175-300 HP	300-600 HP	100-175 HP	175-300 HP	300-600 HP
Tier 1 (1996)	6.90	6.90	6.90	--	0.40	0.40
Tier 2 (2001)	--[2]	--[2]	--[2]	0.22	0.15	0.15
Tier 3 (2006)	--[2]	--[2]	--[2]	-- †[3]	-- †[3]	-- †[3]
Tier 4 (2014)	0.30	0.30	0.30	0.015	0.015	0.015

SOURCE: DieselNet 2017

NOTES:

1. Expressed in g/bhp-hr, where g/bhp-hr stands for grams per brake horsepower-hour.
2. Tier 1 standards for NO_X remained in effect.
3. † - Not adopted, engines must meet Tier 2 PM standard.

State

California Air Resources Board

The California Air Resources Board (CARB) oversees regional air district activities and regulates air quality at the state level. CARB has adopted and implemented a number of

regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways.

California Air Toxics Program

The Toxic Air Contaminant Identification and Control Act of 1983 or Assembly Bill 1807 established the California Air Toxics Program that was designed to reduce exposure to air toxics. The program involves a two-step process: risk identification and risk management. In the risk identification step, upon CARB's request, the Office of Environmental Health Hazard Assessment evaluates the health effects of substances other than pesticides and their pesticidal uses. Substances with the potential to be emitted or are currently being emitted into the ambient air may be identified as a TAC. Once a substance is identified as a TAC, and with the participation of local air districts, industry, and interested public, CARB prepares a report that outlines the need and degree to regulate the TAC through a control measure (California Air Resources Board 2020a).

The Air Toxics Hot Spots Information and Assessment Act or AB 2588 was enacted in 1987, and requires stationary sources to report the types and quantities of certain substances their facilities routinely release into the air. The goals of AB 2588 are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, to notify nearby residents of significant risks, and to reduce those significant risks to acceptable levels (California Air Resources Board 2020b).

Truck and Bus Regulation

As heavy-duty on-road vehicles are a significant source of TACs, the Truck and Bus Regulation is one of the most far-reaching and important tools to reduce smog-forming and toxic emissions and protect public health in disadvantaged communities. The Truck and Bus Regulation requires all trucks and buses, by January 1, 2023, to have 2010 or newer model year engines to reduce DPM and NO_x emissions (California Air Resources Board 2020c). To help ensure that the benefits of this regulation are achieved, starting January 1, 2020, only vehicles compliant with this regulation will be registered by the California Department of Motor Vehicles.

In-Use Off-Road Diesel Vehicle Regulation

The goal of the In-Use Off-Road Diesel-Fueled Fleets Regulation is to reduce DPM and NO_x emissions from in-use (existing) off-road heavy-duty diesel vehicles in California (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.) (California Air Resources Board 2020d). This regulation applies to all diesel-powered off-road vehicles with engines 25 horsepower or greater. The regulations are intended to reduce DPM and NO_x exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet averaged emission rates.

Regional/Local

Bay Area Air Quality Management District

The air district is charged with regulatory authority over stationary sources of air emissions, monitoring air quality within the air basin, providing guidelines for analysis of air quality impacts pursuant to California Environmental Quality Act (CEQA), and preparing an air quality management plan to maintain or improve air quality in the air basin. The air district's *2017 CEQA Air Quality Guidelines* (2017 CEQA Guidelines) contain instructions on how to evaluate, measure, and mitigate air quality impacts generated from land development construction and operation activities.

The air district recommends that all receptors located within a 1,000-foot radius of the project's fence line be assessed for potentially significant impacts from the incremental increase in risks or hazards from the proposed new source (air district 2017).

City of Los Altos General Plan

The Los Altos General Plan includes goals, policies, and actions to reduce exposure of the City's sensitive population to exposure of air pollution and toxic air contaminants or TACs. The following goals, policies, and actions are applicable to the proposed project and this assessment:

> Goal 8: Maintain or improve air quality in Los Altos.
>
> Policy 8.1: Support the principles of reducing air pollutants through land use, transportation, and energy use planning.
>
> Policy 8.2: Encourage transportation modes that minimize contaminant emissions from motor vehicle use.
>
> Policy 8.3: Interpret and implement the General Plan to be consistent with the regional Bay Area Air Quality Management Plan, as periodically updated.
>
> Policy 8.4: Ensure location and design of development projects so as to conserve air quality and minimize direct and indirect emissions of air contaminants.

City of Los Altos New Development Best Management Practices Checklist

New development is required to demonstrate compliance with all applicable best management practices outlined in the New Development Best Management Practices Checklist (City of Los Altos, 2014). The checklist includes item number 3.3, requiring the use of Carbon-Efficient Construction Equipment as determined by the Bay Area Air Quality Management District's equipment best practices list shown on Tables 8-1 and 8-2 in the

District's Air Quality Guidelines. The use of Tier 4 diesel engines and electrification of construction sites are considered carbon efficient and effective methods for reducing exposures to construction equipment emissions.

3.0
Significance Criteria and Methodology

3.1 AIR DISTRICT SIGNIFICANCE THRESHOLDS

The air district's 2017 CEQA Guidelines provide cancer and non-cancer thresholds to establish the level at which TACs would cause significant health risks in sensitive receptors. A summary of the air district's community risk significance thresholds is presented in Table 3-1, Air District Community Risk Significance Thresholds.

Table 3-1 Air District Community Risk Significance Thresholds

Health Risks and Hazards	Single Sources Within 1,000-foot Zone of Influence	Cumulative Sources Within 1,000-foot Zone of Influence
Excess Cancer Risk	>10.0 per one million	>100 per one million
Non-Cancer Hazard Index	>1.0	>10.0
Incremental annual $PM_{2.5}$	>0.3 µg/m3	>0.8 µg/m3

SOURCE: Bay Area Air Quality Management District 2017

3.2 METHODOLOGY AND APPROACH

CalEEMod Modeling

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions from construction of the site assuming build-out of the project. Construction data inputs and assumptions are described in greater detail in the model output and memorandum: *355 First Street – Construction Criteria Air Pollutant Emissions Assessment, Methodology and Assumptions* (2021) (Appendix A).

CalEEMod provides annual emissions for both on- and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. Construction data inputs are derived from information provided by the project applicant including construction start and end dates, cut and fill estimates, and the number and type of equipment that would be used in for materials delivery and soils import/export (EMC Planning, 2021).

The proposed project demolition and construction activities were modeled using the CalEEMod default land use category of Condo/Townhouse High Rise. The CalEEMod software calculates the total annual exhaust PM_{10} emissions (assumed to be DPM) from the

off-road construction equipment and on-road vehicles for the overall construction period. The number and type of off-road construction equipment that would be needed for the proposed project was not available in detail sufficient to analyze project-specific construction equipment emissions. As a consequence, the CalEEMod construction equipment defaults were used to estimate on-site emissions. Actual project construction equipment emissions may vary.

The on-road emissions are a result of haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. A trip length of 23.5 miles for cement trucks and 20 miles for vendor trucks were used to represent vehicle travel while at or near the construction site. It was assumed that emissions from on-road vehicles traveling at or near the site would occur at the construction site.

The unmitigated criteria air pollutant emissions resulting from project construction are summarized in Table 3-2, Unmitigated Construction Criteria Air Pollutant Emissions.

Table 3-2 Unmitigated Construction Criteria Air Pollutant Emissions

Construction Emissions[1]	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO_X)	Exhaust Respirable Particulate Matter (PM_{10})	Total Fine Particulate Matter ($PM_{2.5}$)[2]
2022 Annual Emissions (tons/year)	0.70	1.49	0.05	0.08
2023 Annual Emissions (tons/year)	<0.01	0.03	<0.01	<0.01

SOURCE: EMC Planning Group 2021
NOTES:
1. Results may vary due to rounding.
2. Total Fine PM includes fugitive and exhaust $PM_{2.5}$.

Dispersion Modeling

The health risk assessment evaluates the health risk impacts of the project's construction on nearby off-site sensitive receptors. A dispersion modeling analysis was conducted for project-generated short-term DPM emissions from diesel vehicles and construction equipment. The dispersion modeling was performed using the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), which is an air district-recommended model for modeling atmospheric dispersion of emissions. Principal parameters of AERMOD for the project included the following:

- The Five-year meteorological data set (2013-2017) from the San José International Airport provided by the air district;
- Construction emissions were modeled as occurring daily between 8:00 a.m. to 6:00 p.m. from Monday through Friday;

- Combustion equipment exhaust emissions (DPM) were modeled as an area source with an emission release height of 12 feet. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases; and
- Receptor height of 1.5 meters were used to represent the breathing heights of residents in the nearby homes.

Health Risk Calculations

The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) have developed recommended methods for conducting health risk assessments. The *Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments* (2015 risk assessment guidelines) published in February 2015 are the most recent OEHHA risk assessment guidelines. These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines.

Cancer Risk

Potential increased cancer risk from inhalation of TACs are calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency and duration of exposure. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The 2015 risk assessment guidelines recommend that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASF) associated with the different types of exposure include: ASF of 10 for the third trimester and infant exposures, ASF of 3 for a child exposure, and ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day). As recommended by the air district for residential exposures, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, the air district recommends using the 95th percentile breathing rates. Additionally, CARB and the air district

recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults, a 25-year exposure period is recommended by the air district.

The 2015 risk assessment guidelines include adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the air district if there are no schools in the project vicinity that would have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 106

Where;

CPF is Cancer potency factor $(mg/kg\text{-}day)^{-1}$;

ASF is Age sensitivity factor for specified age group;

ED is Exposure duration (years);

AT is Averaging time for lifetime cancer risk (years);

FAH is Fraction of time spent at home (unitless); and

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}.

Where;

C_{air} is Concentration in air ($\mu g/m^3$);

DBR is Daily breathing rate (L/kg body weight-day);

A is Inhalation absorption factor;

EF is Exposure frequency (days/year); and

10^{-6} is Conversion factor.

A summary of the health risk parameters used in this evaluation are presented in Table 3-3, Health Risk Parameters.

Non-Cancer Hazards

Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index, which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total hazard index is calculated as the sum of the hazard indexes for each TAC evaluated. Then the total hazard index is compared to the air

district's significance thresholds to determine whether a significant non-cancer health impact from a project would occur. Typically, for residential projects located near roadways or construction projects with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is DPM. For DPM, the chronic inhalation REL is 5 μg/m^3.

Table 3-3 Health Risk Parameters

Parameter	Exposure Type →	Infant		Child		Adult
	Age Range →	3rd Trimester	0<2	2<9	9<16	16-30
DPM Cancer Potency Factor (mg/kg-day)$^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80th Percentile Rate		273	758	631	572	261
Daily Breathing Rate (L/kg-day) 95th Percentile Rate		361	1,090	861	745	335
Inhalation Absorption Factor		1	1	1	1	1
Averaging Time (years)		70	70	70	70	70
Exposure Duration (years)		0.25	2	14	14	14
Exposure Frequency (days/year)		350	350	350	350	350
Age Sensitivity Factor		10	10	3	3	1
Fraction of Time at Home		0.85-1.0	0.85-1.0	0.72-1.0	0.72-1.0	0.73

SOURCES: Bay Area Air Quality Management District 2016 and Office of Environmental Health Hazard Assessment 2015

Annual $PM_{2.5}$ Concentrations

While not a TAC, $PM_{2.5}$ has been identified by the air district as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under CEQA. The increased annual average concentration of PM2.5 at the project level must not exceed 0.3 μg/m^3. The cumulatively threshold must not exceed 0.08 μg/m^3. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads. Project-generated annual $PM_{2.5}$ emissions were determined using CalEEMod.

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4.0
Analysis

4.1 CONSTRUCTION HEALTH RISKS

Cancer Risk from Diesel Particulate Emissions

Construction of the proposed project would increase lifetime cancer risk (cancer risk) for sensitive receptors within 1,000 feet of the project site who are exposed to the project's temporary construction DPM and $PM_{2.5}$ emissions. Construction emissions were modeled in CalEEMod. Downwind concentrations of DPM were calculated using AERMOD. The location of the Maximally Exposed Individual (MEI) and the Point of Maximum Impact (PMI) were also determined. The PMI is a commercial building located on the north side of Whitney Street adjacent to the project site. The MEI is located at a single-family home 677 feet to the southeast of the project site. The MEI, PMI, and sensitive receptors located within a 1000-foot radius of proposed construction activity, are shown in Figure 2-2, Nearest Sensitive and Worker Receptor Locations, MEI and PMI, presented previously. The annual cancer risks for the years 2022 and 2023 were determined. Detailed health risk calculations and AERMOD model results are included in Appendix B.

