EL CAMINO REAL SPECIFIC PLAN AIR QUALITY AND GREENHOUSE GAS ASSESSMENT

Santa Clara, California

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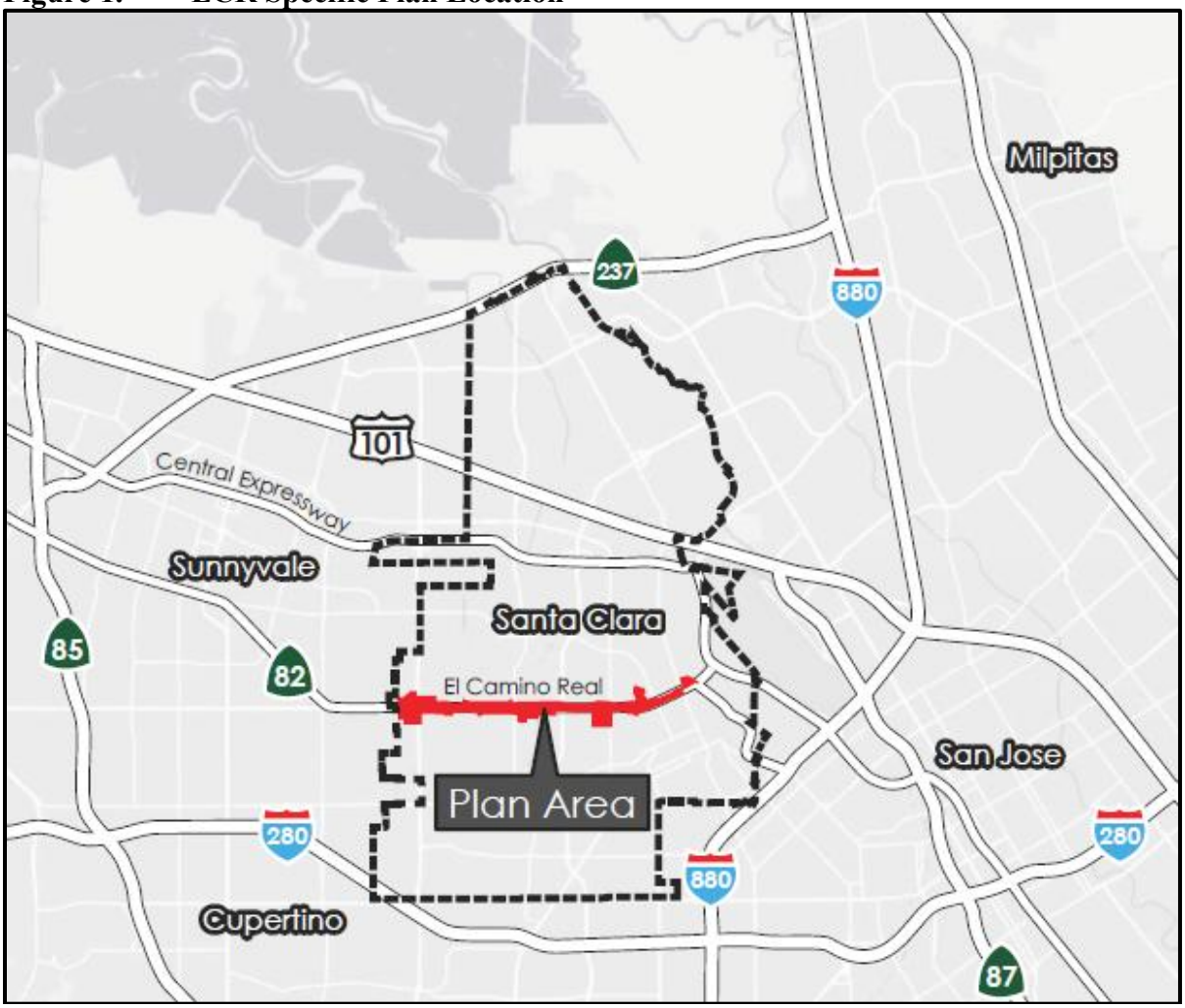
INTRODUCTION

This report addresses the air quality and greenhouse gas (GHG) emissions for the El Camino Real (ECR) Specific Plan located in Santa Clara, California. The ECR Specific Plan would allow for increased development of new residential units. The site is currently developed with light industrial and office uses, with surface parking lots adjacent to each property. This report includes a summary of applicable air quality and GHG regulations and analyzes potential air quality impacts and GHG emissions associated with the proposed ECR Specific Plan.

PROJECT DESCRIPTION

The Specific Plan area comprises 238.3 acres of properties that are located immediately adjacent to El Camino Real located immediately adjacent to the segment of the El Camino Real between Lafayette Street on the east and the City limits on the west. The Plan Area is surrounded in most directions by single-family neighborhoods. Figure 1 shows the ECR Specific Plan location.

Figure 1. ECR Specific Plan Location



The City of Santa Clara adopted its 2010-2035 General Plan in 2010, which designated nine Future Focus Areas throughout the City to support and foster the City's diverse economic and cultural base. For Phase I of the General Plan (2010-2015), the Focus Areas include the El Camino Real Focus Area. The General Plan vision for the El Camino Real Focus Area is to transform it from a series of automobile-oriented strip-malls to a tree-lined, pedestrian- and transit-oriented corridor with a mix of residential and retail uses. General Plan Policy 5.4.1-P23 requires the City to prepare a precise plan for the segment of El Camino Real in the Focus Area to ensure that development is coordinated, and its design is consistent with that envisioned in the Focus Area.

The proposed ECR Specific Plan provides a vision and planning framework for future growth and development in the El Camino Real Corridor ("Plan Area"). The Plan provides a comprehensive vision for the Plan Area along with goals, policies, strategies and development standards to guide the Plan Area's future growth in an equitable manner than benefits the community. The Preferred Land Use Alternative selected by the City that is evaluated in this report would include up to 4,392 residential units beyond the 2,073 that were allocated under the General Plan and of which some of those residential units have already been constructed in the project area. Additionally, the ECR Specific Plan would reduce the existing commercial space by 289,000 square feet (sf).

AIR POLLUTANTS AND CONTAMINANTS

Air pollutants are governed by multiple federal and state standards to regulate and mitigate health impacts. At the federal level, there are six criteria pollutants for which National Ambient Air Quality Standards (NAAQS) have been established: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), suspended particulate matter (PM: $PM_{2.5}$ and PM_{10}), and sulfur dioxide (SO_2). California sets standards, similar to the NAAQS as California Ambient Air Quality Standards (CAAQS). Health effects of the primary criteria pollutants (i.e., the NAAQS) and their potential sources are described below and summarized in Table 1. Note that California includes pollutants or contaminants that are specific to certain industries and not associated with this project. These include hydrogen sulfide and vinyl chloride.

Ozone

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NO_X). The main sources of ROG and NO_X, often referred to as ozone precursors, are combustion processes (including combustion in motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the Bay Area, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, shortness of breath, and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Carbon Monoxide

Carbon monoxide is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles. While CO transport is

limited, it disperses with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthful levels that adversely affect local sensitive receptors (e.g., residents, schoolchildren, the elderly, hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal.

Nitrogen Dioxide

Nitrogen Dioxide is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 also contribute to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. NO_2 decreases lung function and may reduce resistance to infection. On January 22, 2010 the U.S. Environmental Protection Agency (EPA) strengthened the health-based NAAQS for NO_2.

Sulfur Dioxide

Sulfur dioxide is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels in the region. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight.

Particulate Matter

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles are those that are larger than 2.5 microns but smaller than 10 microns (PM_{10}). $PM_{2.5}$ refers to fine suspended particulate matter with an aerodynamic diameter of 2.5 microns or less that is not readily filtered out by the lungs. Nitrates, sulfates, dust, and combustion particulates are major components of PM_{10} and $PM_{2.5}$. These small particles can be directly emitted into the atmosphere as by-products of fuel combustion, through abrasion, such as tire or brake lining wear, or through fugitive dust (wind or mechanical erosion of soil). They can also be formed in the atmosphere through chemical reactions. Particulates may transport carcinogens and other toxic compounds that adhere to the particle surfaces and can enter the human body through the lungs.

Lead

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufactures.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the U.S. EPA established national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.

Table 1. Health Effects of Air Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood functions and nerve con-struction. • Behavioral and hearing problems in children.
Suspended Particulate Matter ($PM_{2.5}$ and PM_{10})	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardiorespiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.
Toxic Air Contaminants	• Cars and trucks, especially diesels. • Industrial sources such as chrome platers. • Neighborhood businesses such as dry cleaners and service stations. • Building materials and product.	• Cancer. • Chronic eye, lung, or skin irritation. • Neurological and reproductive disorders.

Source: CARB, 2009. ARB Fact Sheet: Air Pollution and Health, see: https://www.arb.ca.gov/research/health/fs/fs1/fs1.htm accessed May 1, 2018

Toxic Air Contaminants (TACs)

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated by the EPA and the California Air Resources Board (CARB). Some examples of TACs include benzene, butadiene, formaldehyde, and hydrogen sulfide. The identification, regulation, and monitoring of TACs is relatively recent compared to that for criteria pollutants.

High-volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truck stops) were identified as posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high-volume transit centers, or schools with a high-volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

Local Climate and Air Quality

Air quality is a function of both local climate and local sources of air pollution. Air quality is the balance of the natural dispersal capacity of the atmosphere and emissions of air pollutants from human uses of the environment. Climate and topography are major influences on air quality.

Climate and Meteorology

During the summer, mostly clear skies result in warm daytime temperatures and cool nights in the Santa Clara Valley. Winter temperatures are mild, except for very cool but generally frost-less mornings. Further inland where the moderating effect of the bay is not as strong, temperature extremes are greater. Rainfall amounts are modest, ranging from 13 inches in the lowlands to 20 inches in the hills. Wind patterns are influenced by local terrain, with a northwesterly breeze in response to the sea breeze infiltrating San Francisco Bay typically developing during the daytime. Winds are usually stronger in the spring and summer. The southerly winds experienced are more common in late fall and winter.

Air Pollution Potential

Ozone and fine particle pollution, or $PM_{2.5}$, are the major regional air pollutants of concern in the San Francisco Bay Area. Ozone is primarily a problem in the summer, and fine particle pollution in the winter. Most of Santa Clara County is well south of the cooler waters of the San Francisco Bay and far from the cooler marine air which usually reaches across San Mateo County in summer. Ozone frequently forms on hot summer days when the prevailing seasonal northerly winds carry ozone precursors southward across the county, causing health standards to be exceeded. Santa Clara County experiences many exceedances of the $PM_{2.5}$ standard each winter. This is due to the high population density, wood smoke, industrial and freeway traffic, and poor wintertime air circulation caused by extensive hills to the east and west that block wind flow into the region.

Attainment Status Designations

The CARB is required to designate areas of the state as attainment, nonattainment, or unclassified for all state standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A "nonattainment" designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An "unclassified" designation signifies that data does not support either an attainment or nonattainment status. The California Clean Air Act (CCAA) divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

Table 2 shows the state and federal standards for criteria pollutants and provides a summary of the attainment status for the San Francisco Bay Area with respect to national and state ambient air quality standards.