Unmitigated Cancer Risks

The modeled unmitigated DPM concentration and maximum cancer risks project-related construction activities at the MEI are summarized in Table 4-1, Unmitigated Construction Cancer Risks at the MEI. The adult cancer risk would not exceed air district threshold and is less than significant. The unmitigated cancer risk for infants and children at the MEI is 12.76 cases per million, which exceeds the air district project risk threshold of 10 cases per million. This is a significant impact, and emissions reductions measures are needed to reduce the cancer risks.

Cancer Risks with Construction Emissions Reductions

Construction equipment emissions need to be reduced by 26-30 percent to stay below the air district threshold of 10 cases per million.

For the project's single-source emissions and cancer risk, the modeled construction equipment inputs were modified in CalEEMod to assume five of the larger construction vehicles (having greater than 50 horsepower engines) would use Tier 4 diesel engines. The modeling results for average daily emissions of DPM (PM_{10}) with and without diesel exhaust reduction measures are presented in Table 4-2, Unmitigated and Mitigated Construction DPM Emissions.

Table 4-1 Unmitigated Construction Cancer Risks at the MEI

Construction Year	DPM PM_{10} Concentration at the MEI[1,2] (ug/m^3)	Infant/Child Cancer Risk (per million)	Adult Cancer Risk (per million)
2022[3] (0.25 years during pregnancy)	0.07	0.95	-
2022	0.07	11.51	0.20
2023	<0.01	0.30	<0.01
Total Project Cancer Risk	-	12.76	0.21
Air District Single-Source Threshold	-	10.0	10.0
Exceeds Thresholds?	-	*YES*	*NO*

SOURCES: EMC Planning Group 2021 and Bay Area Air Quality Management District 2017.
NOTES:
1. Results have been rounded, and may, therefore, vary slightly.
2. The MEI is located at a house located to the south and adjacent to the project site. The UTM coordinates are approximately 578484 meters Easting and 4136856 meters Northing (Refer to Figure 4-1).
3. Per OEHHA and air district direction, pregnancies are included in the first-year calculations.

Table 4-2 Unmitigated and Mitigated Construction DPM Emissions.

Emissions Year	Unmitigated Exhaust DPM (PM_{10})	Mitigated Exhaust DPM (PM_{10})	Percent Reduction
2022 Annual Emissions (tons/year)	0.05	0.04	26
2023 Annual Emissions (tons/year)	<0.01	<0.01	30

SOURCE: EMC Planning Group 2021
NOTES:
1. Results may vary due to rounding.
2. CalEEMod estimates construction criteria air pollutant emissions in tons per year.

The modeling shows that the construction DPM emissions concentrations can be reduced by up to 30 percent overall by the use of Tier 4 engines on at least five construction equipment vehicles with 50 horsepower or greater engines. Adherence to the air district's best management practices for the control of equipment exhaust PM_{10}, although not quantifiable using CalEEMod, would further reduce DPM emissions. The CalEEMod modeling results are included in Appendix A.

Table 4-3, Mitigated Construction Cancer Risks at the MEI, illustrates the reduction in cancer risks at the location of the MEI that would be achieved by implementation of the mitigation strategy described above.

Table 4-3 Mitigated Construction Cancer Risks at the MEI

Construction Year	DPM PM_{10} Concentration at the MEI[1,2] (ug/m^3)	Infant/Child Cancer Risk (per million)	Adult Cancer Risk (per million)
2022[3] (0.25 years during pregnancy)	0.05	0.07	-
2022	0.05	8.49	0.15
2023	0.001	0.21	0.004
Total Project Cancer Risk	-	9.40	0.15
Air District Single-Source Threshold	-	10.0	10.0
Exceeds Thresholds?	-	*NO*	*NO*

SOURCES: EMC Planning Group 2021 and Bay Area Air Quality Management District 2017.
NOTES:
1. Results have been rounded, and may, therefore, vary slightly.
2. The MEI is located at a residence located to the south and east of the project site. The UTM coordinates are approximately 578484 meters Easting and 4136856 meters Northing (Refer to Figure 4-1).
3. Per OEHHA and air district direction, pregnancies are included in the first-year calculations.

$PM_{2.5}$ Emissions

Construction $PM_{2.5}$ emissions were also modeled. Table 4-4, Unmitigated Average $PM_{2.5}$ Concentrations at the MEI, compares the modeled unmitigated $PM_{2.5}$ emissions concentrations with air district single-source threshold. The $PM_{2.5}$ threshold concentration applies to each year, but is not additive. The maximum concentration year is compared to the threshold. $PM_{2.5}$ emissions concentrations would not exceed the air district threshold with or without implementation of the mitigation strategy outlined previously. As a result, health risks associated with exposures to project construction $PM_{2.5}$ emissions are less than significant.

Table 4-4 Unmitigated Average $PM_{2.5}$ Concentrations at the MEI

Construction Year[1]	Unmitigated Average $PM_{2.5}$ Concentrations (ug/m^3)
2022	0.12
2023	<0.01
Air District Single-Source Threshold	0.30
Exceeds Thresholds?	*NO*

SOURCES: EMC Planning Group 2021 and Bay Area Air Quality Management District 2017
NOTE: Results have been rounded, and may, therefore, vary slightly.

Chronic Exposures

DPM emissions are chronically toxic. To determine if the concentration of DPM exceeds the Chronic Reference Exposure Level (REL), the downwind concentrations of DPM were also modeled. Table 4-5, Unmitigated Average DPM Concentrations at the MEI, presents the average annual downwind DPM concentrations with air district thresholds.

Table 4-5 Unmitigated Average DPM Concentrations at the MEI

Construction Year[1]	Average DPM Concentrations (ug/m^3)
2022	0.07
2023	<0.01
Air District Single-Source Threshold: Chronic REL	5.0
2022 Hazard Index	0.01
2023 Hazard Index	<0.01
Exceeds Thresholds?	*NO*

SOURCES: EMC Planning Group 2021 and Bay Area Air Quality Management District 2017
NOTES:
1. Results have been rounded, and may, therefore, vary slightly.

Model results for maximum downwind DPM concentrations would not exceed the air district's significance threshold for chronic toxicity. Therefore, chronic health risks associated with the project's downwind DPM concentrations during construction are less than significant.

Discussion Summary

The model results show that the unmitigated adult cancer risk, $PM_{2.5}$ health risks and chronic DPM health risks resulting from exposures to project construction emissions are less than significant. However, during project construction, project equipment exhaust DPM emissions would increase the infant/child cancer risk above the air district's single-source cancer risk threshold of 10 cases per million.

Adherence to air district guidance for the control of construction equipment exhaust would reduce cancer risks associated with DPM emissions, but the best management practices are not quantifiable and therefore, a determination that the impact would be reduced to a less-than-significant level cannot be made with certainty. As a consequence, without additional mitigation, project construction activity would result in infant/child cancer risks at the MEI that would exceed air district's single-source thresholds. Emissions reductions are needed during construction to reduce DPM emissions associated with infant/child cancer risks to below the air district's single-source threshold.

Implementation of the following mitigation measures would reduce the impact to less than significant:

Mitigation Measures

AQ-1 The project applicant shall include the following BAAQMD best management practices on the project plans and the contract shall implement them during all phases of construction:

a. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour;

b. 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 [CCR]). Clear signage shall be provided for construction workers at all access points; and

c. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

AQ-2 Prior to the issuance of the demolition and grading permits, the project developer shall prepare, and the project contractor shall implement, a demolition and construction emissions avoidance and reduction plan demonstrating a minimum 30 percent reduction in DPM emissions.

The plan shall be prepared at the applicant's expense and shall be reviewed and approved by the City's Director of Planning or Director's designee, prior to issuance of demolition and grading permits. The plan shall be accompanied by a letter prepared by a qualified air quality consultant, verifying the equipment included in the plan meets the standards set forth in this mitigation measure. The plan shall include the following measures:

a. At least five of the mobile diesel-powered off-road equipment operating on-site for more than two days and larger than 50 horsepower shall, at a minimum, meet U.S. Environmental Protection Agency (EPA) particulate matter emissions standards for Tier 4 engines. The plan shall include specifications of the equipment to be used during construction and confirmation this requirement is met;

b. Other demonstrable measures identified by the developer and confirmed by the air quality consultant, that reduce emissions and avoid or minimize the affected sensitive receptors exposures by at least 30 percent.

Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce the project's single-source construction DPM emissions and their related cancer risks to a less-than-significant level.

4.2 CUMULATIVE HEALTH RISKS

Existing Community Health Risks

Local Roadways

As noted in Section 2, Foothill Expressway and South San Antonio Road are two high-volume roadways located within 1,000 feet of the project site (refer to Figure 2-1), both of which have average daily traffic volumes of greater than 10,000 vehicles. All other area streets are assumed to have fewer than 10,000 vehicles per day.

This analysis of TAC emissions from these roadways shows the emissions and health risks associated with diesel particulate matter PM_{10} and $PM_{2.5}$. The air district has modeled the cancer risk and $PM_{2.5}$concentrations at the construction MEI from roadways and railways (Appendix D). Note that the rail line is outside the 1000-foot boundary. DPM cancer risks exposures from existing roadway mobile sources within 1,000 feet of the project site do not exceed the air district's cumulative threshold.

Table 4-6, Existing Roadway Risks and $PM_{2.5}$ Concentrations at the MEI, summarizes the existing health risks at the construction MEI from exposure to vehicle emissions on Foothill Expressway and South San Antonio Road.

Table 4-6 Existing Roadway Cancer Risks and $PM_{2.5}$ Concentrations at the MEI

Roadway	Cancer Risk (per million)	Annual $PM_{2.5}$ Concentration (µg/m3)
Highway	3.95	0.09
Major Street	6.87	0.15
Total	10.82	0.24

SOURCE: EMC Planning Group 2021, BAAQMD 2017

The existing adult cancer risk is below the air district threshold of 100 cases per million and is less than cumulatively considerable. The annual $PM_{2.5}$ concentrations are below the 0.8 ug/m^3 cumulative threshold for $PM_{2.5}$ and are also less than cumulatively considerable.

Stationary Sources

Permitted stationary sources of TACs near the project site were identified using the air district's Permitted Stationary Source Risks and Hazards GIS map tool. This mapping tool identifies the location of nearby stationary sources and their estimated risk and hazard impacts. Two permitted stationary sources, the Los Altos 76 gas station and the Main Street Chevron gasoline station, are located within a 1,000-foot radius of the project site (refer to Figure 2-1). Neither emits $PM_{2.5}$. Gasoline is evaporated from the fueling of vehicles. No other permitted stationary sources are located within the 1000-foot radius of the project. Table 4-7, Health Risks from Permitted Sources within 1000 Feet of Project, presents health risks associated with existing permitted stationary sources.

Table 4-7 Health Risks from Permitted Sources within 1000 feet of Project

Source[1]	Address	Cancer Risk (per million)	Hazard Index
Los Altos 76 (gasoline dispensing facility)	330 S. San Antonio Road	15.65	0.07
Main Street Chevron (gasoline dispensing facility)	401 Main Street	22.37	0.10
Total	-	38.02	0.17

SOURCE: BAAQMD 2021

NOTE: Results represent the health risk at the point of maximum impact (PMI) for each source during 2018. The location of the PMI varies with each source, but were added together for a worst-case screening scenario.

Cumulative Impacts

Cumulative community cancer risks from existing mobile and stationary sources do not exceed the air district cumulative significance threshold of 100 cases per million. The cumulative community risk impacts and the project's contribution to them during construction are summarized in Table 4-8, Cumulative Heath Risks at Construction MEIs.

Community Health Risks

Unmitigated project construction emissions contribute to less than significant cumulative cancer risks and other health risks associated with exposures to $PM_{2.5}$ emissions and chronic health risks from exposures to DPM emissions. As shown in Table 4-8, cumulative community cancer and health risks are below the air district's cumulative thresholds with or without the project. The project's contribution to cumulative cancer risk and health risks are less than cumulatively considerable.

Table 4-8 Cumulative Health Risks at Construction MEIs

Source	Cancer Risk (per million)[1]	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)[1]	Chronic Hazard Index[1]
Air District Cumulative-Source Threshold	100.0	0.80	10.0
Mobile Sources at MEI	10.82	0.24	-
Permitted sources within 1,000 feet	38.02	0	<0.01
Cumulative[2] Without Project	48.84	0.24	<0.01
Exceeds Thresholds (Without Project)?	*NO*	*NO*	*NO*
Project (Unmitigated)	12.76	0.15	0.01
Cumulative with Unmitigated Project[1,2]	61.60	0.39	0.01
Exceeds Thresholds (Unmitigated)?	*NO*	*NO*	*NO*
Project (Mitigated, Tier 4 Engines)	*9.4*	*0.09*	*0.001*
Cumulative with Mitigated Project[1,2]	59.72	0.33	0.01
Exceeds Thresholds (Mitigated)?	*NO*	*NO*	*NO*

SOURCE: EMC Planning Group 2021
NOTES:
1. Results have been rounded, and may, therefore, vary slightly.
2. Includes emissions reductions due to implementation of Mitigation Measure AQ-1.