Table 2. NAAQS, CAAQS, and San Francisco Bay Area Attainment Status

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Carbon Monoxide (CO)	8-Hour	9 ppm (10 mg/m^3)	Attainment	9 ppm (10 mg/m^3)	Attainment
	1-Hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Attainment
Nitrogen Dioxide (NO_2)	Annual Mean	0.030 ppm (57 mg/m^3)	Attainment	0.053 ppm (100 $\mu g/m^3$)	Attainment
	1-Hour	0.18 ppm (338 $\mu g/m^3$)	Attainment	0.100 ppm	Unclassified
Ozone (O_3)	8-Hour	0.07 ppm (137 $\mu g/m^3$)	Nonattainment	0.070 ppm	Nonattainment
	1-Hour	0.09 ppm (180 $\mu g/m^3$)	Nonattainment	Not Applicable	Not Applicable
Suspended Particulate Matter (PM_{10})	Annual Mean	20 $\mu g/m^3$	Nonattainment	Not Applicable	Not Applicable
	24-Hour	50 $\mu g/m^3$	Nonattainment	150 $\mu g/m^3$	Unclassified
Suspended Particulate Matter ($PM_{2.5}$)	Annual Mean	12 $\mu g/m^3$	Nonattainment	12 $\mu g/m^3$	Attainment
	24-Hour	Not Applicable	Not Applicable	35 $\mu g/m^3$	Nonattainment
Sulfur Dioxide (SO_2)	Annual Mean	Not Applicable	Not Applicable	80 $\mu g/m^3$ (0.03 ppm)	Attainment
	24-Hour	0.04 ppm (105 $\mu g/m^3$)	Attainment	365 $\mu g/m^3$ (0.14 ppm)	Attainment
	1-Hour	0.25 ppm (655 $\mu g/m^3$)	Attainment	0.075 ppm (196 $\mu g/m^3$)	Attainment
Lead (Pb) is not listed in the above table because it has been in attainment since the 1980s. ppm = parts per million, mg/m^3 = milligrams per cubic meter, $\mu g/m^3$ = micrograms per cubic meter					

Source: Bay Area Air Quality Management District, 2017. *Air Quality Standards and Attainment Status.* January 5.

Existing Air Pollutant Levels

The Bay Area Air Quality Management District (BAAQMD) monitors air pollution at various sites within the Bay Area. The closest air monitoring station (158 Jackson Street) that monitored O_3, CO, NO, NO_2, PM_{10}, and $PM_{2.5}$ over the past 5 years (2016 through 2020) is in the City of San José approximately 5 miles southwest of the project site. The data shows that during the past few years, the project area has exceeded the state and/or federal O_3, PM_{10}, and $PM_{2.5}$ ambient air quality standards. Table 3 lists air quality trends in data collected by BAAQMD at the San José Station for the past 5 years, which is the most recent time-period available. Ozone standards are exceeded on 0 to 4 days annually in San José and 3 to 15 days throughout the Bay Area. Measured 24-hour PM_{10} and $PM_{2.5}$ concentrations are exceeded on 0 to 6 monitoring days in San José and up to 18 days at any place in the Bay Area (these levels were influences by smoke from wildfires).

Table 3. Ambient Air Quality Concentrations from 2016 through 2020

Pollutant	Standard	2016	2017	2018	2019	2020
Ozone						
Max 1-hr concentration		87 ppb	121 ppb	78 ppb	95 ppb	106 ppb
No. days exceeded: CAAQS	0	0	3	0	1	1
Max 8-hr concentration		66 ppb	98 ppb	61 ppb	81 ppb	85 ppb
No. days exceeded: CAAQS	0	0	4	0	2	2
NAAQS	0	0	3	0	2	2
Carbon Monoxide						
Max 1-hr concentration		2.0 ppm	2.1 ppm	2.5 ppm	1.7 ppm	--
No. days exceeded: CAAQS	0	0	0	0	0	--
NAAQS	0	0	0	0	0	--
Max 8-hr concentration		1.4 ppm	1.8 ppm	2.1 ppm	1.3 ppm	1.3 ppm
No. days exceeded: CAAQS	0	0	0	0	0	0
NAAQS	0	0	0	0	0	0
PM_{10}						
Max 24-hr concentration		41 µg/m^3	70 µg/m^3	122 µg/m^3	77 µg/m^3	137 µg/m^3
No. days exceeded: CAAQS	0	0	6	4	4	10
NAAQS	0	0	0	0	0	0
Max annual concentration		18.3 µg/m^3	21.3 µg/m^3	23.1 µg/m^3	19.2 µg/m^3	24.6 µg/m^3
No. days exceeded: CAAQS	-	-	-	-	-	-
$PM_{2.5}$						
Max 24-hr concentration		22.6µg/m^3	49.7 g/m^3	133.9µg/m^3	27.6 µg/m^3	120.5 µg/m^3
No. days exceeded: NAAQS	0	0	6	15	0	12
Annual Concentration		8.4 µg/m^3	9.5 µg/m^3	12.7µg/m^3	9.0µg/m^3	11.5µg/m^3
No. days exceeded: CAAQS	12 µg/m^3	-	-	-	-	-
NAAQS	12 µg/m^3	-	-	-	-	-
Nitrogen Dioxide						
Max 1-hr concentration		51 ppb	68 ppb	86 ppb	60 ppb	52 ppb
No. days exceeded: CAAQS	0	0	0	0	0	0
NAAQS	0	0	0	0	0	0
Annual Concentration		11 ppb	12 ppb	12 ppb	11 ppb	10 ppb
No. days exceeded: CAAQS	0.030 ppm	-	-	-	-	-
NAAQS	0.053 ppm	-	-	-	-	-

Source: Bay Area Air Quality Management District, 2020, Web: https://www.baaqmd.gov/en/about-air-quality/air-quality-measurement/air-quality-summaries. California Air Resource Board, 2020, Web: https://arb.ca.gov/adam/select8/sc8start.php.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. 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, infants and small 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. The Plan Area would include new residential dwellings that are considered sensitive receptors.

Odors

Odor impacts are subjective in nature and are generally regarded as an annoyance rather than a health hazard. The ability to detect and react to odors varies considerably among people. A strong or unfamiliar odor is more easily detected and are more likely to cause complaints. BAAQMD responds to odor complaints from the public and considers a source to have a substantial number of odor complaints if the complaint history includes five or more confirmed complaints per year averaged over a 3-year period. Facilities that are regulated by CalRecycle (e.g. landfill, composting, etc.) are required to have Odor Impact Minimization Plans in place.

REGULATORY FRAMEWORK

Pursuant to the Federal Clean Air Act (FCAA) of 1970, the EPA established the NAAQS. The NAAQS were established for major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.

Both the EPA and the CARB have established ambient air quality standards for common pollutants: CO, O_3, NO_2, SO_2, Pb, and PM. In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. These standards are designed to protect the health and welfare of the public with a reasonable margin of safety. These ambient air quality standards are levels of contaminants which represent safe levels that avoid specific adverse health effects associated with each criteria pollutant.

Federal Air Quality Regulations

At the federal level, the EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the FCAA, which was enacted in 1963. The FCAA was amended in 1970, 1977, and 1990.

The FCAA required EPA to establish primary and secondary NAAQS and required each state to prepare an air quality control plan referred to as a State Implement Plan (SIP). Federal standards include both primary and secondary standards. Primary standards set limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly.

Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.[1] The Federal Clean Air Act Amendments of 1990 (FCAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA has responsibility to review all state SIPs to determine conformity with the mandates of the FCAAA and determine if implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area which imposes additional control measures. Failure to submit an approvable SIP or to implement the Plan within the mandated timeframe may result in the application of sanctions on transportation funding and stationary air pollution sources in the air basin.

The 1970 FCAA authorized the establishment of national health-based air quality standards and also set deadlines for their attainment. The FCAA Amendments of 1990 changed deadlines for attaining NAAQS as well as the remedial actions required of areas of the nation that exceed the standards. Under the FCAA, state and local agencies in areas that exceed the NAAQS are required to develop SIPs to show how they will achieve the NAAQS by specific dates. The FCAA requires that projects receiving federal funds demonstrate conformity to the approved SIP and local air quality attainment Plan for the region. Conformity with the SIP requirements would satisfy the FCAA requirements.

State Air Quality Regulations

The CARB is the agency responsible for the coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA, adopted in 1988. The CCAA requires that all air districts in the state achieve and maintain the CAAQS by the earliest practical date. The CCAA specifies that districts should focus on reducing the emissions from transportation and air-wide emission sources and provides districts with the authority to regulate indirect sources.

CARB is also responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. CARB is primarily responsible for statewide pollution sources and produces a major part of the SIP. Local air districts provide additional strategies for sources under their jurisdiction. CARB combines this data and submits the completed SIP to the EPA.

Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS (which in many cases are more stringent than the NAAQS), determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, and off-road vehicles.

[1] See: U.S. Environmental Protection Agency, Web: https://www.epa.gov/criteria-air-pollutants/naaqs-table, Accessed 13 August 2020

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California Clean Air Act

In 1988, the CCAA established its own, more stringent ambient air quality standards, known as California Ambient Air Quality Standards (CAAQS). The CCAA requires that all air basins in the state endeavor to achieve and maintain CAAQS for CO, O_3, SO_2, and NO_2 by the earliest practical date. The CCAA establishes local air districts and provides them with authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each nonattainment area in the State is required to adopt a plan to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, for each nonattainment pollutant or its precursors. A Clean Air Plan is a SIP that shows how a district would reduce emissions to achieve air quality standards.

California Air Resources Board

The California Air Resources Board (CARB) is the agency responsible for coordination with the EPA and developing SIPs to achieve and maintain both the NAAQS and CAAQS. As a result, it has oversight of the state's air pollution control programs. Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, and off-road vehicles.

California Air Resources Board Handbook

In 1998, CARB identified particulate matter from diesel-fueled engines (i.e., DPM) as a toxic air contaminant. CARB has completed a risk management process that identified potential cancer

risks for a range of activities using diesel-fueled engines.[2] CARB subsequently developed an Air Quality and Land Use Handbook[3] (Handbook) in 2005 that is intended to serve as a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. The 2005 CARB Handbook recommends that planning agencies consider proximity to air pollution sources when considering new locations for "sensitive" land uses, such as residences, medical facilities, daycare centers, schools, and playgrounds.

Air pollution sources of concern include freeways, rail yards, ports, refineries, distribution centers, chrome plating facilities, dry cleaners, and large gasoline service stations. Key recommendations in the Handbook relative to the Plan Area include taking steps to consider or avoid siting new, sensitive land uses:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles/day or rural roads with 50,000 vehicles/day.
- Within 300 feet of gasoline fueling stations (note that new fueling stations utilize enhanced vapor recovery systems that substantially reduce emissions).
- Within 300 feet of dry-cleaning operations (note that dry cleaning with TACs is being phased out and will be prohibited in 2023).

CARB is actively enforcing heavy-duty diesel vehicle regulations that require fleets to replace or retrofit heavy-duty diesel vehicles, with full implementation of the program scheduled for January 1, 2023. Compliance with the program is generally considered vehicles equipped with a 2010 or newer engine model year. As of January 1, 2020, the DMV cannot register any vehicle that does not meet the requirements of the Truck and Bus Regulation.

Other CARB diesel programs affecting heavy-duty diesel vehicles include:

- Idling limits of no more than 5 minutes with special exceptions.
- Emission Control Labels must be affixed to engines of all commercial heavy-duty diesel vehicles, and must be legible as proof the engine, at minimum, meets U.S. federal emissions standards for the engine model year.
- The Periodic Smoke Inspection Program requires owners of California-based fleets of two or more diesel vehicles to perform annual smoke opacity tests and to keep records for at least two years for each vehicle.
- The Heavy-Duty Vehicle Inspection Program uses random roadside inspections to verify that diesel engines do not smoke excessively and are tamper-free.

Off-Road Vehicle and Equipment Regulations

CARB has also adopted and implemented regulations to reduce DPM and nitrogen oxides (NOx) emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders,

[2] California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.
[3] California Air Resources Board, 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April.

tractors, bulldozers, backhoes, off-highway trucks, etc.). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce particulate matter and NOx 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. Implementation of this regulation, in conjunction with stringent Federal off-road equipment engine emission limits for new vehicles, is expected to substantially reduce emissions of DPM and NOx.

Fleet owners must report the vehicle and engine information for all vehicles within their fleets operating in California. Fleet owners must also report owner information. Fleet owners should report using DOORS, which is CARB's online reporting tool. CARB issues a unique Equipment Identification Number (EIN) that is assigned to each vehicle. The fleet owner must label their vehicles with the EIN.

Other CARB diesel programs affecting off-road vehicles and equipment include:

- Idling limits of no more than 5 minutes with special exceptions.
- Portable engines 50 hp or greater may require a permit or registration to legally operate. BAAQMD is responsible for taking enforcement action against individuals who own or operate portable equipment without a registration or permit.

Advanced Clean Trucks (ACT)

California's Advanced Clean Trucks (ACT) increases the percentage of medium and heavy-duty trucks sold as zero emission vehicles (ZEVs) beginning in 2024. By 2035, 40 to 75 percent of new trucks sold, depending on size, would have to meet ZEV requirements. In addition, large employers including retailers, manufacturers, brokers and others are required to report information about shipments and shuttle services with 50 or more trucks, are required to report about their existing fleet operations.

Advanced Clean Cars

CARB regulates emissions from on-road vehicles in a number of ways that including the setting emission standards, testing vehicles through the Smog Check Program (administered by the Bureau of Automotive Repair) and implementation of fleet retrofit or replacement schedules. The Advanced Clean Cars Program, adopted by CARB in 2012, was designed to bring together CARB's traditional passenger vehicle requirements to meet federal air quality standards and also support California's AB 32 goals to develop and implement programs to reduce GHG emissions back down to 1990 levels by 2020, a goal achieved in 2016 as a result of numerous emissions reduction programs.

This recent rule, *Advanced Clean Cars II (ACC II)* is phase two of the original rule. ACC II establishes a year-by-year process, starting in 2026, so all new cars and light trucks sold in California will be zero-emission vehicles by 2035, including plug-in hybrid electric vehicles. The regulation codifies the light-duty vehicle goals set out in Governor Newsom's Executive Order N-79-20. Currently, 16 percent of new light-duty vehicles sold in California are zero emissions or

plug-in hybrids. By 2030, 68 percent of new vehicles sold in California would be zero emissions and 100 percent by 2035.

Bay Area Air Quality Management District

The BAAQMD seeks to attain and maintain air quality conditions in the San Francisco Bay Area Air Basin (SFBAAB) through a comprehensive program of planning, regulation, enforcement, technical innovation, and education. The clean air strategy includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The BAAQMD also inspects stationary sources and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law.

Clean Air Plan

The BAAQMD is responsible for developing a Clean Air Plan which guides the region's air quality planning efforts to attain the CAAQS. The BAAQMD's 2017 Clean Air Plan is the latest Clean Air Plan which contains district-wide control measures to reduce ozone precursor emissions (i.e., ROG and NO_X), particulate matter and greenhouse gas emissions. The Bay Area 2017 Clean Air Plan, which was adopted on April 19, 2017 by the BAAQMD's board of directors:

- Updates the Bay Area 2010 Clean Air Plan in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone;
- Provides a control strategy to reduce ozone, particulate matter (PM), air toxics, and greenhouse gases in a single, integrated plan;
- Reviews progress in improving air quality in recent years; and
- Continues and updates emission control measures.

CARE Program

The BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.[4] The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program has been implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses has been used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. The BAAQMD has

[4] See BAAQMD: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program.

identified six communities as impacted: Concord, Richmond/San Pablo, Western Alameda County, San José, Redwood City/East Palo Alto, and Eastern San Francisco.

Overburdened Communities Program

To address localized health impacts in Bay Area communities, BAAQMD staff met with community advocacy organizations to develop concepts and recommendations on how the air district could be more health protective. Through a series of public workshops and a public comment period, BAAQMD amended Rule 2 (i.e., Regulation 2-1-24) in 2021. It identifies an *overburdened* community as an area located (i) within a census tract identified by the California Office of Environmental Health Hazard Assessment's (OEHHA's) Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0, as having an overall score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract. Projects in overburdened communities must conduct specific public involvement activities and stationary sources are subject to specific permitting requirements.

Planning Healthy Places

BAAQMD developed a guidebook that provides air quality and public health information intended to assist local governments in addressing potential air quality issues related to exposure of sensitive receptors to exposure of emissions from local sources of air pollutants. The guidance provides tools and recommends best practices that can be implemented to reduce exposures. The information is provided as recommendations to develop policies and measures in city or county General Plans, neighborhood or specific plans, land use development ordinances, or into projects.

Furnaces and Boilers and Water Heaters

In 2023, the Air District adopted the proposed amendments to Rules 9-4 and 9-6 that are intended to reduce emissions of NOx from residential and commercial water heaters. These amended rules will affect Bay Area households that use natural gas appliances by, essentially, prohibiting the installation of new natural gas-fired furnaces and water heaters. The rules require appliances that do not emit NOx. Currently, the only zero-NOx appliances available are electric appliances. Implementation begins in 2027, where only zero-NOx water heaters can be sold or installed, in 2029 where only zero-NOx furnaces can be sold or installed, and 2031 where only zero-NOx large commercial heaters can be sold or installed. Note that electric appliances would have zero emission of other criteria pollutants and zero emissions of direct GHG.

BAAQMD CEQA Air Quality Guidelines

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. In 2023, the BAAQMD revised their *California Environmental Quality Act* (*CEQA) Air Quality Guidelines*[5] that include significance thresholds to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The current BAAQMD guidelines provide recommended procedures for evaluating potential air impacts during the environmental

[5] Bay Area Air Quality Management District, *2022 CEQA Guidelines*. April2023.

review process consistent with CEQA requirements. Included in the guidelines are assessment methodologies for criteria air pollutants, air toxics, odors, and GHG emissions. Air quality impacts and health risks are considered potentially significant if they exceed these thresholds.

The BAAQMD recommends all projects include a "basic" set of best management practices (BMPs) to manage fugitive dust and consider impacts from dust (i.e., fugitive PM_{10} and $PM_{2.5}$) to be less than significant if BMPs are implemented. BAAQMD strongly encourages enhanced BMPs for construction sites near schools, residential areas, other sensitive land uses, or if the basic BMPs do not adequately reduce fugitive emissions below BAAQMD significance thresholds.

BAAQMD Rules and Regulations

Combustion equipment associated with the proposed project that includes new diesel engines to power generators and possibly cooling towers would establish new sources of particulate matter and gaseous emissions. Emissions would primarily result from the testing of the emergency backup generators and some minor emissions from cooling towers. Certain emission sources would be subject to BAAQMD Regulations and Rules. The District's rules and regulations that may apply to project operation include:

- Regulation 1 – General Provisions
    - Rule 1-30: Public Nuisance
- Regulation 2 – Permits
    - Rule 2-1: General Requirements
    - Rule 2-2: New Source Review
    - Rule 2-5: New Source Review of Toxic Air Contaminants
- Regulation 6 – Particulate Matter and Visible Emissions
    - Rule 6-2: Commercial Cooking Equipment
    - Rule 6-3: Wood-Burning Devices
    - Rule 6-7: Odorous Substances
- Regulation 9 – Inorganic Gaseous Pollutants
    - Rule 9-1: Sulfur Dioxide
    - Rule 9-7: Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, And Process Heaters
    - Rule 9-8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines

Permits

Rule 2-1-301 requires that any person installing, modifying, or replacing any equipment, the use of which may reduce or control the emission of air contaminants, shall first obtain an Authority to Construct (ATC).

Rule 2-1-302 requires that written authorization from the BAAQMD in the form of a Permit to Operate (PTO) be secured before any such equipment is used or operated.

Rule 2-1 lists sources that are exempt from permitting. At the proposed facility, the diesel fuel storage tanks are expected to be exempt from permitting.

New Source Review

Rule 2-2, New Source Review (NSR), applies to all new and modified sources or facilities that are subject to the requirements of Rule 2-1-301. The purpose of the rule is to provide for review of such sources and to provide mechanisms by which no net increase in emissions will result.

Rule 2-2-301 requires that an applicant for an ATC or PTO apply Best Available Control Technology (BACT) to any new or modified source that results in an increase in emissions and has emissions of precursor organic compounds, non-precursor organic compounds, NOx, SO_2, PM_{10}, or CO of 10.0 pounds or more per highest day. Based on the estimated emissions from the proposed project, BACT will be required for NOx emissions from the diesel-fueled generator engines.

BACT for Diesel Generator Engines

Since the generators will be used exclusively for emergency use during involuntary loss of power, the BACT levels listed for IC compression engines in the BAAQMD BACT Guidelines would apply. These are provided for two separate size ranges of diesel engines:

> I.C. Engine – Compression Ignition >50hp and <1,000hp: BAAQMD applies BACT 2 emission limits based on the ATCM for stationary emergency standby diesel engines larger than 50 brake-horsepower (BHP). NOx emission factor limit is subject to the CARB ACTM that ranges from 3.0 to 3.5 grams per horsepower hour (g/hp-hr). The PM (PM10 or PM2.5) limit is 0.15 g/hp-hr per CARB's ACTM.
>
> I.C. Engine – Compression Ignition >999hp: BAAQMD applies specific BACT emission limits for stationary emergency standby diesel engines equal or larger than 1,000 brake-horsepower (BHP). NOx emission factor limit is 0.5 g/hp-hr. The PM (PM10 or PM2.5) limit is 0.02 g/hp-hr. POC (i.e., ROG) limits are 0.14 g/hp-hr.

Offsets

Rule 2-2-302 require that offsets be provided for a new or modified source that emits more than 10 tons per year of NOx or precursor organic compounds. It is not expected that emissions of any pollutant will exceed the offset thresholds. Thus, is not expected that offsets for the proposed project would be required.

Rule 2-5 applies to new and modified sources of TAC emissions. BAAQMD evaluates the TAC emissions in order to evaluate potential public exposure and health risk, to mitigate potentially significant health risks resulting from these exposures, and to provide net health risk benefits by improving the level of control when existing sources are modified or replaced. Toxics BACT (or TBACT) is applied to any new or modified source of TACs where the source risk is a cancer risk greater than 1.0 in one million and/or a chronic hazard index greater than 0.20. Permits are not

issued for any new or modified source that has risks or net project risks that exceed a cancer risk of 10.0 in one million or a chronic or acute hazard index of 1.0.