Discussion Summary

As illustrated by Table 4-8, community cancer risk, $PM_{2.5}$ and chronic health risks from existing emissions sources would not exceed the air district cumulative thresholds with or without the project. Therefore, the project's contribution to cumulative community cancer and health risks are less than cumulatively considerable.

On-site Exposures

Future residents of the project that drive would contribute to vehicle traffic and subsequent emissions exposures at the project site from vehicles on Foothill Expressway and South San Antonio Road. According to the traffic report prepared for the project (Hexagon 2021), the proposed project would add a net average of approximately 196 trips to the circulation network, with 35 percent of project daily vehicle trips (69 trips) using Foothill Expressway and 30 percent of vehicle trips (59 trips) using South San Antonio Road. As noted in Section 2, Foothill Expressway has an ADT of 38,940 vehicles per day, and South San Antonio Road has an ADT of 45,200 vehicles per day. The addition of project traffic to Foothill Expressway represents a less than 0.10 percent increase to ADT; the addition of project traffic to South San Antonio Road represents a less than 0.10 percent increase in traffic. The increase in emissions and exposures to them from the addition of project traffic to the two roadways would be negligible and the increase in cancer risks and other health risks to future residents on the project site would be less than cumulatively considerable.

5.0
Report Preparers

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6.0
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APPENDIX A

CalEEMod Construction Emissions Modeling Assumptions, Methodology, and Results

355 First Street Condominiums Los Altos CA CONSTRUCTION

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 with Elevator	51.02	1000sqft	0.00	51,020.00	0
Other Non-Asphalt Surfaces	1.70	1000sqft	0.04	1,700.00	0
Condo/Townhouse High Rise	50.00	Dwelling Unit	0.64	79,431.00	143

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	206	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Carbon intensity factor updated per CEC

Land Use - Includes off-site sidewalk improvements

Construction Phase - Derived from applicant information (24 months total)

Trips and VMT - Derived from applicant information

Demolition - Derived from Applicant information

Grading -

Vehicle Trips - Updated to ITE 9th edition

Woodstoves - Municipal Code Chapter 12.64 prohibits wood-burning fireplaces, default switched to gas

Energy Use -

Sequestration -

Construction Off-road Equipment Mitigation - Standard BAAQMD dust control watering and vehicle speed

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - Reflects compliance with 2019 Title 24 Building Energy Efficiency Standards

Water Mitigation - Required Compliance with State MWELO

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	5
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	100.00	200.00
tblConstructionPhase	NumDays	2.00	48.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	1.00	10.00
tblFireplaces	NumberGas	7.50	16.00
tblFireplaces	NumberWood	8.50	0.00
tblGrading	MaterialExported	0.00	19,000.00
tblGrading	MaterialImported	0.00	800.00
tblLandUse	LandUseSquareFeet	50,000.00	79,431.00
tblLandUse	LotAcreage	1.17	0.00
tblLandUse	LotAcreage	0.78	0.64
tblProjectCharacteristics	CO2IntensityFactor	641.35	206
tblTripsAndVMT	HaulingTripLength	20.00	23.00
tblTripsAndVMT	HaulingTripLength	20.00	23.00
tblTripsAndVMT	HaulingTripNumber	0.00	72.00
tblTripsAndVMT	VendorTripLength	7.30	10.00
tblTripsAndVMT	VendorTripLength	7.30	20.00
tblTripsAndVMT	VendorTripLength	7.30	20.00
tblVehicleTrips	WD_TR	4.18	5.18

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.6985	1.4901	1.2231	3.8400e-003	0.1161	0.0506	0.1666	0.0361	0.0470	0.0831	0.0000	353.7963	353.7963	0.0479	0.0000	354.9941
2023	3.4000e-003	0.0331	0.0351	1.0000e-004	3.3700e-003	1.3100e-003	4.6700e-003	9.1000e-004	1.2000e-003	2.1100e-003	0.0000	8.9182	8.9182	1.4300e-003	0.0000	8.9540
Maximum	**0.6985**	**1.4901**	**1.2231**	**3.8400e-003**	**0.1161**	**0.0506**	**0.1666**	**0.0361**	**0.0470**	**0.0831**	**0.0000**	**353.7963**	**353.7963**	**0.0479**	**0.0000**	**354.9941**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.6759	1.2048	1.2673	3.8400e-003	0.1036	0.0373	0.1410	0.0303	0.0348	0.0651	0.0000	353.7962	353.7962	0.0479	0.0000	354.9939
2023	2.7300e-003	0.0248	0.0367	1.0000e-004	3.3700e-003	9.2000e-004	4.2800e-003	9.1000e-004	8.4000e-004	1.7500e-003	0.0000	8.9182	8.9182	1.4300e-003	0.0000	8.9540
Maximum	**0.6759**	**1.2048**	**1.2673**	**3.8400e-003**	**0.1036**	**0.0373**	**0.1410**	**0.0303**	**0.0348**	**0.0651**	**0.0000**	**353.7962**	**353.7962**	**0.0479**	**0.0000**	**354.9939**

	ROG	NOx	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	**3.31**	**19.28**	**-3.64**	**0.00**	**10.43**	**26.26**	**15.22**	**15.61**	**25.99**	**21.49**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-3-2022	4-2-2022	1.1471	1.0803
2	4-3-2022	7-2-2022	0.3550	0.2758
3	7-3-2022	10-2-2022	0.3451	0.2635
4	10-3-2022	1-2-2023	0.3474	0.2660
5	1-3-2023	4-2-2023	0.0294	0.0222
		Highest	1.1471	1.0803

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	0.3860	6.5800e-003	0.4078	1.5000e-004		8.0200e-003	8.0200e-003		8.0200e-003	8.0200e-003	0.7798	2.6048	3.3847	4.2700e-003	4.0000e-005	3.5022
Energy	2.3500e-003	0.0201	8.5600e-003	1.3000e-004		1.6300e-003	1.6300e-003		1.6300e-003	1.6300e-003	0.0000	72.1692	72.1692	7.3300e-003	1.8500e-003	72.9038
Mobile	0.0486	0.2264	0.5455	2.1700e-003	0.2065	1.7600e-003	0.2082	0.0554	1.6500e-003	0.0571	0.0000	199.4882	199.4882	6.7000e-003	0.0000	199.6557
Waste						0.0000	0.0000		0.0000	0.0000	4.6688	0.0000	4.6688	0.2759	0.0000	11.5667
Water						0.0000	0.0000		0.0000	0.0000	1.0335	2.3188	3.3523	0.1065	2.5700e-003	6.7813
Total	**0.4369**	**0.2531**	**0.9619**	**2.4500e-003**	**0.2065**	**0.0114**	**0.2179**	**0.0554**	**0.0113**	**0.0667**	**6.4822**	**276.5810**	**283.0631**	**0.4007**	**4.4600e-003**	**294.4097**

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	0.3820	6.0000e-003	0.3721	3.0000e-005		2.2000e-003	2.2000e-003		2.2000e-003	2.2000e-003	0.0000	2.6048	2.6048	6.2000e-004	4.0000e-005	2.6313
Energy	1.8600e-003	0.0159	6.7600e-003	1.0000e-004		1.2800e-003	1.2800e-003		1.2800e-003	1.2800e-003	0.0000	61.0700	61.0700	6.3600e-003	1.5800e-003	61.6998
Mobile	0.0433	0.1947	0.4226	1.5600e-003	0.1436	1.3000e-003	0.1449	0.0385	1.2100e-003	0.0398	0.0000	143.4690	143.4690	5.2100e-003	0.0000	143.5993
Waste						0.0000	0.0000		0.0000	0.0000	4.6688	0.0000	4.6688	0.2759	0.0000	11.5667
Water						0.0000	0.0000		0.0000	0.0000	1.0335	2.2778	3.3113	0.1065	2.5700e-003	6.7398
Total	**0.4272**	**0.2166**	**0.8015**	**1.6900e-003**	**0.1436**	**4.7800e-003**	**0.1484**	**0.0385**	**4.6900e-003**	**0.0432**	**5.7023**	**209.4216**	**215.1239**	**0.3946**	**4.1900e-003**	**226.2370**

	ROG	NOx	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	**2.24**	**14.42**	**16.68**	**31.02**	**30.45**	**58.11**	**31.90**	**30.45**	**58.50**	**35.19**	**12.03**	**24.28**	**24.00**	**1.53**	**6.05**	**23.16**

3.0 Construction Detail

Construction Phase

355 First Street Condominiums Los Altos CA CONSTRUCTION - 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	1/3/2022	1/14/2022	5	10	
2	Paving	Paving	1/12/2022	1/25/2022	5	10	
3	Site Preparation	Site Preparation	1/15/2022	1/28/2022	5	10	
4	Architectural Coating	Architectural Coating	1/26/2022	2/8/2022	5	10	
5	Grading	Grading	1/29/2022	4/6/2022	5	48	
6	Building Construction	Building Construction	4/7/2022	1/11/2023	5	200	

Acres of Grading (Site Preparation Phase): 5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.04

Residential Indoor: 160,848; Residential Outdoor: 53,616; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,163 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	8.00	10.80	10.00	23.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	20.00	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	2,475.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	58.00	14.00	72.00	10.80	20.00	23.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					
Fugitive Dust					8.1000e-004	0.0000	8.1000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5500e-003	0.0321	0.0374	6.0000e-005		1.6900e-003	1.6900e-003		1.6100e-003	1.6100e-003	0.0000	5.2068	5.2068	9.6000e-004	0.0000	5.2308
Total	**3.5500e-003**	**0.0321**	**0.0374**	**6.0000e-005**	**8.1000e-004**	**1.6900e-003**	**2.5000e-003**	**1.2000e-004**	**1.6100e-003**	**1.7300e-003**	**0.0000**	**5.2068**	**5.2068**	**9.6000e-004**	**0.0000**	**5.2308**

3.2 Demolition - 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	3.0000e-005	1.0900e-003	2.5000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.3376	0.3376	2.0000e-005	0.0000	0.3380
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	1.4000e-004	9.0000e-005	1.0300e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3218	0.3218	1.0000e-005	0.0000	0.3219
Total	**1.7000e-004**	**1.1800e-003**	**1.2800e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.6594**	**0.6594**	**3.0000e-005**	**0.0000**	**0.6600**

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					3.7000e-004	0.0000	3.7000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9800e-003	0.0255	0.0376	6.0000e-005		1.3500e-003	1.3500e-003		1.3000e-003	1.3000e-003	0.0000	5.2068	5.2068	9.6000e-004	0.0000	5.2308
Total	**2.9800e-003**	**0.0255**	**0.0376**	**6.0000e-005**	**3.7000e-004**	**1.3500e-003**	**1.7200e-003**	**6.0000e-005**	**1.3000e-003**	**1.3600e-003**	**0.0000**	**5.2068**	**5.2068**	**9.6000e-004**	**0.0000**	**5.2308**

3.2 Demolition - 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	3.0000e-005	1.0900e-003	2.5000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.3376	0.3376	2.0000e-005	0.0000	0.3380
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	1.4000e-004	9.0000e-005	1.0300e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3218	0.3218	1.0000e-005	0.0000	0.3219
Total	**1.7000e-004**	**1.1800e-003**	**1.2800e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.6594**	**0.6594**	**3.0000e-005**	**0.0000**	**0.6600**

3.3 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	3.2300e-003	0.0296	0.0352	6.0000e-005		1.4800e-003	1.4800e-003		1.3800e-003	1.3800e-003	0.0000	4.6984	4.6984	1.3700e-003	0.0000	4.7326
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.2300e-003**	**0.0296**	**0.0352**	**6.0000e-005**		**1.4800e-003**	**1.4800e-003**		**1.3800e-003**	**1.3800e-003**	**0.0000**	**4.6984**	**4.6984**	**1.3700e-003**	**0.0000**	**4.7326**

3.3 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	2.6000e-004	1.7000e-004	1.8600e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5792	0.5792	1.0000e-005	0.0000	0.5795
Total	**2.6000e-004**	**1.7000e-004**	**1.8600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5792**	**0.5792**	**1.0000e-005**	**0.0000**	**0.5795**

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	3.1700e-003	0.0288	0.0352	6.0000e-005		1.4300e-003	1.4300e-003		1.3400e-003	1.3400e-003	0.0000	4.6984	4.6984	1.3700e-003	0.0000	4.7326
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.1700e-003**	**0.0288**	**0.0352**	**6.0000e-005**		**1.4300e-003**	**1.4300e-003**		**1.3400e-003**	**1.3400e-003**	**0.0000**	**4.6984**	**4.6984**	**1.3700e-003**	**0.0000**	**4.7326**