Prohibitory Rules

Regulation 6 pertains to particulate matter and visible emissions. Although the engines will be fueled with diesel, they will be modern, low emission engines. Thus, the engines are expected to comply with Regulation 6.

Rule 6-3 applies to emissions from wood-burning devices. Effective November 1, 2016, no person or builder shall install a wood-burning device in a new building construction. Project plans do not depict fireplaces.
Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds when the District receives odor complaints. The regulation prohibits discharge of odorous substance that causes the ambient air at or beyond the property line to be odorous and to remain odorous after dilution with four parts of odor-free air and places limits on certain odorous compounds or family of compounds.

Rule 9-1 applies to sulfur dioxide. The engines will use ultra-low sulfur diesel fuel (less than 15 ppm sulfur) and will not be a significant source of sulfur dioxide emissions and are expected to comply with the requirements of Rule 9-1.

Rule 9-7 limits the emissions of NOx CO from industrial, institutional and commercial boilers, steam generators and process heaters. This regulation typically applies to boilers with a heat rating of 2 million British Thermal Units (BTU) per hour

Rule 9-8 prescribes NOx and CO emission limits for stationary internal combustion engines. Since the proposed engines will be used with emergency standby generators, Regulation 9-8-110 exempts the engines from the requirements of this Rule, except for the recordkeeping requirements (9-8-530) and limitations on hours of operation for reliability-related operation (maintenance and testing). The engines will not operate more than 50 hours per year, which will satisfy the requirements of 9-8-111.

City of Santa Clara

<u>City of Santa Clara 2010 – 2035 General Plan</u>

On November 16, 2010, the City of Santa Clara adopted the City of Santa Clara 2010 – 2035 General Plan. It updated portions of the Plan on December 9, 2014 and included the City's Climate Action Plan (CAP) as an appendix to the Plan. The City's CAP was updated on June 7, 2022.

The current General Plan includes goals, policies, and actions to reduce air pollutants and exposure to toxic air containments. The following goals, policies, and actions are applicable:

5.10.2 Air Quality Goals

5.10.2-G1 Improved air quality in Santa Clara and the region.

5.10.2-G2 Reduced greenhouse gas emissions that meet the State and regional goals and requirements to combat climate change.

5.10.2 Air Quality Policies

5.10.2-P1 Support alternative transportation modes and efficient parking mechanisms to improve air quality.

5.10.2-P2 Encourage development patterns that reduce vehicle miles traveled and air pollution.

5.10.2-P3 Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.

5.10.2-P4 Encourage measures to reduce greenhouse gas emissions to reach 30 percent below1990 levels by 2020.

5.10.2-P5 Promote regional air pollution prevention plans for local industry and businesses.

5.10.2-P6 Require "Best Management Practices" for construction dust abatement.

In addition, the Safety Goals and Policies of the General Plan are supported by the following policies related to air quality:

5.10.5 Safety Policies

5.10.5-P34 Implement minimum setbacks of 500 feet from roadways with average daily trips of 100,000 or more and 100 feet from railroad tracks for new residential or other uses with sensitive receptors, unless a project-specific study identifies measures, such as site design, tiered landscaping, air filtration systems, and window design, to reduce exposure, demonstrating that the potential risks can be reduced to acceptable levels.

5.10.5-P35 Establish minimum buffers between odor sources and new residential or other uses with sensitive receptors, consistent with BAAQMD guidelines, unless a project-specific study demonstrates that these risks can be reduced to acceptable levels.

The General Plan includes *Prerequisite Goals and Policies* that relate to air quality. Some of these policies addressed significant impacts identified in the Draft Environmental Impact Report for the General Plan. The following policy related to air quality was included in the General Plan:

5.1.1-P24 Prior to the implementation of Phase III, the City will include a community Risk Reduction Plan ("CRRP") for acceptable Toxic Air Contaminant ("TAC") concentrations, consistent with the Bay Area Air Quality Management District ("BAAQMD") CEQA Guidelines, including risk and

exposure reduction targets, measures to reduce emissions, monitoring procedures, and a public participations process.

Note that the City has not yet developed a CRRP, so health risk assessments are performed for projects that contain sensitive receptors near sources of air pollution or TACs. These include modeling of health risks for individual projects located within the minimum setbacks for roadways and railroads. Mitigation measures such as (but not limited to); site redesign, tiered plantings of trees, air filtration systems, and location of air intakes and design windows to reduce exposure, shall be required to reduce these risks to acceptable levels.

SIGNIFICANCE THRESHOLDS

Significance Criteria

Per Appendix G of the CEQA Guidelines and BAAQMD recommendations, air quality and GHG impacts are considered significant if implementation of the General Plan would:

1) Conflict with or obstruct implementation of an applicable air quality plan.
2) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.
3) Expose sensitive receptors to substantial pollutant concentrations.
4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.
5) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
6) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

BAAQMD provided revised CEQA Guidelines. The thresholds identified in Table 4 and Table 5 represent the most recent guidance provided by BAAQMD. Though not necessarily a CEQA issue, the effect of existing TAC sources on future sensitive receptors (e.g., residences) is analyzed to comply with BAAQMD's Clean Air Plan key goal of reducing population TAC exposure and protecting public health in the Bay Area.

Table 4. BAAQMD Plan-Level Air Quality Significance Thresholds

Pollutant/ Contaminant	Construction Related	Operational
Criteria Air Pollutants (Regional)	None	1. Consistency with Current Air Quality Plan control measures, and 2. Projected vehicle miles traveled (VMT) or vehicle trip increase is less than or equal to projected population increase
Local Risks and Hazards	None	1. Overlay zones around existing and planned sources of TACs (including adopted Risk Reduction Plan areas), and 2. Overlay zones of at least 500 feet from all freeways and high-volume roadways For this analysis – overlay zones are based on potential for sources to result in the following impacts: 1. Excess cancer risk >10.0 chances per million 2. Annual PM2.5 Concentration > 0.3 $\mu g/m^3$ 3. Hazard Index >1.0
Accidental Release of Acutely Hazardous Air Pollutants	None	None
Odors	None	Identify the location, and include policies to reduce the impacts, of existing or planned sources of odors
Climate Impacts	None	1. Meet State's goals to reduce emissions to 40 percent below 1990 levels by 2030 and carbon neutrality by 2045; or 2. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b)

Table 5. BAAQMD Project-Level Air Quality Significance Thresholds

Criteria Air Pollutant	Construction Thresholds		Operational Thresholds	
	Average Daily Emissions (lbs./day)		Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
ROG	54		54	10
NO_X	54		54	10
PM_{10}	82 (Exhaust)		82	15
$PM_{2.5}$	54 (Exhaust)		54	10
CO	Not Applicable		9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices (BMPs)*		Not Applicable	
Health Risks and Hazards	**Single Sources/ Individual Project**		**Combined Sources (Cumulative from all sources within 1000-foot zone of influence)**	
Excess Cancer Risk	>10 in a million	OR Compliance with Qualified Community Risk Reduction Plan	>100 in a million	OR Compliance with Qualified Community Risk Reduction Plan
Hazard Index	>1.0		>10.0	
Incremental annual $PM_{2.5}$	>0.3 µg/m^3		>0.8 µg/m^3	
Greenhouse Gas Emissions				
Land Use Projects – (Must Include A or B)	A. Projects must include, at a minimum, the following project design elements: 1. Buildings a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development). b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines. 2. Transportation a. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA: i. Residential projects: 15 percent below the existing VMT per capita ii. Office projects: 15 percent below the existing VMT per employee iii. Retail projects: no net increase in existing VMT b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2. B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).			
Odors				
Construction:	No thresholds			
Operation:	Five confirmed odor complaints averaged over 3 years.			

Note: ROG = reactive organic gases, NO_X = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. GHG = greenhouse gases.

* BAAQMD strongly recommends implementing all feasible fugitive dust management practices especially when construction projects are located near sensitive communities, including schools, residential areas, or other sensitive land uses.

Source: Bay Area Air Quality Management District, 2022.

AIR QUALTIY IMPACTS AND MITIGATION MEASURES

Impact AIR-1: Conflict with or obstruct implementation of an applicable air quality plan?

BAAQMD is the regional agency responsible for overseeing compliance with State and federal laws, regulations, and programs within the SFBAAB. BAAQMD, with assistance from ABAG and Metropolitan Transportation Commission (MTC), has prepared and implements specific plans to meet the applicable laws, regulations, and programs. The most recent and comprehensive of which is the *Bay Area 2017 Clean Air Plan*.[6] The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality impacts. In formulating compliance strategies, BAAQMD relies on planned land uses established by local general plans. Land use planning affects vehicle travel, which in turn affects region-wide emissions of air pollutants and GHGs.

Consistency of the ECR Specific Plan with Clean Air Plan control measures is demonstrated by assessing whether the proposed Plan implements the applicable Clean Air Plan control measures. The 2017 Clean Air Plan includes control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. The control measures are divided into five categories that include:

- 40 measures to reduce stationary and area sources;
- 8 mobile source measures;
- 23 transportation control measures (including land use strategies);
- 4 building sector measures;
- 2 energy sector measures;
- 4 agriculture sector measures;
- 3 natural and working lands measures;
- 4 waste sector measures;
- 2 water sector measures; and
- 3 super-GHG pollutants measures.

In developing the control strategy, BAAQMD identified the full range of tools and resources available, both regulatory and non-regulatory, to develop each measure. Implementation of each control measure will rely on some combination of the following:

- Adoption and enforcement of rules to reduce emissions from stationary sources, area sources, and indirect sources.
- Revisions to the BAAQMD's permitting requirements for stationary sources.
- Enforcement of CARB rules to reduce emissions from heavy-duty diesel engines.
- Allocation of grants and other funding by the Air District and/or partner agencies.
- Promotion of best policies and practices that can be implemented by local agencies through guidance documents, model ordinances, and other measures.

[6] Bay Area Air Quality Management District (BAAQMD), 2017. *Final 2017 Clean Air Plan.*

- Partnerships with local governments, other public agencies, the business community, non-profits, and other groups.
- Public outreach and education.
- Enhanced air quality monitoring.
- Development of land use guidance and CEQA guidelines, and Air District review and comment on Bay Area projects pursuant to CEQA.
- Leadership and advocacy.

This approach relies upon lead agencies to assist in implementing some of the control measures. A key tool for local agency implementation is the development of land use policies and implementing measures that address new development or redevelopment in local communities. To address this impact, the ECR Specific Plan's effect on implementing the Clean Air Plan is evaluated based on consistency with Clean Air Planning projections (i.e., rate of increase in population versus vehicle travel)

Consistency with Clean Air Plan Projections

The BAAQMD, with assistance from ABAG and MTC, has prepared and implemented the Clean Air Plan to meet the applicable laws, regulations, and programs. The primary goals of the Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions and protect the climate. The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality impacts. In formulating compliance strategies, BAAQMD relies on planned land uses established by local general plans. Land use planning affects vehicle travel, which in turn affects region-wide emissions of air pollutants and GHG.

Table 6 provides build-out under the ECR Specific Plan would increase the service population by result in estimated additional 11,734 additional residents and workers through build-out of 4,392 new residential units while decreasing commercial space by 289,000-sf. In other words, the increase in service population is anticipated to be residents. Daily vehicle miles traveled (VMT) for build-out of the ECR Specific Plan area were provided by the project traffic consultant. Using the existing no project as a baseline condition (estimated at 132,596 miles), VMT attributable to the ECR Specific Plan is anticipated to decrease approximately 5 percent at build-out (by 7,267 miles). The VMT per capita is anticipated to decrease from 35.6 miles to 8.1 miles with the ECR Specific Plan. A decrease in VMT per capita under cumulative conditions is also anticipated with the ECR Specific Plan. The ECR Specific Plan would not increase VMT at a greater rate than the increase in population.

Table 6. ECR Specific Plan Traffic and Population Projections

Scenario	Population	Daily Trips	Daily VMT	VMT/Capita	Dwelling Units	1,000-SF of Retail
Existing No Project	3,729	8,595	132,596	35.6	2,500	2,265
Existing with Project	15,463	19,473	125,329	8.1	6,892	1,976
Net Change	*+11,734*	*+10,878*	*-7,267*	--	*+4,392*	*-289*
Cumulative No Project	4,496	10,466	125,045	27.8	--	--
Cumulative with Project	16,230	19,230	191,114	11.8	--	--
Net Change	*+11,734*	*+8,764*	*+66,069*	--	--	--
Note: VMT and population are obtained from the City of Santa Clara's Travel Demand Forecasting model.						

Source: Fehr & Peers, October 2024.

Consistency with Clean Air Plan Control Measures

The Guidelines set forth criteria for determining consistency with the Clean Air Plan control measures. In general, a plan is considered consistent if a) the plan supports the primary goals of the Clean Air Plan; b) includes control measures; and c) does not interfere with implementation of the Clean Air Plan measures. ECR Specific Plan is a considered a sustainable development since it is an infill development that would be transit-oriented and located near a mix of uses that include employment and services. As a result, these types of communities reduce the rate of per capita VMT. As a sustainable development, the ECR Specific Plan would generally be consistent with Clean Air Plan measures intended to reduce automobile and energy use, which are discussed below. Table 7 lists those Clean Air Plan policies relevant to the ECR Specific Plan and indicates consistency with the policies.

Table 7. BAAQMD Control Strategy Measures from the Clean Air Plan

Applicable BAAQMD Control Strategy Measures	Consistency
Transportation Control Measures	
TR1: Clean Air Teleworking Initiative	Consistent The ECR Specific Plan would encourage the implementation of Transportation Demand Management (TDM) programs for new development, which would include measures such as increased support for telecommuting
TR2: Trip Reduction Programs	Consistent The ECR Specific Plan would encourage the implementation of TDM programs for new development, which would include measures such as transit subsidies, carpool incentives, bicycling incentives, carshare memberships, and/or vanpools.

Applicable BAAQMD Control Strategy Measures	Consistency
TR 5: Transit Efficiency and Use	Consistent While this is mostly a regionally implemented control measure, the ECR Specific Plan would provide connections to regional and local transit with its convenient location near the Santa Clara and Lawrence transit stations.
TR7: Safe Routes to Schools and Safe Routes to Transit	Consistent The ECR Specific Plan would ensure clear and safe pedestrian circulation. Convenience, safety and integrated access would be prioritized for all modes of transportation.
TR8: Ridesharing, Last-Mile Connection	Consistent The ECR Specific Plan would encourage the implementation of TDM programs, which may include measures such as carpool incentives, carshare memberships, additional Last Mile services, and/or vanpools.
TR9: Bicycle and Pedestrian Access and Facilities	Consistent The ECR Specific Plan would result in a dense, walkable environment, simplify wayfinding, and ensure clear and safe pedestrian circulation.
TR10: Land Use Strategies	Consistent The ECR Specific Plan would support the implementation of Plan Bay Area 2040 by focusing new development on infill areas in close proximity to transit, creating opportunities for more sustainable transportation modes that are less reliant on automobiles.
TR13: Parking Policies	Consistent The ECR Specific Plan would reduce demand for parking through site design, transit accessibility and TDM programs.
Building Control Measures	
BL1: Green Buildings	Consistent New construction allowed under the ECR Specific Plan would meet new Title 24 standards as well as City requirements.
BL2: Decarbonize Buildings	Consistent The ECR Specific Plan would encourage energy generation through on-site photovoltaic on buildings and would discourage the use of natural gas. In addition, the ECR Specific Plan supports the goal of net zero energy on-site over time as the electricity provider, Silicon Valley Power, strives to provide carbon free generated electricity to their Santa Clara customers as well as the purchase of renewable energy credits.

Applicable BAAQMD Control Strategy Measures	Consistency
BL4: Urban Heat Island Mitigation	Consistent The ECR Specific Plan would reduce cooling load by maximizing shade through increased tree and landscape planting throughout the Specific Plan area.
Natural and Working Lands Control Measures	
NW2: Urban Tree Planting	Consistent The ECR Specific Plan would provide a comfortable, well-shaded environment defined by a consistent, linear planting plan along the streets and a variety of trees in parks and greenways.
Waste Management Control Measures	
WA4: Recycling and Waste Reduction	Consistent The ECR Specific Plan would include on-site recycling facilities, implement a construction waste management plan, and meet the waste diversion goals outlined in the California Integrated Waste Management Act and AB 935.
Water Control Measures	
WR2: Support Water Conservation	Consistent ECR Specific Plan would support the City's General Plan policies encouraging new development to utilize recycled water for landscape irrigation, and promoting water conservation (Policies 5.3.1-P11, 5.10.4-P3, and 5.10.4-P8).

As indicated in Table 7, the ECR Specific Plan would include implementing policies and measures that are generally consistent with the applicable Clean Air Plan control measures.

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

The Bay Area is considered a non-attainment area for ground-level ozone and $PM_{2.5}$ under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for PM_{10} under the California Clean Air Act, but not the federal act. The area has attained both state and federal ambient air quality standards for carbon monoxide. As part of an effort to attain and maintain ambient air quality standards for ozone and particulate matter (i.e., $PM_{2.5}$ and PM_{10}), the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for ozone precursor pollutants (ROG and NOx), PM_{10}, and $PM_{2.5}$ and apply to both construction period and operational period impacts for projects. They do not apply to plans, such as ECR Specific Plan.

Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single

project is sufficient in size to by itself, result in nonattainment of ambient air quality standards. Instead a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

ECR Specific Plan Construction Period Emission

Implementation of the Specific Plan would result in temporary emissions from construction activities associated with subsequent development, including demolition, site grading, asphalt paving, building construction, and architectural coating. Emissions commonly associated with construction activities include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips. During construction, fugitive dust, the dominant source of PM_{10} and $PM_{2.5}$ emissions, is generated when wheels or blades disturb surface materials. Uncontrolled dust from construction can become a nuisance and potential health hazard to those living and working nearby. The potential health risk impact from construction is addressed under Impact 4.

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site deposit mud on local streets, which is an additional source of airborne dust after it dries. The BAAQMD recommends all projects include a "basic" set of best management practices (BMPs) to manage fugitive dust and considers impacts from dust (i.e., fugitive PM_{10} and $PM_{2.5}$) to be less-than-significant if BMPs are implemented to reduce these emissions. *Santa Clara General Plan Policy 5.10.2-P6 would implement the BAAQMD basic BMPs to control dust during construction.*

Construction exhaust emissions include those from equipment (i.e., off-road) and traffic (on-road vehicles and trucks). Off-road construction equipment is often diesel-powered and can be a substantial source of NO_X emissions, in addition to PM_{10} and $PM_{2.5}$ emissions. Architectural coatings and application of asphalt pavement are dominant sources of ROG emissions. The BAAQMD CEQA Air Quality Guidelines do not identify quantified plan level thresholds for construction emissions. There are project-level thresholds of 54 pounds per average day for NOx, ROG and $PM_{2.5}$ exhaust and 82 pounds per average day for PM_{10} exhaust. Unless controlled, the combination of temporary dust from activities and diesel exhaust from construction equipment and related traffic may pose a nuisance impact to nearby receptors or exceed acceptable levels for projects. In addition, NO_X emissions during grading and soil import/export for large projects may exceed the BAAQMD NO_X emission thresholds for projects.

Without application of appropriate control measures to reduce construction dust and exhaust, construction period impacts at the program level would be considered a *potentially significant impact*. *Implementation of Santa Clara General Plan Policy 5.10.2-P6 and Mitigation Measures AQ-1 would reduce this impact to a level of less-than-significant.*

Santa Clara General Plan Policy 5.10.2-P6: BMPs for Construction Dust Suppression.

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. The contractor shall implement the following best management practices required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.

7. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.

8. Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.

9. Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure AQ-1: Require Project-Level Construction Assessment for Projects in the ECR Specific Plan.

Construction criteria pollutant and TAC quantification shall be required on individual projects developed under the ECR Specific Plan once those details are available through modeling to identify impacts and, if necessary, include measures to reduce emissions below the applicable BAAQMD construction thresholds. Reductions in emissions can be accomplished through, though is not limited to, the following measures:

- Construction equipment selection for low emissions (e.g., U.S. EPA Tier 4 standards);

- Use of alternative fuels, engine retrofits, and added exhaust devices;
- Low-VOC paints;
- Modify construction schedule; and
- Implementation of Santa Clara General Plan Policy 5.10.2-P6/BAAQMD Basic and/or Enhanced Construction Mitigation Measures for control of fugitive dust.

Note screening tables included in the BAAQMD CEQA Air Quality Guidelines can be used to demonstrate less-than-significant criteria air pollutant emissions for small projects.

Effectiveness of Santa Clara General Plan Policy 5.10.2-P6 and Mitigation Measures AQ-1

Site-specific construction schedules and equipment are not known at this time for the future development area and have not been quantified at the project level. Implementation of Santa Clara General Plan Policy 5.10.2-P6 would ensure that all construction projects employ the proper BAAQMD-Recommended BMPs to Control Construction Dust Emissions. Implementation of Mitigation Measure AQ-1 would ensure that construction of future development areas under the ECR Specific Plan would be analyzed through project-level review to quantify construction criteria pollutant emissions and identify the specific measures needed to reduce potential impacts, as necessary. *Therefore, with implementation of Santa Clara General Plan Policy 5.10.2-P6 and Mitigation Measure AQ-1, the potential impact from construction of individual construction projects within the future development in the ECR Specific Plan area would be reduced to a level of less-than-significant*.

ECR Specific Plan Operational Period Emissions

Implementation of the ECR Specific Plan would result in long-term area and mobile source emissions from operation and use of subsequent development. As described above, implementation of the ECR Specific Plan would contribute to a decrease in VMT associated with the ECR Specific Plan area (see discussion under Impact 1). There are no significance thresholds applicable to emissions associated with plan-level development; however, there are project-level thresholds. For annual emissions, these are emissions of 10 tons for ROG, NOx or $PM_{2.5}$ and 15 tons for PM_{10}. For average daily emissions, these are 54 pounds for ROG, NOx or $PM_{2.5}$ and 82 pounds for PM_{10}.

CalEEMod Modeling Assumptions

Operational air emissions from the project would be generated primarily from autos driven by future residents and employees. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are typical ROG emissions from these types of land uses. CalEEMod was used to estimate net emissions from operation of the proposed project assuming full buildout in 2030 or later.