3.3 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	2.6000e-004	1.7000e-004	1.8600e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5792	0.5792	1.0000e-005	0.0000	0.5795
Total	**2.6000e-004**	**1.7000e-004**	**1.8600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5792**	**0.5792**	**1.0000e-005**	**0.0000**	**0.5795**

3.4 Site Preparation - 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					
Fugitive Dust					2.6500e-003	0.0000	2.6500e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9000e-003	0.0347	0.0198	5.0000e-005		1.2900e-003	1.2900e-003		1.1800e-003	1.1800e-003	0.0000	4.2752	4.2752	1.3800e-003	0.0000	4.3098
Total	**2.9000e-003**	**0.0347**	**0.0198**	**5.0000e-005**	**2.6500e-003**	**1.2900e-003**	**3.9400e-003**	**2.9000e-004**	**1.1800e-003**	**1.4700e-003**	**0.0000**	**4.2752**	**4.2752**	**1.3800e-003**	**0.0000**	**4.3098**

3.4 Site Preparation - 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	7.0000e-005	5.0000e-005	5.2000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1609	0.1609	0.0000	0.0000	0.1610
Total	**7.0000e-005**	**5.0000e-005**	**5.2000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1609**	**0.1609**	**0.0000**	**0.0000**	**0.1610**

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					1.1900e-003	0.0000	1.1900e-003	1.3000e-004	0.0000	1.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1500e-003	9.2300e-003	0.0261	5.0000e-005		4.1000e-004	4.1000e-004		3.7000e-004	3.7000e-004	0.0000	4.2752	4.2752	1.3800e-003	0.0000	4.3098
Total	**1.1500e-003**	**9.2300e-003**	**0.0261**	**5.0000e-005**	**1.1900e-003**	**4.1000e-004**	**1.6000e-003**	**1.3000e-004**	**3.7000e-004**	**5.0000e-004**	**0.0000**	**4.2752**	**4.2752**	**1.3800e-003**	**0.0000**	**4.3098**

3.4 Site Preparation - 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	7.0000e-005	5.0000e-005	5.2000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1609	0.1609	0.0000	0.0000	0.1610
Total	**7.0000e-005**	**5.0000e-005**	**5.2000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1609**	**0.1609**	**0.0000**	**0.0000**	**0.1610**

3.5 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	0.5701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	**0.5712**	**7.0400e-003**	**9.0700e-003**	**1.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

3.5 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	1.7000e-004	1.1000e-004	1.2400e-003	0.0000	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3861	0.3861	1.0000e-005	0.0000	0.3863
Total	**1.7000e-004**	**1.1000e-004**	**1.2400e-003**	**0.0000**	**4.7000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3861**	**0.3861**	**1.0000e-005**	**0.0000**	**0.3863**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	**0.5712**	**7.0400e-003**	**9.0700e-003**	**1.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

3.5 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	1.7000e-004	1.1000e-004	1.2400e-003	0.0000	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3861	0.3861	1.0000e-005	0.0000	0.3863
Total	**1.7000e-004**	**1.1000e-004**	**1.2400e-003**	**0.0000**	**4.7000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3861**	**0.3861**	**1.0000e-005**	**0.0000**	**0.3863**

3.6 Grading - 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					
Fugitive Dust					0.0192	0.0000	0.0192	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0170	0.1539	0.1793	2.9000e-004		8.1000e-003	8.1000e-003		7.7400e-003	7.7400e-003	0.0000	24.9926	24.9926	4.6100e-003	0.0000	25.1080
Total	**0.0170**	**0.1539**	**0.1793**	**2.9000e-004**	**0.0192**	**8.1000e-003**	**0.0273**	**0.0101**	**7.7400e-003**	**0.0178**	**0.0000**	**24.9926**	**24.9926**	**4.6100e-003**	**0.0000**	**25.1080**

3.6 Grading - 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	9.1900e-003	0.3069	0.0699	9.5000e-004	0.0209	8.9000e-004	0.0218	5.7500e-003	8.5000e-004	6.6000e-003	0.0000	92.3472	92.3472	4.6700e-003	0.0000	92.4638
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	6.9000e-004	4.6000e-004	4.9500e-003	2.0000e-005	1.9000e-003	1.0000e-005	1.9100e-003	5.0000e-004	1.0000e-005	5.2000e-004	0.0000	1.5444	1.5444	3.0000e-005	0.0000	1.5452
Total	**9.8800e-003**	**0.3074**	**0.0748**	**9.7000e-004**	**0.0228**	**9.0000e-004**	**0.0237**	**6.2500e-003**	**8.6000e-004**	**7.1200e-003**	**0.0000**	**93.8916**	**93.8916**	**4.7000e-003**	**0.0000**	**94.0090**

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					8.6300e-003	0.0000	8.6300e-003	4.5500e-003	0.0000	4.5500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0143	0.1224	0.1805	2.9000e-004		6.4700e-003	6.4700e-003		6.2400e-003	6.2400e-003	0.0000	24.9926	24.9926	4.6100e-003	0.0000	25.1079
Total	**0.0143**	**0.1224**	**0.1805**	**2.9000e-004**	**8.6300e-003**	**6.4700e-003**	**0.0151**	**4.5500e-003**	**6.2400e-003**	**0.0108**	**0.0000**	**24.9926**	**24.9926**	**4.6100e-003**	**0.0000**	**25.1079**

3.6 Grading - 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	9.1900e-003	0.3069	0.0699	9.5000e-004	0.0209	8.9000e-004	0.0218	5.7500e-003	8.5000e-004	6.6000e-003	0.0000	92.3472	92.3472	4.6700e-003	0.0000	92.4638
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	6.9000e-004	4.6000e-004	4.9500e-003	2.0000e-005	1.9000e-003	1.0000e-005	1.9100e-003	5.0000e-004	1.0000e-005	5.2000e-004	0.0000	1.5444	1.5444	3.0000e-005	0.0000	1.5452
Total	**9.8800e-003**	**0.3074**	**0.0748**	**9.7000e-004**	**0.0228**	**9.0000e-004**	**0.0237**	**6.2500e-003**	**8.6000e-004**	**7.1200e-003**	**0.0000**	**93.8916**	**93.8916**	**4.7000e-003**	**0.0000**	**94.0090**

3.7 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0659	0.6745	0.6867	1.0900e-003		0.0357	0.0357		0.0329	0.0329	0.0000	96.1418	96.1418	0.0311	0.0000	96.9191
Total	**0.0659**	**0.6745**	**0.6867**	**1.0900e-003**		**0.0357**	**0.0357**		**0.0329**	**0.0329**	**0.0000**	**96.1418**	**96.1418**	**0.0311**	**0.0000**	**96.9191**

3.7 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	2.9000e-004	9.4000e-003	2.1800e-003	3.0000e-005	6.9000e-004	3.0000e-005	7.2000e-004	1.9000e-004	3.0000e-005	2.2000e-004	0.0000	2.9170	2.9170	1.4000e-004	0.0000	2.9206
Vendor	7.9300e-003	0.2294	0.0592	8.6000e-004	0.0241	6.7000e-004	0.0248	6.9600e-003	6.4000e-004	7.6000e-003	0.0000	82.7807	82.7807	2.7700e-003	0.0000	82.8500
Worker	0.0159	0.0106	0.1148	4.0000e-004	0.0440	2.8000e-004	0.0443	0.0117	2.6000e-004	0.0120	0.0000	35.8301	35.8301	7.5000e-004	0.0000	35.8488
Total	**0.0242**	**0.2494**	**0.1761**	**1.2900e-003**	**0.0688**	**9.8000e-004**	**0.0698**	**0.0189**	**9.3000e-004**	**0.0198**	**0.0000**	**121.5278**	**121.5278**	**3.6600e-003**	**0.0000**	**121.6194**

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	0.0485	0.4536	0.7230	1.0900e-003		0.0254	0.0254		0.0234	0.0234	0.0000	96.1417	96.1417	0.0311	0.0000	96.9190
Total	**0.0485**	**0.4536**	**0.7230**	**1.0900e-003**		**0.0254**	**0.0254**		**0.0234**	**0.0234**	**0.0000**	**96.1417**	**96.1417**	**0.0311**	**0.0000**	**96.9190**

3.7 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	2.9000e-004	9.4000e-003	2.1800e-003	3.0000e-005	6.9000e-004	3.0000e-005	7.2000e-004	1.9000e-004	3.0000e-005	2.2000e-004	0.0000	2.9170	2.9170	1.4000e-004	0.0000	2.9206
Vendor	7.9300e-003	0.2294	0.0592	8.6000e-004	0.0241	6.7000e-004	0.0248	6.9600e-003	6.4000e-004	7.6000e-003	0.0000	82.7807	82.7807	2.7700e-003	0.0000	82.8500
Worker	0.0159	0.0106	0.1148	4.0000e-004	0.0440	2.8000e-004	0.0443	0.0117	2.6000e-004	0.0120	0.0000	35.8301	35.8301	7.5000e-004	0.0000	35.8488
Total	**0.0242**	**0.2494**	**0.1761**	**1.2900e-003**	**0.0688**	**9.8000e-004**	**0.0698**	**0.0189**	**9.3000e-004**	**0.0198**	**0.0000**	**121.5278**	**121.5278**	**3.6600e-003**	**0.0000**	**121.6194**

3.7 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5300e-003	0.0257	0.0284	5.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	4.0083	4.0083	1.3000e-003	0.0000	4.0408
Total	**2.5300e-003**	**0.0257**	**0.0284**	**5.0000e-005**		**1.2800e-003**	**1.2800e-003**		**1.1800e-003**	**1.1800e-003**	**0.0000**	**4.0083**	**4.0083**	**1.3000e-003**	**0.0000**	**4.0408**

3.7 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	2.6000e-004	8.0000e-005	0.0000	5.3000e-004	0.0000	5.3000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.1169	0.1169	1.0000e-005	0.0000	0.1171
Vendor	2.4000e-004	6.7500e-003	2.2100e-003	3.0000e-005	1.0000e-003	1.0000e-005	1.0200e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	3.3572	3.3572	1.0000e-004	0.0000	3.3598
Worker	6.2000e-004	4.0000e-004	4.4000e-003	2.0000e-005	1.8300e-003	1.0000e-005	1.8400e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.4358	1.4358	3.0000e-005	0.0000	1.4364
Total	**8.7000e-004**	**7.4100e-003**	**6.6900e-003**	**5.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3900e-003**	**9.1000e-004**	**2.0000e-005**	**9.3000e-004**	**0.0000**	**4.9098**	**4.9098**	**1.4000e-004**	**0.0000**	**4.9133**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.8600e-003	0.0173	0.0300	5.0000e-005		8.9000e-004	8.9000e-004		8.2000e-004	8.2000e-004	0.0000	4.0083	4.0083	1.3000e-003	0.0000	4.0407
Total	**1.8600e-003**	**0.0173**	**0.0300**	**5.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**4.0083**	**4.0083**	**1.3000e-003**	**0.0000**	**4.0407**

3.7 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	2.6000e-004	8.0000e-005	0.0000	5.3000e-004	0.0000	5.3000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.1169	0.1169	1.0000e-005	0.0000	0.1171
Vendor	2.4000e-004	6.7500e-003	2.2100e-003	3.0000e-005	1.0000e-003	1.0000e-005	1.0200e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	3.3572	3.3572	1.0000e-004	0.0000	3.3598
Worker	6.2000e-004	4.0000e-004	4.4000e-003	2.0000e-005	1.8300e-003	1.0000e-005	1.8400e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.4358	1.4358	3.0000e-005	0.0000	1.4364
Total	**8.7000e-004**	**7.4100e-003**	**6.6900e-003**	**5.0000e-005**	**3.3600e-003**	**2.0000e-005**	**3.3900e-003**	**9.1000e-004**	**2.0000e-005**	**9.3000e-004**	**0.0000**	**4.9098**	**4.9098**	**1.4000e-004**	**0.0000**	**4.9133**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

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	0.0433	0.1947	0.4226	1.5600e-003	0.1436	1.3000e-003	0.1449	0.0385	1.2100e-003	0.0398	0.0000	143.4690	143.4690	5.2100e-003	0.0000	143.5993
Unmitigated	0.0486	0.2264	0.5455	2.1700e-003	0.2065	1.7600e-003	0.2082	0.0554	1.6500e-003	0.0571	0.0000	199.4882	199.4882	6.7000e-003	0.0000	199.6557

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse High Rise	259.00	215.50	171.50	554,966	385,990
Enclosed Parking with Elevator	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	259.00	215.50	171.50	554,966	385,990