Land Uses

The ECR Specific Plan land uses were input to CalEEMod, which included model runs for 6,892 total dwelling units entered as “Apartments Mid Rise” and 1,976,000-sf entered as “Strip Mall”

for the Existing with Project scenario. Currently, the Plan Area is developed, and model runs were developed to account for the Existing No Project scenario. Inputs included 2,500 dwelling units entered as "Apartments Mid Rise" and 2,265,000-sf entered as "Strip Mall".

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. Emissions associated with build-out later than 2030 would be lower.

Traffic Inputs

CalEEMod allows the user to enter specific vehicle trip generation rates, which were input to the model using the daily trip generation rate provided by the project traffic consultant[7]. The trip distances were adjusted to reflect the VMT also predicted by the project traffic consultant. Daily VMT was divided by the daily number of trips to compute VMT/trip. The percentage of pass-by and diverted trips in CalEEMod were set to 0 since the average modeled trip length was used. Land use type and size, trip generation and daily vehicle miles traveled were reported in Table 6. These are assumed to reflect weekday conditions.

Energy

Silicon Valley Power (SVP) provides electricity to the City of Santa Clara. CalEEMod defaults for energy use for SVP were used for all Existing uses, which include the 2019[8] Title 24 Building Standards. For the new Project residential uses, an emission factor of 0 pounds of CO_2 per megawatt of electricity produced was entered into CalEEMod based on SVP's 2023 power content label[9] for new residential uses, since all residential customers would have zero-percent carbon electricity.

The Existing CalEEMod scenarios included natural gas for both residential and commercial uses. The Project CalEEMod scenarios included natural gas for commercial uses, but all new residential uses would not include any natural gas infrastructure. Therefore, natural gas use for new Project residential land uses was set to zero and reassigned to electricity use in CalEEMod.

Wood-Burning Devices

CalEEMod default inputs assume new residential construction would include wood-burning fireplaces and stoves. For the Existing uses, the CalEEMod defaults were kept. However, the new Project residential uses would not include wood-burning devices, as these devices are prohibited

[7] Correspondence with Fehr & Peers, October 2024.
[8] The 2022 Title 2024 standards have not been incorporated into the current CalEEMod model, which uses Title 24 standards from 2019 (CalEEMod User Guide). The 2019 standards, and therefore the energy analysis, are more conservative.
[9] Silicon Valley Power, Power Content Label, October 29, 2024. Web: https://www.siliconvalleypower.com/svp-and-community/about-svp/power-content-label

by BAAQMD Regulation 6, Rule 3.[10] Therefore, the number of woodstoves and fireplaces for new Project residential uses in CalEEMod were set to zero.

Other Inputs

Default model assumptions for emissions associated with solid waste generation were used. Wastewater treatment was changed to 100-percent aerobic conditions to represent the use of city services (i.e., the project would not send wastewater to septic tanks or facultative lagoons).

Summary of Operational Period Emissions

Table 8 reports the predicted emissions from complete build out of the ECR Specific Plan area in terms of annual emissions in tons and average daily operational emissions, assuming 365 days of operation per year. Net emissions between the proposed ECR Specific Plan area and existing uses are also shown. There are no emission thresholds that apply to potential emissions generated by a plan, such as the ECR Specific Plan. As shown in Table 8, annual and average daily emissions of ROG associated with operation of the Plan Area would exceed the BAAQMD significance thresholds that is applied to projects.

The City's Climate Action Plan requires that the new projects implement VMT reductions through TDM measures, depending on the General Plan land use designation, project type and transportation district the project is located. *Attachment 1* to this report includes the operational assumptions, CalEEMod model output files, and emissions calculations for the proposed ERC Specific Plan.

Table 8. ECR Specific Plan Operational Period Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
Existing Annual Emissions in 2024 (tons)[1]	*29.91*	*8.85*	*15.62*	*4.15*
Future Existing Annual Emissions (tons/year)	28.51	6.50	15.59	4.12
Plan (Existing + Project) Annual Emissions (tons/year)	51.70	7.60	14.86	3.94
Total Net Plan Operational Emissions (tons/year)	**23.19**	1.10	-0.73	-0.18
BAAQMD Project Thresholds (tons per year)	***10 tons***	***10 tons***	***15 tons***	***10 tons***
Average Daily Net Project Operational Emissions (pounds per day)[2]	**127.04**	6.03	-4.01	-1.01
BAAQMD Thresholds (pounds per day)	***54 lbs./day***	***54 lbs./day***	***82 lbs./day***	***54 lbs./day***

[1] Listed for informational purposes. [2] Assumes 365-day operation.

Carbon Monoxide

Carbon monoxide (CO) is a pollutant that affects air quality locally. Monitoring data from all ambient air quality monitoring stations in the Bay Area indicate that existing carbon monoxide levels are currently below national and California ambient air quality standards. Monitored CO

[10] Bay Area Air Quality Management District, https://www.baaqmd.gov/~/media/dotgov/files/rules/regulation-6-rule-3/documents/20191120_r0603_final-pdf.pdf?la=en

levels have decreased substantially since 1990 as newer vehicles with greatly improved exhaust emission control systems have replaced older vehicles. The Bay Area has been designated as an attainment area for the CO standards. The highest measured levels in the Bay Area during the past three years are 3.0 ppm or less for eight-hour averaging periods, compared with state and federal criteria of 9.0 ppm.

Even though current CO levels in the Bay Area are well below ambient air quality standards, and there have been no exceedances of CO standards in the Bay Area since 1991, elevated levels of CO still warrant analysis. CO hotspots (occurrences of localized high CO concentrations) could still occur near busy congested intersections. Recognizing the relatively low CO concentrations experienced in the Bay Area, the BAAQMD's CEQA Air Quality Guidelines state that a project would have a less-than-significant impact if it would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour. Peak hour traffic volumes at intersections affected by implementation of the ECR Specific Plan area would be less than 15,000 vehicle trips per hour. Therefore, this impact would be less-than-significant.

Mitigation Measure AQ-2: Require Project-Level Operational Assessment for Projects in the ECR Specific Plan.

Operational criteria pollutant analysis shall be conducted in accordance with the latest guidance provided by BAAQMD for projects with a potential to exceed project emission thresholds. The BAAQMD CEQA Air Quality Guidelines provide project screening criteria and level sizes to determine if projects warrant modeling to evaluate their emissions. Projects that meet the screening criteria and are smaller than the screening sizes listed in Table 4-1, pages 4-3 and 4-4, of the BAAQMD CEQA Air Quality Guidelines would be considered to have less-than-significant operational air pollutant emissions. Projects that are found to have emissions above significant thresholds would be required to implement additional mitigation, including but not limited to:

- Proposed residential development within the ECR Specific Plan shall implement TDM programs to reduce residential VMT as required by the City's Climate Action Plan. The TDM programs would be reviewed and approved by the Community Development Director prior to issuance of building permits. An annual TDM monitoring report shall be submitted to the Community Development Director to document each development is meeting the required TDM program reductions.

- Proposed development within the ECR Specific Plan shall incorporate additional green building measures such as rooftop solar photovoltaic (PV) systems, rough-ins for electric vehicle charging, use of efficient lighting and irrigation, and recycled water, as feasible, to the satisfaction of the Community Development Director.

- Developed parcels shall require within their CC&Rs and/or ground leases requirements for all future interior spaces to be repainted only with architectural coatings that meet the "Low-VOC" or "Super-Compliant" requirements.

Impact AIR-3: Expose sensitive receptors to substantial pollutant concentrations?

Impacts related to increased health risk can occur either by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the Plan Area vicinity or by significantly exacerbating existing cumulative TAC impacts. The build-out of the ECR Specific Plan would introduce a new temporary source of TACs during construction (i.e., on-site construction and truck hauling emissions) and long-term sources of TACs during operation (i.e., mobile and stationary sources).

There are sensitive receptors within 1,000 feet of the ECR Specific Plan. Plan Area construction activity would generate dust and equipment exhaust that would affect nearby sensitive receptors. Traffic generated by the ECR Specific Plan would consist of mostly light-duty gasoline-powered vehicles and the ECR Specific Plan may introduce new stationary sources such as emergency diesel-powered generators, which would produce TAC and air pollutant emissions in the area.

ECR Specific Plan impacts to existing sensitive receptors were addressed for temporary construction activities and long-term operational conditions. There are also several sources of existing TACs and localized air pollutants in the vicinity of the project. The impact of the existing sources of TAC was also assessed in terms of describing the cumulative risk which includes the project contribution, as well as the risk on the new sensitive receptors introduced by the ECR Specific Plan.

ECR Specific Plan Construction TAC Exposure

Subsequent land use activities associated with implementation of the ECR Specific Plan could include short-term construction sources of TACs. There are sensitive receptors adjacent to many portions of the Plan Area and there will be future residents in the ECR Specific Plan development areas that could potentially be exposed to construction TACs during construction activity.

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. The construction exhaust emissions may pose health risks for sensitive receptors such as nearby residents. The primary health risk impact issues associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A health risk assessment of the project construction activities would have to be conducted at a project level to address these impacts. Since specific construction plans and schedules for construction are not known, it is not possible to quantify the impacts and determine the significance. There are various measures that can be incorporated into construction plans that could minimize these potential impacts.

Because residential development in the Plan Area would be developed over time, there could be on-site residences (new sensitive receptors) occupied while construction would be occurring in other areas of the Plan Area. Health risks impacts to nearby off-site and future on-site sensitive receptors associated with temporary construction of the future development is considered *potentially significant*. *Implementation of Santa Clara General Plan Policy 5.10.2-P6 and Mitigation Measure AQ-1 would reduce this impact to less-than-significant.*

Effectiveness of Santa Clara General Plan Policy 5.10.2-P6 and Mitigation Measure AQ-1

Implementation of *Santa Clara General Plan Policy 5.10.2-P6* would reduce construction fugitive dust emissions. Implementation of measures identified in *Mitigation Measure AQ-1* through future project-specific assessments would further reduce on-site diesel exhaust emissions. The selection of appropriate equipment could reduce emissions substantially. For example, the use of diesel-powered construction equipment that meets U.S. EPA particulate matter emissions standards for Tier 4 engines or included DPM filters certified by CARB can significantly reduce DPM emissions. That measure alone would likely reduce construction health risk impacts to a less-than-significant level. Other measures identified in Mitigation Measure AQ-1 would further reduce impacts. Additional measures to reduce TAC and $PM_{2.5}$ emissions would include hourly limits for generator or crane use, electrification or use of alternative fuels for portable equipment, appropriate staging of equipment, and additional limitations on equipment idling. The application of appropriate measures would reduce maximum cancer risk, annual $PM_{2.5}$ concentrations, and HI to below respective threshold levels. Therefore, *after implementation of these recommended measures, the project would have a less-than-significant impact with respect to health risk caused by construction activities.*