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
Condo/Townhouse High Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse High Rise	0.581705	0.037849	0.193793	0.109044	0.014574	0.005304	0.018664	0.026966	0.002656	0.002072	0.005755	0.000900	0.000719
Enclosed Parking with Elevator	0.581705	0.037849	0.193793	0.109044	0.014574	0.005304	0.018664	0.026966	0.002656	0.002072	0.005755	0.000900	0.000719
Other Non-Asphalt Surfaces	0.581705	0.037849	0.193793	0.109044	0.014574	0.005304	0.018664	0.026966	0.002656	0.002072	0.005755	0.000900	0.000719

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	42.6706	42.6706	6.0100e-003	1.2400e-003	43.1912
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	48.8747	48.8747	6.8800e-003	1.4200e-003	49.4709
NaturalGas Mitigated	1.8600e-003	0.0159	6.7600e-003	1.0000e-004		1.2800e-003	1.2800e-003		1.2800e-003	1.2800e-003	0.0000	18.3993	18.3993	3.5000e-004	3.4000e-004	18.5087
NaturalGas Unmitigated	2.3500e-003	0.0201	8.5600e-003	1.3000e-004		1.6300e-003	1.6300e-003		1.6300e-003	1.6300e-003	0.0000	23.2945	23.2945	4.5000e-004	4.3000e-004	23.4329

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					
Condo/Townhouse High Rise	436522	2.3500e-003	0.0201	8.5600e-003	1.3000e-004		1.6300e-003	1.6300e-003		1.6300e-003	1.6300e-003	0.0000	23.2945	23.2945	4.5000e-004	4.3000e-004	23.4329
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**2.3500e-003**	**0.0201**	**8.5600e-003**	**1.3000e-004**		**1.6300e-003**	**1.6300e-003**		**1.6300e-003**	**1.6300e-003**	**0.0000**	**23.2945**	**23.2945**	**4.5000e-004**	**4.3000e-004**	**23.4329**

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					
Condo/Townhouse High Rise	344790	1.8600e-003	0.0159	6.7600e-003	1.0000e-004		1.2800e-003	1.2800e-003		1.2800e-003	1.2800e-003	0.0000	18.3993	18.3993	3.5000e-004	3.4000e-004	18.5087
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.8600e-003**	**0.0159**	**6.7600e-003**	**1.0000e-004**		**1.2800e-003**	**1.2800e-003**		**1.2800e-003**	**1.2800e-003**	**0.0000**	**18.3993**	**18.3993**	**3.5000e-004**	**3.4000e-004**	**18.5087**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse High Rise	224082	20.9383	2.9500e-003	6.1000e-004	21.1937
Enclosed Parking with Elevator	298977	27.9364	3.9300e-003	8.1000e-004	28.2772
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**48.8747**	**6.8800e-003**	**1.4200e-003**	**49.4709**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse High Rise	217686	20.3406	2.8600e-003	5.9000e-004	20.5887
Enclosed Parking with Elevator	238978	22.3301	3.1400e-003	6.5000e-004	22.6025
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**42.6706**	**6.0000e-003**	**1.2400e-003**	**43.1912**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.3820	6.0000e-003	0.3721	3.0000e-005		2.2000e-003	2.2000e-003		2.2000e-003	2.2000e-003	0.0000	2.6048	2.6048	6.2000e-004	4.0000e-005	2.6313
Unmitigated	0.3860	6.5800e-003	0.4078	1.5000e-004		8.0200e-003	8.0200e-003		8.0200e-003	8.0200e-003	0.7798	2.6048	3.3847	4.2700e-003	4.0000e-005	3.5022

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	0.0570					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3136					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.1300e-003	2.3100e-003	0.0364	1.3000e-004		5.9600e-003	5.9600e-003		5.9600e-003	5.9600e-003	0.7798	1.9974	2.7773	3.6800e-003	4.0000e-005	2.8803
Landscaping	0.0112	4.2800e-003	0.3714	2.0000e-005		2.0600e-003	2.0600e-003		2.0600e-003	2.0600e-003	0.0000	0.6074	0.6074	5.8000e-004	0.0000	0.6220
Total	**0.3860**	**6.5900e-003**	**0.4078**	**1.5000e-004**		**8.0200e-003**	**8.0200e-003**		**8.0200e-003**	**8.0200e-003**	**0.7798**	**2.6048**	**3.3847**	**4.2600e-003**	**4.0000e-005**	**3.5022**

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	0.0570					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3136					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.0000e-004	1.7200e-003	7.3000e-004	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	1.9974	1.9974	4.0000e-005	4.0000e-005	2.0093
Landscaping	0.0112	4.2800e-003	0.3714	2.0000e-005		2.0600e-003	2.0600e-003		2.0600e-003	2.0600e-003	0.0000	0.6074	0.6074	5.8000e-004	0.0000	0.6220
Total	**0.3820**	**6.0000e-003**	**0.3721**	**3.0000e-005**		**2.2000e-003**	**2.2000e-003**		**2.2000e-003**	**2.2000e-003**	**0.0000**	**2.6048**	**2.6048**	**6.2000e-004**	**4.0000e-005**	**2.6313**

7.0 Water Detail

7.1 Mitigation Measures Water

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.3113	0.1065	2.5700e-003	6.7398
Unmitigated	3.3523	0.1065	2.5700e-003	6.7813

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse High Rise	3.2577 / 2.05377	3.3523	0.1065	2.5700e-003	6.7813
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**3.3523**	**0.1065**	**2.5700e-003**	**6.7813**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse High Rise	3.2577 / 1.92849	3.3113	0.1065	2.5700e-003	6.7398
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**3.3113**	**0.1065**	**2.5700e-003**	**6.7398**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	4.6688	0.2759	0.0000	11.5667
Unmitigated	4.6688	0.2759	0.0000	11.5667

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse High Rise	23	4.6688	0.2759	0.0000	11.5667
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**4.6688**	**0.2759**	**0.0000**	**11.5667**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse High Rise	23	4.6688	0.2759	0.0000	11.5667
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**4.6688**	**0.2759**	**0.0000**	**11.5667**

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

EMC PLANNING GROUP INC.
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To: **Teri Wissler Adam,**

From: **Sally Rideout, EMPA, Principal Planner**

Cc: **David Craft, Senior Planner**

Date: **June 8, 2021**

Re: **355 First Street – CalEEMod Emissions Assessment, Methodology and Assumptions**

PROJECT DESCRIPTION

The proposed project is located on four lots comprising 0.64 acres in the City of Los Altos. The proposed project is the demolition of seven existing buildings totaling 7,648 square feet, including a hair salon, coin shop, office building, a single-family residence and two outbuildings, pavement and vegetation to accommodate the construction of a 79,431 square foot, 50-unit, four story condominium building with two levels of underground parking, landscaping, and walkways. The proposed project includes replacing approximately 1,708 square feet of sidewalks within the public way on First Street and Whitney Street. The total area of disturbance during construction would be approximately 0.68 acres. The proposed parking garage is 51,023 square feet and would accommodate 115 parking spaces, 50 bicycle lockers, 50 storage units, and EV charging stations for each unit. The proposed driveway surface is interlocking pavers.

Demolition and construction activity is anticipated to occur over a period of approximately 24 months. Grading for the proposed project includes excavation of 19,000cubic yards of soil to accommodate the proposed underground parking garage. Excavated soils would be disposed of off-site.

The project site is located within the San Francisco Bay Area Air Basin, which is within the jurisdiction of the Bay Area Air Quality Management District (air district). An initial study is being prepared pursuant to the California Environmental Quality Act, and a community health risk assessment is being prepared to evaluate project-related single-source and cumulative construction health risks to nearby sensitive receptors within 1,000 feet of the project site.

SCOPE OF ASSESSMENT

This assessment provides assumptions, methodology, and an estimate of the proposed project's construction and operational criteria air pollutants emissions using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 software, a modeling platform recommended by the California Air Resources Board (CARB) and accepted by the air district. The model results will inform the community health risk assessment and CEQA initial study discussion of air quality impacts.

Emissions Model

CalEEMod estimates construction emissions associated with land use development projects and allows for the input of project-specific construction information including phasing and equipment information. CalEEMod was used to estimate annual emissions for on-site and off-site construction activity. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. The CalEEMod software utilizes emissions models USEPA AP-42 emission factors, CARB vehicle emission models studies and studies commissioned by other California agencies.

CalEEMod is capable of estimating changes in the carbon sequestration potential of a site based on changes in natural vegetation communities and the net number of new trees that would be planted as part of the project. There are no natural plant communities on the site and the proposed project would remove 19 trees and plant only 16 new trees. The sequestration potential for the proposed project would be reduced due to planting fewer trees than the number of trees that would be removed from the site.

Existing and Proposed Emissions Sources

Unless otherwise noted, operational criteria air pollutant emissions volumes are based primarily on the model's default emissions factors for the land uses and size metrics presented in Table 1, Project Characteristics.

Table 1 Project Characteristics

Project Components	CalEEMod Land Use[1]	Existing[1,2]	Proposed[1,2]
Single-family residence	Single-family Housing	1 dwelling unit	0
Offices	General Office Building	2,440	0
Hair Salon/Retail	Strip Mall	3,309	-
Condominiums	Condo/Townhouse High Rise	-	50 units[3]
Surface Parking Lot	Parking Lot	14 spaces	-
Parking Garage	Enclosed Parking with Elevator	-	115 spaces[4]
Other Impervious Surfaces[5]	Other Non-Asphalt Surfaces	NA	1,708
Trees	-	21[6]	38

SOURCE: Trinity Consultants 2017, Rockwood Pacific 2020.
NOTES:
1. CalEEMod default land use subtype. Descriptions of the model default land use categories and subtypes are found in the User's Guide for CalEEMod Version 2016.3.2 available online at: http://www.aqmd.gov/caleemod/user's-guide
2. Expressed in units of square feet unless otherwise noted.
3. The proposed project includes a total building area of 79,431 square feet including amenity spaces and mechanical space.
4. The total area of the parking garage is 51,203 square feet.
5. Includes other non-asphalt surfaces on and off the site.
7. To be Removed.

Methodology

Modeling was performed using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 software, a modeling platform recommended by the California Air Resources Board (CARB) and accepted by the air district. Model results are attached. Unless otherwise noted, data inputs to the model take into account the type and size of the proposed uses, utilizing CalEEMod default land uses and based on the information provided in the project plans (SDG Architects Incorporated 2021), and construction data information provided by the applicant (Albert Wang, email messages. May 20, 2021; May 25, 2021).

Modeling Scenarios

Two model scenarios are used in this assessment; baseline and proposed project.

Baseline

CalEEMod default values for baseline conditions assume new development on a vacant site. This baseline scenario estimates unmitigated operational criteria air pollutant emissions generated by existing uses on the project site prior to 2020 (refer to Table 1).

Proposed Project

The proposed project scenario assumes that the project will be fully operational in the year 2024. Model adjustments are made in this scenario to account for regulatory changes that have occurred since the most current version of the model was released. The adjustments are discussed in greater detail in the operational emissions data inputs below.

Assumptions

Unless otherwise noted, data inputs for the model scenarios are based on the following primary assumptions:

1. The assumed construction start date for the proposed project is January 1, 2022.
2. The assumed operational year for modeling purposes is 2025 (CalEEMod requires an operational year after the year construction is completed).
3. Operational emissions generated by the existing uses on the site are estimated using the following CalEEMod default land use subtypes:
    a. "Single Family Housing", which is defined as a single-family detached home on an individual lot;
    b. "General Office Building", which may house multiple tenants where affairs of businesses commercial or industrial organizations or professional persons or firms are conducted;
    c. "Strip Mall", which contains a variety of retail shops specializing in quality apparel, hard goods and services such as real estate offices, dance studios, florists and small restaurants. The existing retail and hair salon uses are modeled under this category;
4. The existing established asphalt driveways, parking lots, landscaping, sidewalks, etc., are not sources of substantial operational emissions and are not included in the

modeling for baseline (existing) operational conditions; however, the demolition of all improvements on the site are included in the model estimates of demolition;

5. Emissions generated by the proposed use are assumed to be similar to emissions that would be generated during construction and operations of the following CalEEMod default land use subtypes:
    a. "Condo/Townhouse High Rise", which is defined as ownership units that have three or more levels;
    b. "Enclosed Parking with Elevator". Which is defined as an enclosed parking structure that may be above or below ground. It is not covered in asphalt. This land use will require lighting and ventilation, and will be more than one floor with an elevator;
    c. "Other Non-Asphalt Surfaces" which are defined as non-asphalt areas (e.g., equipment foundations, loading dock areas, sidewalks, etc.);
6. The model default average one-way trip lengths for hauling and vendor trip lengths during demolition and construction activity were modified based on information provided by the applicant:
    a. 20 miles for standard vendors and deliveries (48 round trips);
    b. 11 miles for demolition spoils and soil hauling; and
    c. 23 miles for cement deliveries (36 round trips for cement delivery);
7. Additional, inputs to the model included:
    a. 7,648 square feet of building demolition,
    b. 16 tons of paving demolition export are captured in vendor trips,
    c. 19,000 cubic yards of soil export;
    d. 800 cubic yards of soil import; and
    e. 36 cement truck trips during building construction.

Operational Emissions Data Input

Baseline

Unmitigated operational emissions estimates were modeled for baseline conditions (existing project site land use conditions) in 2019 to approximate fully operational activity on the site pre-COVID conditions.

Proposed Project

The proposed project model run includes unmitigated operational emissions including adjustments made to account for project compliance with the State requirements for Model Water Efficient Landscape Ordinance (MWELO), 2019 Title 24 building energy efficiency standards, and compliance with Los Altos Municipal Code Chapter 12.64, prohibitions on wood-burning fireplaces. Additional model adjustments were made to reflect the proposed below market rate units (16 percent) and increased density in the Los Altos Downtown Commercial general plan land use designation and Downtown Core zone district.

The Title 24 building energy efficiency defaults in CalEEMod Version 2016.3.2 are the 2016 Title 24 standards. Title 24 standards are updated every three years. The 2019 Title 24 standards were recently adopted and become effective on January 1, 2020 (California Energy Commission 2018). Projects that buildout after January 1, 2020 will be required to comply with the 2019 Title 24 standards. An adjustment of 30 percent was made to the energy mitigation screen under the proposed project scenario to account for reductions in energy demand from increased building energy efficiencies above the 2016 Title 24 standards due to compliance with the 2019 Titel 24 standards (California Energy Commission 2021).

The model's default CO_2 intensity factor of 641 pounds/megawatt hour is adjusted to 206 pounds/megawatt hour to reflect Pacific Gas & Electric energy intensity values for 2020. The intensity factor has been falling, in significant part due to the increasing percentage of Pacific Gas & Electric's energy portfolio obtained from renewable energy. Emissions intensity data is from Pacific Gas & Electric's *Greenhouse Gas Factors: Guidance for PG&E Customers*, dated November 2015.

Each air district (or county) assigns trip lengths for urban and rural settings, which are incorporated into the CalEEMod defaults. The model's defaults were set to "urban" and the jurisdictional authority parameters are based on the model defaults for the air district.

Construction Emissions Data Inputs

CalEEMod default construction parameters allow estimates of short-term construction emissions based upon empirical data collected and analyzed by the California Air Resources Board. The CalEEMod program allows modeling of construction emissions associated with land use development projects and allows for the input of project-specific construction information including phasing and equipment information, if known.

Unless otherwise noted, construction data inputs to the model take into account the type and size of equipment for demolition and construction of the proposed project utilizing the CalEEMod default land uses identified in Table 1. Size metrics for demolition materials, cut and fill, and soil import/export are derived from the project plans and construction information prepared by SDG Architects, Inc. and JETT Landscape Architecture + Design (March 2021), BKF Engineers (April 2021) (Wang 2021). Changes to the model defaults are noted in the CalEEMod results attached to this memorandum. The number and type of equipment was not yet known in detail sufficient to modify the model; therefore, the number and type of construction equipment is based on the model default construction equipment by phase.

RESULTS

Operational Emissions

Existing and proposed operational emissions are estimated. Table 2, Unmitigated Operational Emissions, presents the net change between the unmitigated existing and proposed criteria pollutant emissions.

Table 2 Unmitigated Operational Criteria Pollutant Emissions

Emissions Scenarios	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO_x)	Suspended Particulates (PM_{10})	Total Fine Particulates ($PM_{2.5}$)	Carbon Monoxide (CO)
Existing[1,2]	0.09	0.21	0.11	0.03	0.50
Proposed[1,2]	0.43	0.23	0.15	0.04	0.23
Change[1,2]	0.34	0.02	0.04	0.01	-0.27[3]
Net Average Daily Emissions[1,4]	1.86	0.11	0.22	0.05	-1.48[3]

SOURCE: EMC Planning Group 2021

NOTES:
1. Results may vary due to rounding.
2. Expressed in tons per year.
3. The proposed project would result in fewer emissions.
4. Expressed in pounds per day: A U.S. ton is equal to 2,000 pounds. The emissions estimates in tons per year are multiped by 2,000 pounds to arrive at emissions volume in pounds per year, then divided by 365 days per year to arrive at pounds per day.

Construction Emissions

Detailed model results for construction criteria air pollutant emissions are included as attachments to this assessment. The unmitigated criteria air pollutant emissions resulting from project construction are summarized in Table 2, Unmitigated Construction Criteria Air Pollutant Emissions.

Table 2 Unmitigated Construction Criteria Air Pollutant Emissions

Emissions	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO_X)	Exhaust Respirable Particulate Matter (PM_{10})	Total Fine Particulate Matter ($PM_{2.5}$)
2022[1,2]	0.70	1.49	0.05	0.08
2023[1,2]	0.01	0.03	<0.01	<0.01
Total Emissions[1,2]	0.71	1.52	0.05	0.08
Average Daily Emissions[1,2]	4.93	10.6	0.35	0.44

SOURCE: EMC Planning Group 2021
NOTES:
1. Results may vary due to rounding.
2. CalEEMod estimates construction criteria air pollutant emissions in tons per year. A U.S. ton is equal to 2,000 pounds. The emissions estimates in tons per year are multiped by 2,000 pounds to arrive at emissions volume in pounds per year. CalEEMod estimates a total of 288 construction days. Average daily emissions (in pounds per day) are computed by dividing the annual construction emissions (in pounds per year) by the number of construction days.

SOURCES

1. Trinity Consultants. November 2017. *California Emissions Estimator (CalEEMod) Version 2016.3.2*. Available online at: http://www.aqmd.gov/caleemod/home
2. Trinity Consultants. November 2017. *CalEEMod User's Guide (Version 2016.3.2).* Available online at: http://www.aqmd.gov/caleemod/user's-guide

3. Bay Area Air Quality Management District. May 2017. *California Environmental Quality Act Air Quality Guidelines*. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

4. Google, Inc. 2021. Google Earth.

5. Pacific Gas & Electric. November 2015. *Greenhouse Gas Factors: Guidance for PG&E Customers*; Accessed December 13, 2019. https://www.ca-ilg.org/sites/main/files/file-attachments/ghg_emission_factor_guidance.pdf?1436996158

6. California Energy Commission. March 2018. *2019 Building Energy Efficiency Standards Frequently Asked Questions.* https://ww2.energy.ca.gov/title24/2019standards/documents/Title_24_2019_Building_Standards_FAQ_ada.pdf

7. SDG Architects

8. 355 1st Street. March 31, 2021. BKF Engineers. April 1, 2021. San Jose CA 355-373 1st Street Existing Conditions, JETT Landscape Architecture + Design 355 1st Street Landscape Plan Ground Floor. March 31, 2021.

BREEZE AERMOD
Sensitive Receptor Results
2022 Unmitigated DPM PM10
Input 5.294e-7 g/s-m^2

Pollutant: PM10, Type: CONC (ug/m3) 5 YEAR AVG., Group: ALL**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.	
			East(m)	North(m)		
1	1	H1	578054.00	4136898.00	0.01469	
2	2	H2	578095.00	4136867.00	0.01138	
3	4	H4	578124.00	4136859.00	0.01091	
4	5	H5	578268.00	4136741.00	0.00928	
5	6	H6	578284.00	4136724.00	0.00959	
6	7	H7	578289.00	4136705.00	0.00873	
7	8	H8	578298.00	4136686.00	0.00832	
8	9	H9	578346.00	4136667.00	0.0118	
9	10	H10	578453.00	4136708.00	0.03258	
10	11	H11	578490.00	4136708.00	0.03235	
11	12	H11	578490.00	4136743.00	0.03945	
12	13	H13	578489.00	4136771.00	0.04641	
13	14	H14	578495.00	4136803.00	0.05461	
14	15	H15	578483.00	4136817.00	0.06154	
15	16	H16	578484.00	4136856.00	0.07009	
16	17	H17	578483.00	4136879.00	0.0689	
17	18	HH	578280.00	4136871.00	0.06074	
18	19	W1	578281.00	4136936.00	0.76728	
19	20	W2	578307.00	4136973.00	0.40799	
20	21	W3	578296.00	4137003.00	0.22902	
21	22	W4	578263.00	4137022.00	0.30531	
22	23	W5	578235.00	4136999.00	0.85926	
23	24	W6	578210.00	4136977.00	0.35987	
24	25	W7	578234.00	4136931.00	0.09201	
25	26	W8	578239.00	4136922.00	0.07128	
26	27	W9	578252.00	4136905.00	0.05944	

BREEZE AERMOD
Sensitive Receptor Results
2023 Unmitigated Construction DPM PM10
(Input 1.371e-8 g/s-m^2)

Pollutant: PM10, Type: CONC (ug/m3) 5 YEAR AVG., Group: ALL**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.
			East(m)	North(m)	
1	1	H1	578054.00	4136898.00	0.00038
2	2	H2	578095.00	4136867.00	0.00029
3	4	H4	578124.00	4136859.00	0.00028
4	5	H5	578268.00	4136741.00	0.00024
5	6	H6	578284.00	4136724.00	0.00025
6	7	H7	578289.00	4136705.00	0.00023
7	8	H8	578298.00	4136686.00	0.00022
8	9	H9	578346.00	4136667.00	0.00031
9	10	H10	578453.00	4136708.00	0.00084
10	11	H11	578490.00	4136708.00	0.00084
11	12	H11	578490.00	4136743.00	0.00102
12	13	H13	578489.00	4136771.00	0.0012
13	14	H14	578495.00	4136803.00	0.00141
14	15	H15	578483.00	4136817.00	0.00159
15	16	H16	578484.00	4136856.00	0.00182
16	17	H17	578483.00	4136879.00	0.00178
17	18	HH	578280.00	4136871.00	0.00157
18	19	W1	578281.00	4136936.00	0.01987
19	20	W2	578307.00	4136973.00	0.01057
20	21	W3	578296.00	4137003.00	0.00593
21	22	W4	578263.00	4137022.00	0.00791
22	23	W5	578235.00	4136999.00	0.02225
23	24	W6	578210.00	4136977.00	0.00932
24	25	W7	578234.00	4136931.00	0.00238
25	26	W8	578239.00	4136922.00	0.00185
26	27	W9	578252.00	4136905.00	0.00154

BREEZE AERMOD
Sensitive Receptor Results
2022 Unmitigated PM2.5
Input 8.695e-7 g/s-m^2

Pollutant: PM25, Type: CONC (ug/m3) 5 YEAR AVG., Group: ALL**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.	
			East(m)	North(m)		
1	1	H1	578054.00	4136898.00	0.02413	
2	2	H2	578095.00	4136867.00	0.01869	
3	4	H4	578124.00	4136859.00	0.01792	
4	5	H5	578268.00	4136741.00	0.01524	
5	6	H6	578284.00	4136724.00	0.01575	
6	7	H7	578289.00	4136705.00	0.01434	
7	8	H8	578298.00	4136686.00	0.01367	
8	9	H9	578346.00	4136667.00	0.01938	
9	10	H10	578453.00	4136708.00	0.0535	
10	11	H11	578490.00	4136708.00	0.05313	
11	12	H11	578490.00	4136743.00	0.06479	
12	13	H13	578489.00	4136771.00	0.07622	
13	14	H14	578495.00	4136803.00	0.0897	
14	15	H15	578483.00	4136817.00	0.10107	
15	16	H16	578484.00	4136856.00	0.11512	
16	17	H17	578483.00	4136879.00	0.11317	
17	18	HH	578280.00	4136871.00	0.09976	
18	19	W1	578281.00	4136936.00	1.2602	
19	20	W2	578307.00	4136973.00	0.6701	
20	21	W3	578296.00	4137003.00	0.37615	
21	22	W4	578263.00	4137022.00	0.50145	
22	23	W5	578235.00	4136999.00	1.41127	
23	24	W6	578210.00	4136977.00	0.59106	
24	25	W7	578234.00	4136931.00	0.15112	
25	26	W8	578239.00	4136922.00	0.11707	
26	27	W9	578252.00	4136905.00	0.09762	

BREEZE AERMOD
Sensitive Receptor Results
2023 Unmitigated PM2.5
Input 2.208e-8 g/s-m^2