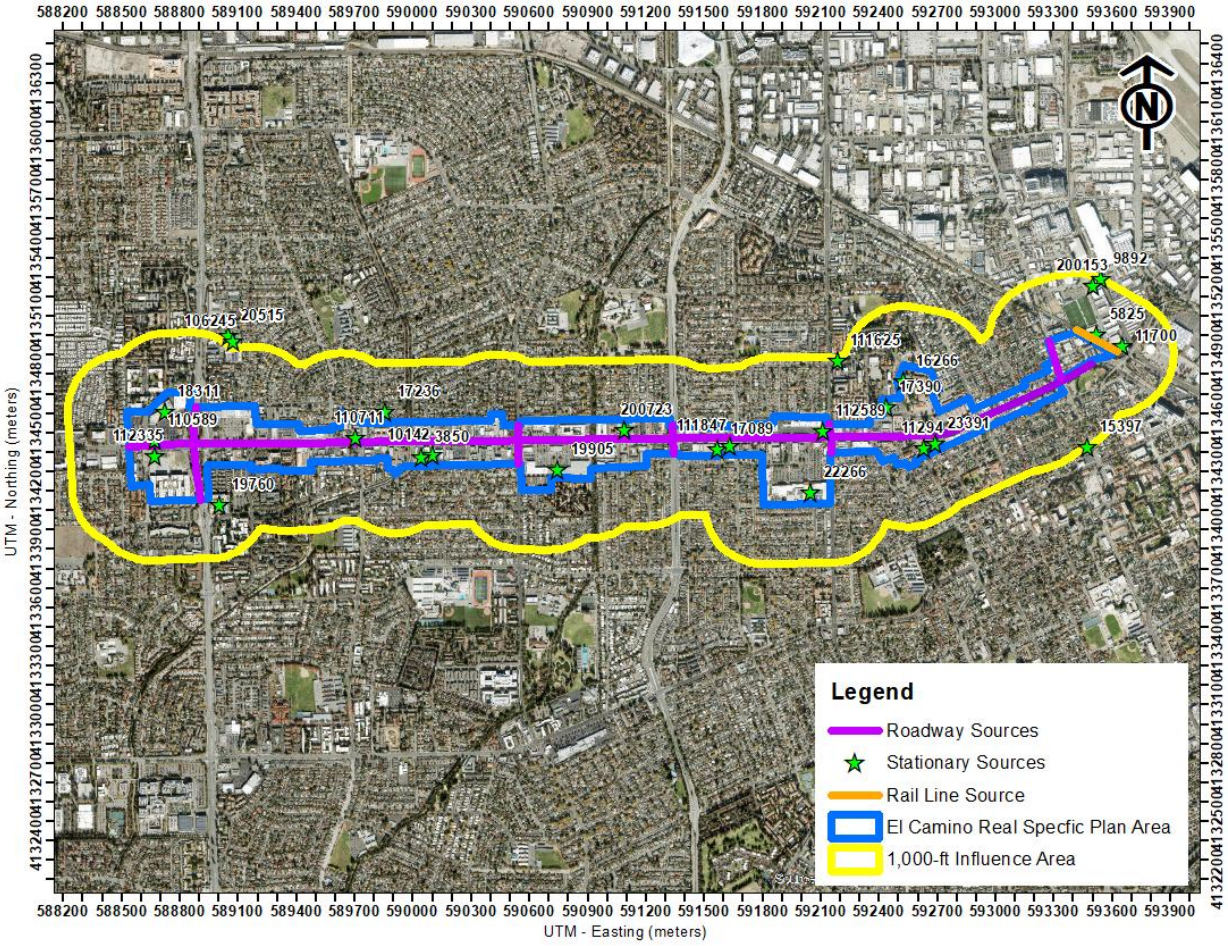
ECR Specific Plan Operation TAC Exposure

Traffic volumes would decrease with the implementation of the ECR Specific Plan, and therefore, traffic related TAC emissions would also decrease. Sources of TACs or $PM_{2.5}$ emissions associated with the Plan Area have not been identified. The types of land uses envisioned under the ECR Specific Plan are not anticipated to include sources such that significant exposures could occur. These uses may include diesel-powered emergency generator that would require permitting by BAAQMD. These types of sources of air pollution that operate within accordance of BAAQMD rules and regulations would not cause significant exposure for on- or off-site sensitive receptors. This would be a *less-than-significant impact*.

TAC Effects on ECR Specific Plan Sensitive Receptors

The project would include new sensitive receptors, primarily in the form of residents. Substantial sources of existing air pollution can adversely affect sensitive receptors proposed as part of new projects. BAAQMD recommends using a 1,000-foot screening radius around a project site for purposes of identifying health risk impacts from citing a new source of TACs or new sensitive receptors. A review of the Plan Area using BAAQMD's geographic information systems (GIS) screening maps identified the existing health risks from nearby TAC sources. These include 28 nearby stationary sources (diesel-power generators, generic sources, and gas stations), traffic on local roadways (El Camino Real, Lawrence Expressway, Kiely Boulevard/Bowers Avenue, San Thomas Expressway, Scott Boulevard, and Lafayette Street), and diesel-powered locomotives on the rail line along the eastern boundary of the Plan Area. shows the existing TAC sources, the ECR Specific Plan area, and the 1,000-foot influence area. Details of the screening and health risk calculations are included in *Attachment 2*.

Figure 2. ECR Specific Plan and 1,000-foot Influence Area (see Table 10 for Source Buffer Distances)



Nearby High-Volume Roadways

A refined analysis of potential health impacts from vehicle traffic on high-volumes roadways within the ECR Specific Plan area was conducted since these roadways, including El Camino Real, Lawrence Expressway, Kiely Boulevard/Bowers Avenue, San Thomas Expressway, Scott Boulevard, and Lafayette Street, were identified by the screening tools to have potentially high TAC impact levels. The refined analysis involved prediction of emissions for the traffic volume and mix of vehicle types on the roadway near the project site and using an atmospheric dispersion model to predict exposure to TACs. The associated cancer risks are then computed based on the modeled exposures.

Emissions Modeling

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on these high-volume roadways within the ECR Specific Plan area using the Caltrans version of the CARB EMFAC2021 emissions model, known as CT-EMFAC2021. CT-EMFAC2021 provides emission factors for mobile source criteria pollutants and TACs, including DPM.

Emission processes modeled include running exhaust for DPM, $PM_{2.5}$ and total organic compounds (TOG), running evaporative losses for TOG, and tire and brake wear and fugitive road dust for $PM_{2.5}$. All $PM_{2.5}$ emissions from all vehicles were used, rather than just the $PM_{2.5}$ fraction from diesel powered vehicles, because all vehicle types (i.e., gasoline and diesel powered) produce $PM_{2.5}$. Additionally, $PM_{2.5}$ emissions from vehicle tire and brake wear from re-entrained roadway dust were included in these emissions. DPM emissions are projected to decrease in the future and are reflected in the CT-EMFAC2021 emissions data. Inputs to the model include region (Santa Clara County), type of road (major/collector), traffic mix assigned by CT-EMFAC2021 for the county, truck percentage for non-state highways in Santa Clara County (3.51 percent),[11] year of analysis (2040 cumulative conditions), and season (annual).

To estimate TAC and $PM_{2.5}$ emissions over the 30-year exposure period used for calculating the increased cancer risks, the CT-EMFAC2021 model was used to develop vehicle emission factors for the year 2040 (cumulative conditions).

The average daily traffic (ADT) for the high-volume roadways with the Plan Area were calculated and rounded up based on cumulative (2040) plus project traffic data the Specific Plan's traffic analyses.[12,13] Average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,[14] which were then applied to the ADT volumes to obtain estimated hourly traffic volumes and emissions for the roadway. Average speeds for all hours of the day for each roadway were determined and were assumed for all vehicles based on the posted speed limit signs. Table 9 shows the modeling data used for each high-volume roadway within the Plan Area.

Table 9. ECR Specific Plan Roadway Modeling Data

Roadway Segment	ADT (vehicles)	Speed (mph)
El Camino Real (Western Boundary of Plan Area to San Tomas Expressway)	35,000	35
El Camino Real (San Tomas Expressway to Lincoln Street)	25,000	35
El Camino Real (Lincoln Street to Alviso Street)	25,000	40
Lawrence Expressway	64,000	50
Kiely Boulevard/Bowers Avenue	19,000	35
San Thomas Expressway	71,000	45
Scott Boulevard	20,000	35
Lafayette Street	25,000	30

Hourly emissions rates were developed for DPM, organic TACs, and $PM_{2.5}$ along the applicable segments of each roadway within the Specific Plan area. AERMOD was used to estimate the TAC and $PM_{2.5}$ concentrations around these roadways. Maximum increased lifetime cancer risks and maximum annual $PM_{2.5}$ concentrations were then computed using modeled TAC and $PM_{2.5}$ concentrations and BAAQMD methods and exposure parameters.

[11] Bay Area Air Quality Management District, 2023, Appendix E of the *BAAQMD CEQA Guidance.* April.
[12] Fehr & Peers, *El Camino Real Specific Plan Draft Transportation Impact Analysis*, November 2019.
[13] Fehr & Peers, *El Camino Real Specific Plan Final Supplemental Transportation Impact Analysis*, December 2024.
[14] The Burden output from EMFAC2007, a previous version of CARB's EMFAC model, was used for this since the current web-based version of EMFAC2021 does not include Burden type output with hour-by-hour traffic volume information.

Dispersion Modeling

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the AERMOD dispersion model, which is recommended by the BAAQMD for this type of analysis.[15] TAC and $PM_{2.5}$ emissions from traffic on the high-volume roadways within the ECR Specific Plan area were evaluated. Emissions from vehicle traffic travel on the roadways were modeled in AERMOD using a series of area sources along a line (line area sources), with line segments used for travel on the roadways in both opposing directions. The modeling used a five-year data set (2013 - 2017) of hourly meteorological data from the San Jose International Airport was used with the AERMOD model. Other inputs to the model included road geometry, hourly traffic emissions, and receptor locations and heights. Annual TAC and $PM_{2.5}$ concentrations using 2040 emissions from traffic on the roadways were calculated using the model.

Concentrations were calculated at the receptor heights of 5 feet (1.5 meters) which were used to represent the breathing heights on the first floors of potential receptor locations. A grid of receptors were placed 25 feet (7.6 meters), 50 feet (15.2 meters), 100 feet (30.5 meters), and 200 feet (61.0 meters) from the edge and on both side of each roadway and spaced approximately every 175 feet (53.3 meters), 250 feet (76.2 meters), 350 feet (106.7 meters), 500 feet (152.4meters), 750 feet (228.6 meters), or 1,000 feet (304.8 meters).

Computed Cancer and Non-Cancer Health Impacts

Cancer risk, $PM_{2.5}$ concentration, and HI impacts from each of the high-volume roadways within the Plan Area were calculated. Table 10 shows the distances at which receptors should be located away from the high-volume roadways in order to have health risk impact below the BAAQMD single-source thresholds. Details of the emission calculations, dispersion modeling, and cancer risk calculations for the high-volume roadways within the Plan Area are provided in *Attachment 2.*

BAAQMD Permitted Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2022* GIS website,[16] which identifies the location of nearby stationary sources and their estimated risk and hazard impacts, including emissions and adjustments based on OEHHA guidance. Of the 28 stationary sources identified within the Plan Area, only Plants #110589, #110711, and #15397 had risk impacts exceeding BAAQMD thresholds without distance adjustments. Sensitive receptors should be located at least 100 feet away from these three sources in order to have health risk impacts below the significance thresholds, as shown in Table 10. shows the stationary sources within the Plan Area and the stationary sources' risk impacts are in *Attachment 2*.