Pollutant: PM25, Type: CONC (ug/m3) 5 YEAR AVG., Group: ALL**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.	
			East(m)	North(m)		
1	1	H1	578054.00	4136898.00	0.00061	
2	2	H2	578095.00	4136867.00	0.00047	
3	4	H4	578124.00	4136859.00	0.00046	
4	5	H5	578268.00	4136741.00	0.00039	
5	6	H6	578284.00	4136724.00	0.0004	
6	7	H7	578289.00	4136705.00	0.00036	
7	8	H8	578298.00	4136686.00	0.00035	
8	9	H9	578346.00	4136667.00	0.00049	
9	10	H10	578453.00	4136708.00	0.00136	
10	11	H11	578490.00	4136708.00	0.00135	
11	12	H11	578490.00	4136743.00	0.00165	
12	13	H13	578489.00	4136771.00	0.00194	
13	14	H14	578495.00	4136803.00	0.00228	
14	15	H15	578483.00	4136817.00	0.00257	
15	16	H16	578484.00	4136856.00	0.00292	
16	17	H17	578483.00	4136879.00	0.00287	
17	18	HH	578280.00	4136871.00	0.00253	
18	19	W1	578281.00	4136936.00	0.032	
19	20	W2	578307.00	4136973.00	0.01702	
20	21	W3	578296.00	4137003.00	0.00955	
21	22	W4	578263.00	4137022.00	0.01273	
22	23	W5	578235.00	4136999.00	0.03584	
23	24	W6	578210.00	4136977.00	0.01501	
24	25	W7	578234.00	4136931.00	0.00384	
25	26	W8	578239.00	4136922.00	0.00297	
26	27	W9	578252.00	4136905.00	0.00248	

BREEZE AERMOD
Sensitive Receptor Results
2022 Mitigated DPM PM10
Input 3.903e-7 g/s-m^2

Pollutant: PM10, Type: CONC (ug/m3) 5 YEAR AVG., Group: ALL**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.
			East(m)	North(m)	
1	1	H1	578054.00	4136898.00	0.01083
2	2	H2	578095.00	4136867.00	0.00839
3	4	H4	578124.00	4136859.00	0.00805
4	5	H5	578268.00	4136741.00	0.00684
5	6	H6	578284.00	4136724.00	0.00707
6	7	H7	578289.00	4136705.00	0.00644
7	8	H8	578298.00	4136686.00	0.00614
8	9	H9	578346.00	4136667.00	0.0087
9	10	H10	578453.00	4136708.00	0.02402
10	11	H11	578490.00	4136708.00	0.02385
11	12	H11	578490.00	4136743.00	0.02908
12	13	H13	578489.00	4136771.00	0.03421
13	14	H14	578495.00	4136803.00	0.04026
14	15	H15	578483.00	4136817.00	0.04537
15	16	H16	578484.00	4136856.00	0.05167
16	17	H17	578483.00	4136879.00	0.0508
17	18	HH	578280.00	4136871.00	0.04478
18	19	W1	578281.00	4136936.00	0.56568
19	20	W2	578307.00	4136973.00	0.30079
20	21	W3	578296.00	4137003.00	0.16885
21	22	W4	578263.00	4137022.00	0.22509
22	23	W5	578235.00	4136999.00	0.63349
23	24	W6	578210.00	4136977.00	0.26531
24	25	W7	578234.00	4136931.00	0.06783
25	26	W8	578239.00	4136922.00	0.05255
26	27	W9	578252.00	4136905.00	0.04382

BREEZE AERMOD
Sensitive Receptor Results
2023 Mitigated DPM PM10
Input 9.626e-9 g/s-m^2

Pollutant: PM10, Type: CONC (ug/m3) 5 YEAR AVG., Group: ALL**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.
			East(m)	North(m)	
1	1	H1	578054.00	4136898.00	0.00027
2	2	H2	578095.00	4136867.00	0.00021
3	4	H4	578124.00	4136859.00	0.0002
4	5	H5	578268.00	4136741.00	0.00017
5	6	H6	578284.00	4136724.00	0.00017
6	7	H7	578289.00	4136705.00	0.00016
7	8	H8	578298.00	4136686.00	0.00015
8	9	H9	578346.00	4136667.00	0.00021
9	10	H10	578453.00	4136708.00	0.00059
10	11	H11	578490.00	4136708.00	0.00059
11	12	H11	578490.00	4136743.00	0.00072
12	13	H13	578489.00	4136771.00	0.00084
13	14	H14	578495.00	4136803.00	0.00099
14	15	H15	578483.00	4136817.00	0.00112
15	16	H16	578484.00	4136856.00	0.00127
16	17	H17	578483.00	4136879.00	0.00125
17	18	HH	578280.00	4136871.00	0.0011
18	19	W1	578281.00	4136936.00	0.01395
19	20	W2	578307.00	4136973.00	0.00742
20	21	W3	578296.00	4137003.00	0.00416
21	22	W4	578263.00	4137022.00	0.00555
22	23	W5	578235.00	4136999.00	0.01562
23	24	W6	578210.00	4136977.00	0.00654
24	25	W7	578234.00	4136931.00	0.00167
25	26	W8	578239.00	4136922.00	0.0013
26	27	W9	578252.00	4136905.00	0.00108

BREEZE AERMOD
Sensitive Receptor Results
2022 Mitigated PM2.5
Input 6.811e-7 g/s-m^2

Pollutant: PM25, Type: CONC (ug/m3) 5 YEAR AVG., Group: ALL**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.
			East(m)	North(m)	
1	1	H1	578054.00	4136898.00	0.0189
2	2	H2	578095.00	4136867.00	0.01464
3	4	H4	578124.00	4136859.00	0.01404
4	5	H5	578268.00	4136741.00	0.01194
5	6	H6	578284.00	4136724.00	0.01233
6	7	H7	578289.00	4136705.00	0.01123
7	8	H8	578298.00	4136686.00	0.01071
8	9	H9	578346.00	4136667.00	0.01518
9	10	H10	578453.00	4136708.00	0.04191
10	11	H11	578490.00	4136708.00	0.04162
11	12	H11	578490.00	4136743.00	0.05076
12	13	H13	578489.00	4136771.00	0.0597
13	14	H14	578495.00	4136803.00	0.07026
14	15	H15	578483.00	4136817.00	0.07917
15	16	H16	578484.00	4136856.00	0.09017
16	17	H17	578483.00	4136879.00	0.08865
17	18	HH	578280.00	4136871.00	0.07814
18	19	W1	578281.00	4136936.00	0.98714
19	20	W2	578307.00	4136973.00	0.5249
20	21	W3	578296.00	4137003.00	0.29465
21	22	W4	578263.00	4137022.00	0.3928
22	23	W5	578235.00	4136999.00	1.10548
23	24	W6	578210.00	4136977.00	0.46299
24	25	W7	578234.00	4136931.00	0.11838
25	26	W8	578239.00	4136922.00	0.0917
26	27	W9	578252.00	4136905.00	0.07647

BREEZE AERMOD
Sensitive Receptor Results
2023 Mitigated PM2.5
Input 1.831e-8 g/s-m^2

Pollutant: PM25, Type: CONC (ug/m3) 5 YEAR AVG., Group: ALL**

Sen. Rcpt. #	Dsc. Rcpt. #	Description	UTM		Conc.
			East(m)	North(m)	
1	1	H1	578054.00	4136898.00	0.00051
2	2	H2	578095.00	4136867.00	0.00039
3	4	H4	578124.00	4136859.00	0.00038
4	5	H5	578268.00	4136741.00	0.00032
5	6	H6	578284.00	4136724.00	0.00033
6	7	H7	578289.00	4136705.00	0.0003
7	8	H8	578298.00	4136686.00	0.00029
8	9	H9	578346.00	4136667.00	0.00041
9	10	H10	578453.00	4136708.00	0.00113
10	11	H11	578490.00	4136708.00	0.00112
11	12	H11	578490.00	4136743.00	0.00136
12	13	H13	578489.00	4136771.00	0.00161
13	14	H14	578495.00	4136803.00	0.00189
14	15	H15	578483.00	4136817.00	0.00213
15	16	H16	578484.00	4136856.00	0.00242
16	17	H17	578483.00	4136879.00	0.00238
17	18	HH	578280.00	4136871.00	0.0021
18	19	W1	578281.00	4136936.00	0.02654
19	20	W2	578307.00	4136973.00	0.01411
20	21	W3	578296.00	4137003.00	0.00792
21	22	W4	578263.00	4137022.00	0.01056
22	23	W5	578235.00	4136999.00	0.02972
23	24	W6	578210.00	4136977.00	0.01245
24	25	W7	578234.00	4136931.00	0.00318
25	26	W8	578239.00	4136922.00	0.00247
26	27	W9	578252.00	4136905.00	0.00206

APPENDIX B

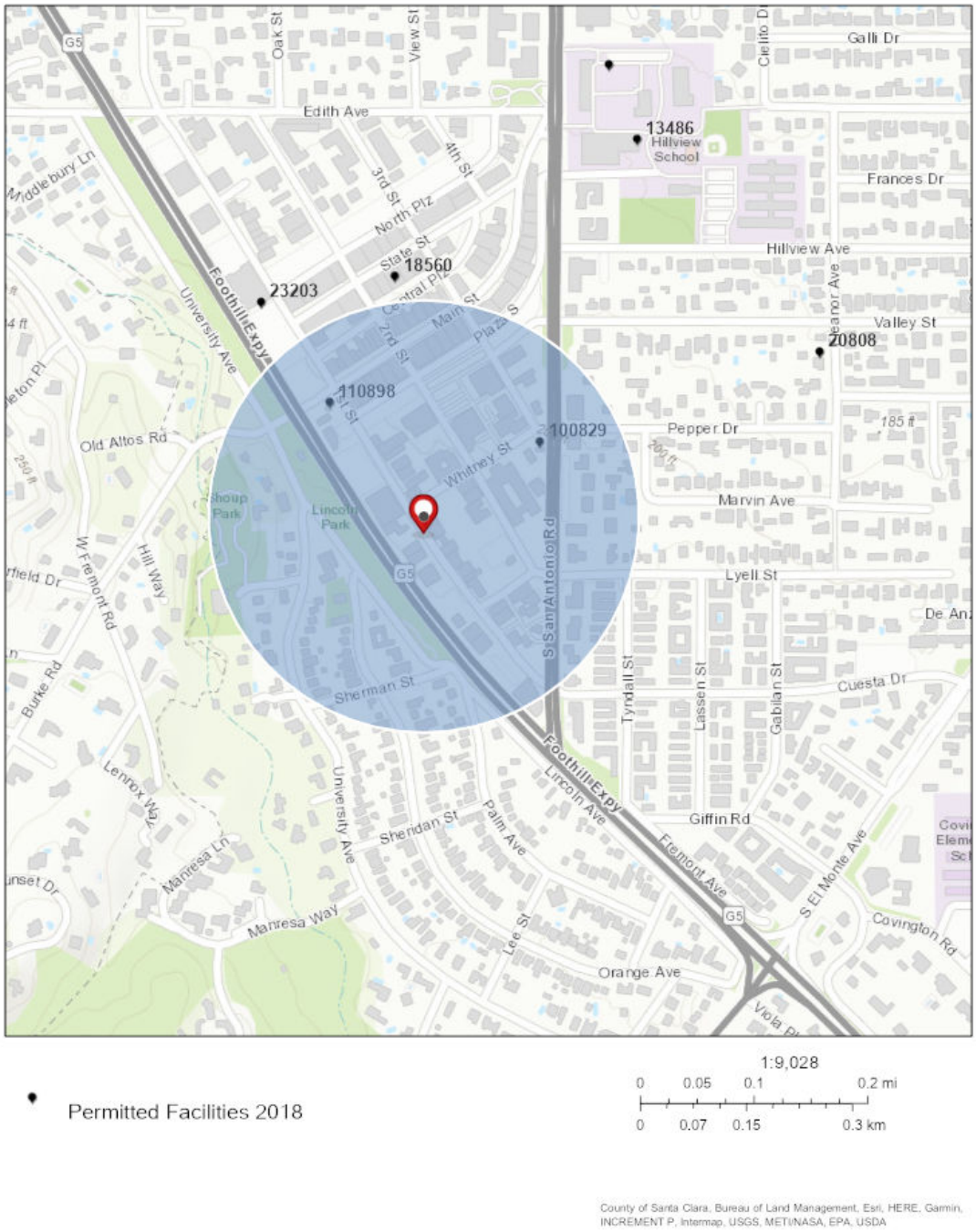
EXISTING STATIONARY SOURCE EMISSIONS/RISKS

Stationary Source Risk & Hazards Screening Report

Area of Interest (AOI) Information

Area : 3,134,508.74 ft²

May 5 2021 13:49:40 Pacific Daylight Time



Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Facilities 2018	2	N/A	N/A

Permitted Facilities 2018

#	FACID	Name	Address	City	St
1	100829	Los Altos 76 Inc.	330 S San Antonio Rd	Los Altos	CA
2	110898	Main Street Chevron	401 Main St	Los Altos	CA

#	Zip	County	Cancer	Hazard	PM_25	Type	Count
1	94022	Santa Clara	15.650	0.070	0.000	Gas Dispensing Facility	1
2	94022	Santa Clara	22.370	0.100	0.000	Gas Dispensing Facility	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.

APPENDIX C

CONSTRUCTION HEALTH RISK CALCULATIONS

CONVERSION CHART
CalEEMod Output -->AERMOD Input

CalEEMod OUTPUT (Tons per Year) to AERMOD Input (Grams per Second per area)

Convert Tons/Year to Grams/Second Formula:

(X tons/year)(2000 lb/ton)(454 grams/lb)(1 year/365 days)(1 day/24 hours)(1 hour/3600 seconds)
= X grams per second

AREA is calculated in m^2. One acre equals 4,046.86 m^2

PROJECT NAME: **355 1st Street, Los Altos**

Project Site Area:

Acres	m^2
0.68	2,752

@H16 (MEI)

YEAR	CALEEMOD	EMISSION	AERMOD	AERMOD	INFANT CANCER	ADULT CANCER	
EMITTED	OUTPUT	RATE	INPUT	OUTPUT	RISK	RISK	HAZARD
UNMITIGATED DPM	Tons/YR	g/sec	g/sec/area	ug/m3	per million	per million	INDEX
2022	0.0506	0.00146	5.294E-07	0.07009	12.76	0.21	0.014018
2023	1.31E-03	0.00004	1.371E-08	0.00182			0.000364

	CALEEMOD	EMISSION	AERMOD	AERMOD
	OUTPUT	RATE	INPUT	OUTPUT
UNMITIGATED $PM_{2.5}$	Tons/YR	g/sec	g/sec/area	ug/m3
2022	0.0831	0.00239	8.695E-07	0.11512
2023	2.11E-03	0.00006	2.208E-08	0.00292

	CALEEMOD	EMISSION	AERMOD	AERMOD	INFANT CANCER	ADULT CANCER	
	OUTPUT	RATE	INPUT	OUTPUT	RISK	RISK	HAZARD
MITIGATED DPM	Tons/YR	g/sec	g/sec/area	ug/m3	per million	per million	INDEX
2022	3.73E-02	0.00107	3.903E-07	0.05167	9.4	0.15	0.010334
2023	9.20E-04	0.00003	9.626E-09	0.00127			0.000254

	CALEEMOD	EMISSION	AERMOD	AERMOD
	OUTPUT	RATE	INPUT	OUTPUT
MITIGATED $PM_{2.5}$	Tons/YR	g/sec	g/sec/area	ug/m3
2022	0.0651	0.00187	6.811E-07	0.09017
2023	1.75E-03	0.00005	1.831E-08	0.00242

355 First Street - Construction Cancer Risk
2022 Maximum DPM PM10 Cancer Risk from Construction
Impacts at MEI - 1.5 meter receptor height
(Using San Jose Airport Met Data)

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E+06

Where: CPF = Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$
ASF = Age Sentivity Factor for specified age group
ED = Exposure Duration (years)
AT = Averaging Time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: Cair = Concentration in air $(\mu g/m^3)$
DBR = Daily Breathing Rate (L/kg body weight-day)
A = Inhalation Absorption Factor
EF = Exposure Frequency (days/year)
10^{-6} = Conversion Factor

	Infant/Child				Adult
Age --> Parameter	3rd Trimester	0 - 2	2 - 9	2 - 16	16 - 30
ASF=	10	10	3	3	1
CPF=	1.1	1.1	1.1	1.1	1.1
DBR*=	361	1090	631	572	261
A=	1	1	1	1	1
EF=	350	350	350	350	350
AT=	70	70	70	70	70
FAH=	1	1	1	1	0.73

*95th percentile breathing rates for infants and 80th percentile for children and adults

Cancer Risk by Year - Maximum Emissions Impact (MEI) at a residence southeast of the project (H16) UTMs 578484, 4136856

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)
			DPM Conc $(\mu g/m^3)$		Age Sensitivity Factor		DPM Conc $(\mu g/m^3)$		Age Sensitivity Factor	
			Year	Annual			Year	Annual		
0	0.25	-0.25 - 0*	2022	0.07009	10	0.95	2022	0.07009	-	-
1	1	0 - 1	2022	0.07009	10	11.51	2022	0.07009	1	0.201
2	1	1 - 2	2023	0.00182	10	0.30	2023	0.00182	1	0.005
3	1	2 - 3	0	0.0000	3	0.00	0	0.0000	1	0.000
4	1	3 - 4	0	0.0000	3	0.00	0	0.0000	1	0.00
5	1	4 - 5	0	0.0000	3	0.00	0	0.0000	1	0.00
6	1	5 - 6	0	0.0000	3	0.00	0	0.0000	1	0.00
7	1	6 - 7	0	0.0000	3	0.00	0	0.0000	1	0.00
8	1	7 - 8	0	0.0000	3	0.00	0	0.0000	1	0.00
9	1	8 - 9	0	0.0000	3	0.00	0	0.0000	1	0.00
10	1	9 - 10	0	0.0000	3	0.00	0	0.0000	1	0.00
11	1	10 - 11	0	0.0000	3	0.00	0	0.0000	1	0.00
12	1	11 - 12	0	0.0000	3	0.00	0	0.0000	1	0.00
13	1	12 - 13	0	0.0000	3	0.00	0	0.0000	1	0.00
14	1	13 - 14	0	0.0000	3	0.00	0	0.0000	1	0.00
15	1	14 - 15	0	0.0000	3	0.00	0	0.0000	1	0.00
16	1	15 - 16	0	0.0000	3	0.00	0	0.0000	1	0.00
17	1	16 - 17	0	0.0000	1	0.00	0	0.0000	1	0.00
18	1	17 - 18	0	0.0000	1	0.00	0	0.0000	1	0.00
19	1	18 - 19	0	0.0000	1	0.00	0	0.0000	1	0.00
20	1	19 - 20	0	0.0000	1	0.00	0	0.0000	1	0.00
21	1	20 - 21	0	0.0000	1	0.00	0	0.0000	1	0.00
22	1	21 - 22	0	0.0000	1	0.00	0	0.0000	1	0.00
23	1	22 - 23	0	0.0000	1	0.00	0	0.0000	1	0.00
24	1	23 - 24	0	0.0000	1	0.00	0	0.0000	1	0.00
25	1	24 - 25	0	0.0000	1	0.00	0	0.0000	1	0.00
26	1	25 - 26	0	0.0000	1	0.00	0	0.0000	1	0.00
27	1	26 - 27	0	0.0000	1	0.00	0	0.0000	1	0.00
28	1	27 - 28	0	0.0000	1	0.00	0	0.0000	1	0.00
29	1	28 - 29	0	0.0000	1	0.00	0	0.0000	1	0.00
30	1	29 - 30	0	0.0000	1	0.00	0	0.0000	1	0.00
Total Increased Cancer Risk						**12.76**				**0.21**

* Third Trimester of Pregnancy

355 First Street - Construction Cancer Risk

2022 Maximum DPM PM10 Cancer Risk from Construction

Impacts at MEI - 1.5 meter receptor height

(Using San Jose Airport Met Data)

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E+06

Where: CPF = Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$

ASF = Age Sentivity Factor for specified age group

ED = Exposure Duration (years)

AT = Averaging Time for lifetime cancer risk (years)

FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: Cair = Concentration in air ($\mu g/m^3$)

DBR = Daily Breathing Rate (L/kg body weight-day)

A = Inhalation Absorption Factor

EF = Exposure Frequency (days/year)

10^{-6} = Conversion Factor

	Infant/Child				Adult
Age --> Parameter	3rd Trimester	0 - 2	2 - 9	2 - 16	16 - 30
ASF=	10	10	3	3	1
CPF=	1.1	1.1	1.1	1.1	1.1
DBR*=	361	1090	631	572	261
A=	1	1	1	1	1
EF=	350	350	350	350	350
AT=	70	70	70	70	70
FAH=	1	1	1	1	0.73

*95th percentile breathing rates for infants and 80th percentile for children and adults

Cancer Risk by Year - Maximum Emissions Impact (MEI) at a residence southeast of the project (H16) UTMs 578484, 4136856

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)
			DPM Conc ($\mu g/m^3$)		Age Sensitivity Factor		DPM Conc ($\mu g/m^3$)		Age Sensitivity Factor	
			Year	Annual			Year	Annual		
0	0.25	-0.25 - 0*	2022	0.05167	10	0.70	2022	0.05167	-	-
1	1	0 - 1	2022	0.05167	10	8.49	2022	0.05167	1	0.148
2	1	1 - 2	2023	0.00127	10	0.21	2023	0.00127	1	0.004
3	1	2 - 3	0	0.0000	3	0.00	0	0.0000	1	0.000
4	1	3 - 4	0	0.0000	3	0.00	0	0.0000	1	0.00
5	1	4 - 5	0	0.0000	3	0.00	0	0.0000	1	0.00
6	1	5 - 6	0	0.0000	3	0.00	0	0.0000	1	0.00
7	1	6 - 7	0	0.0000	3	0.00	0	0.0000	1	0.00
8	1	7 - 8	0	0.0000	3	0.00	0	0.0000	1	0.00
9	1	8 - 9	0	0.0000	3	0.00	0	0.0000	1	0.00
10	1	9 - 10	0	0.0000	3	0.00	0	0.0000	1	0.00
11	1	10 - 11	0	0.0000	3	0.00	0	0.0000	1	0.00
12	1	11 - 12	0	0.0000	3	0.00	0	0.0000	1	0.00
13	1	12 - 13	0	0.0000	3	0.00	0	0.0000	1	0.00
14	1	13 - 14	0	0.0000	3	0.00	0	0.0000	1	0.00
15	1	14 - 15	0	0.0000	3	0.00	0	0.0000	1	0.00
16	1	15 - 16	0	0.0000	3	0.00	0	0.0000	1	0.00
17	1	16 - 17	0	0.0000	1	0.00	0	0.0000	1	0.00
18	1	17 - 18	0	0.0000	1	0.00	0	0.0000	1	0.00
19	1	18 - 19	0	0.0000	1	0.00	0	0.0000	1	0.00
20	1	19 - 20	0	0.0000	1	0.00	0	0.0000	1	0.00
21	1	20 - 21	0	0.0000	1	0.00	0	0.0000	1	0.00
22	1	21 - 22	0	0.0000	1	0.00	0	0.0000	1	0.00
23	1	22 - 23	0	0.0000	1	0.00	0	0.0000	1	0.00
24	1	23 - 24	0	0.0000	1	0.00	0	0.0000	1	0.00
25	1	24 - 25	0	0.0000	1	0.00	0	0.0000	1	0.00
26	1	25 - 26	0	0.0000	1	0.00	0	0.0000	1	0.00
27	1	26 - 27	0	0.0000	1	0.00	0	0.0000	1	0.00
28	1	27 - 28	0	0.0000	1	0.00	0	0.0000	1	0.00
29	1	28 - 29	0	0.0000	1	0.00	0	0.0000	1	0.00
30	1	29 - 30	0	0.0000	1	0.00	0	0.0000	1	0.00
Total Increased Cancer Risk						**9.40**				**0.15**

* Third Trimester of Pregnancy

APPENDIX D

CUMULATIVE COMMUNITY HEALTH RISK CALCULATIONS

06-07-2021

MOBILE SOURCE HEALTH RISK – YR2014

RECEPTOR ID:		37.375134, -122.113561
	Type	**Risk**
Cancer	Highway	3.952
	Major Street	6.875
	Rail	2.105
PM2.5	Highway	0.091
	Major Street	0.148
	Rail	0.004

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.

The Air District assigned vehicle counts on each link using information from the California Department of Transportation (Caltrans) and the Metropolitan Transportation Commission (MTC) for all roads with greater than 30,000 AADT. Traffic counts for state highways are from 2014 while surface streets AADT reflect 2015 counts when available, with older counts from 2010 through 2013 if data were missing. Sources of data used for the activity data are described below.

- State highway activity on the state highway system was represented using 2014 AADT counts from Caltrans. AADT values represent the total traffic volume for the year divided by 365 days, and these counts are reported for state highway segments defined using milepost values. Caltrans provides AADT data for total traffic and for trucks only, with trucks classified by axle number (the two-axle class excludes pickups and vans with only 4 tires).

- Daily traffic counts on surface streets were obtained from Metropolitan Transportation Commission (MTC) which receives roadway counts from local agencies as part of the Highway Performance Monitoring System (HPMS) with the exception of Santa Rosa, which posts the AADT on their web page.

- Year 2014 traffic volumes were forecast to 2017 using county-level growth factors from the California Air Resources Board's (ARB) EMFAC2014 mobile source emissions model. EMFAC2014 was run for all Bay Area counties for 2014, and vehicle miles of travel (VMT) output data were used to calculate the growth factors needed to project 2014 traffic volumes to 2017.

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 (CUMULATIVE)
CANCER	100 in a million
AMBIENT PM2.5	0.8 ug/m^3