[15] BAAQMD. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May 2012
[16] BAAQMD, https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3

Railroad Health Risk Impacts

The ECR Specific Plan site is located near the rail line used for Caltrain and a Union Pacific Railroad line used for Amtrak passenger and freight rail service. The eastern portion of the Plan Area is located near these rail lines. Trains traveling on these lines generate TAC and $PM_{2.5}$ emissions from diesel locomotives. Due to the proximity of the rail line to the Plan Area, potential health risks to future Plan Area residents from DPM and $PM_{2.5}$ emissions from diesel locomotive engines were evaluated.

Cancer risk, $PM_{2.5}$ concentrations, and HI associated with trains on the nearby railways were estimated using BAAQMD screening values provided via GIS data files (i.e., raster files).[17] BAAQMD raster files provide screening-level cancer risk, $PM_{2.5}$ concentrations, and HI for railways within the Bay Area and were produced using AERMOD and 20x20-meter emissions grid. The raster file uses 2021 train schedules and 2020 fuel consumption rates for rail activities, and includes Appendix E of the Air District's CEQA Air Quality Guidance for risk assessment assumptions. These estimates represent conservative risks reflective of 2022 conditions and are meant to provide a conservative estimate of future conditions. The estimates do not reflect the planned electrification of Caltrain beginning in fall of 2024.[18] These screening values are considered higher than values that would be obtained with refined modeling methods. The raster data are based on region-wide emissions rather than just those that occur within 1,000 feet of the Plan Area. More information regarding the assumptions used to develop the screening layers can be found in Sections 6 and 7 in Appendix E of BAAQMD's 2022 CEQA guidance.[19] The railway screening risk impacts are in *Attachment 2*.

The Peninsula Corridor Electrification Project is a key component of the Caltrain Modernization Program that would electrify the Caltrain Corridor from San Francisco to San Jose. Caltrain plans are that initial service between San José and San Francisco would use a mixed fleet of electric and diesel locomotives, with approximately 75 percent of the service being electric and 25 percent being diesel. After the initial implementation period, diesel locomotives would be replaced with electric trains over time as they reach the end of their service life. Caltrain's diesel-powered locomotives would continue to be used to provide service between the San José Diridon Station and Gilroy. It is expected that all of the San José to San Francisco fleet would be electric trains about five to eight years after initial electric service begins.[20]

When considering the health risk impacts from diesel locomotive freight trains, the reduction in risk due to electrification of the Caltrain line would be approximately 72 percent. When applying this reduction to the BAAQMD railway screening risk data, potentially significant health risk impacts (mainly for cancer risk) would extend out approximately 500 feet from the rail line, i.e., exceed BAAQMD single-source thresholds, as shown in Table 10.

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[17] BAAQMD, *Health Risk Screening and Modeling*, 2022. Web: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools/health-risk-screening-and-modeling

[18] Caltrain Electrified Service Plan. URL: https://www.caltrain.com/projects/electrification/project-benefits/caltrain-electrified-service-plan

[19] BAAQMD, 2022. BAAQMD CEQA Air Quality Guidelines Appendix E. April 2023. https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?la=en

[20] Caltrain 2015. *Short Range Transit Plan:FY2015-2024*. October 1, 2015.

Table 10. Distances to Threshold from Existing TAC Sources

Roadway Segment	Distance to Threshold
El Camino Real (Western Boundary of Plan Area to San Tomas Expressway)	100 ft north 200 ft south
El Camino Real (San Tomas Expressway to Lincoln Street)	50 ft north 50 ft south
El Camino Real (Lincoln Street to Alviso Street)	50 ft north 50 ft south
Lawrence Expressway	300 ft east 100 ft west
Kiely Boulevard/Bowers Avenue	50 ft east 50 ft west
San Thomas Expressway	300 ft east 100 ft west
Scott Boulevard	50 ft east 50 ft west
Lafayette Street	100 ft east 50 ft west
Mobil (Facility ID #110589, Gas Dispensing Facility, 3725 El Camino Real)	100 ft
El Camino Valero (Facility ID #110711, Gas Dispensing Facility, 3305 El Camino Real)	100 ft
Santa Clara University (Facility ID #15397, Generic Source, 500 El Camino Real)	100 ft
Railway	500 ft

Summary of Existing TAC Health Risks

identifies the existing TAC sources within the Plan Area. Any development of sensitive receptors within affected areas identified in the sections above would potentially expose sensitive receptors to significant exposure of cancer risk and/or $PM_{2.5}$ concentrations. This would be a *potentially significant impact.*

Mitigation Measure AQ-3: Projects developed within the ECR Specific Plan that are affected by air pollutant or TAC sources shall implement appropriate measures to minimize long-term toxic air contaminant (TAC) and annual $PM_{2.5}$ exposure for new project occupants:

This mitigation measure applies to any project developed within affected areas that are near high volume roadways, stationary sources, or Caltrain, as indicated in . Either include measures to reduce long-term exposure to TAC and $PM_{2.5}$, as described below, or conduct site-specific analysis to identify the level of exposure to TACs in terms of cancer risk and annual $PM_{2.5}$ concentrations. The analysis shall use procedures prescribed by BAAQMD (e.g., the BAAQMD CEQA Air Quality Guidelines) to predict these exposures. Where cancer risk exceeds 10 chances per million from any single source or 100 chances per million for cumulative sources (i.e., within 1,000 feet), where annual $PM_{2.5}$ concentrations exceed 0.3 $\mu g/m^3$ from any single source or 0.8 $\mu g/m^3$ for cumulative sources, and where HI exceed 1.0 from any single source or 10.0 for cumulative sources, the following measures shall be implemented:

a. Design project developments to limit exposure from sources of TACs and fine particulate matter ($PM_{2.5}$) emissions.
b. Install air filtration at units that have predicted $PM_{2.5}$ concentrations above 0.3 $\mu g/m^3$. Air filtration devices shall be rated MERV13 or higher. Alternately, at the approval of the City, equivalent control technology may be used if it is shown by a qualified air quality consultant or heating, ventilation, and air conditioning (HVAC) engineer that it would reduce risk below significance thresholds.
c. As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system shall be required.
d. Ensure that any lease agreements and other property documents (1) require cleaning, maintenance, and monitoring of the affected units for air flow leaks; (2) include assurance that new owners and tenants are provided information on the ventilation system; and (3) include provisions that fees associated with owning or leasing a unit(s) in the building include funds for cleaning, maintenance, monitoring, and replacements of the filters, as needed.
e. Require that, prior to building occupancy, an authorized air pollutant consultant or HVAC engineer verify the installation of all necessary measures to reduce cancer risk below 10 chances per million from any source and $PM_{2.5}$ concentrations below 0.3 $\mu g/m^3$.

Effectiveness of Mitigation Measure AQ-3

The BAAQMD CEQA Air Quality Guidelines and BAAQMD's Planning Healthy Places recommend that developments in areas affected by air pollutant sources install and maintain air filtration systems of fresh air supply. These systems should be installed on either an individual unit-by-unit basis, with individual air intake and exhaust ducts ventilating each unit separately, or through a centralized building ventilation system. The ventilation system should be certified to achieve certain effectiveness.

The air filtration recommendations identified for Mitigation Measure AQ-3, filtration system using MERV13, was evaluated for effectiveness. Increased cancer risks for each of the filtration cases were calculated assuming a combination of outdoor and indoor exposure. This includes 3 hours of outdoor exposure to ambient DPM concentrations and 21 hours of indoor exposure to filtered air was assumed. In this case, the effective particulate control efficiency using a MERV13 filtration system is about 85 percent and 70 percent when accounting for 3 hours of non-filtered air.

Assuming the effectiveness of filtration systems described above, implementation of Mitigation Measure AQ-3 would reduce maximum cancer risk, annual $PM_{2.5}$ concentrations, and HI to below respective threshold levels. Therefore, with implementation of Mitigation Measure AQ-3, this impact would be reduced to a *less-than-significant* level.

Impact AIR-4: Create objectionable odors affecting a substantial number of people?

The project would generate localized emissions of diesel exhaust during construction equipment operation and truck activity. These emissions may be noticeable from time to time by adjacent receptors. However, they would be localized and are not likely to adversely affect people off site by resulting in confirmed odor complaints. The ECR Specific Plan does not identify any uses that are typical sources of odors that could lead to objectionable odors that generate frequent odor complaints.

Odor impacts could occur if residents associated with the project experienced objectionable odors and made complaints. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, there are no quantitative methodologies to determine the presence of a significant odor impact. The significance of odor impacts is based on the potential to cause odor complaints.

BAAQMD publishes screening buffer distances for odor sources and sensitive receptors in their CEQA Air Quality Guidelines. There are no identified major sources of odors. Uses in the plan area may include restaurants or auto repair shops that could have localized odors but not likely to result in frequent odor complaints.

GREENHOUSE GAS EMISSIONS

Regulatory Framework

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO_2, CH_4, and N_2O are byproducts of fossil fuel combustion.
- N_2O is associated with agricultural operations such as fertilization of crops.
- CH_4 is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO_2 being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of CO_2 equivalents (CO_2e).

An expanding body of scientific research supports the theory that global climate change is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California are adversely affected by the global warming trend. Increased precipitation and sea level rise will increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes, and drought; and increased levels of air pollution.

Federal and Statewide GHG Emissions

The U.S. EPA reported that in 2022, total gross nationwide GHG emissions were 6,343 million metric tons (MMT) carbon dioxide equivalent (CO_2e).[21] These emissions were 17 percent lower than 2005 levels, but 1 percent higher than 2021.

CARB updates the statewide GHG emission inventory on an annual basis where the latest inventory includes 2000 through 2022 emissions.[22] In 2022, GHG emissions from statewide emitting activities were 371.1 MMT CO_2e, 2.4 percent lower than 2021. Since peak levels in 2004, California's GHG emissions have generally followed a decreasing trend. In 2014, statewide GHG emissions dropped below the 2020 GHG Limit and have remained below the Limit since that time.

State Regulatory Actions for GHG Emissions

Executive Order S-3-05 – California GHG Reduction Targets

Executive Order (EO) S-3-05 was signed by Governor Arnold Schwarzenegger in 2005 to set GHG emission reduction targets for California. The three targets established by this EO are as follows: (1) reduce California's GHG emissions to 2000 levels by 2010, (2) reduce California's GHG emissions to 1990 levels by 2020, and (3) reduce California's GHG emissions by 80 percent below 1990 levels by 2050.

Assembly Bill 32 – California Global Warming Solutions Act (2006)

Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, codified the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, CEC, California Public Utilities Commission (CPUC), and Building Standards Commission have all been developing regulations that will help meet the goals

[21] United States Environmental Protection Agency, 2024. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2022*. April 11. Web: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks

[22] CARB. 2024. *California Greenhouse Gas Emission for 2000 to 2022*. Web: https://ww2.arb.ca.gov/ghg-inventory-data

of AB 32 and Executive Order S-3-05, which has a target of reducing GHG emissions 85 percent below 1990 levels.

The first Scoping Plan for AB 32 was adopted by CARB in December 2008. Its most recent update was completed in December of 2022[23]. It contains the State's main strategies to achieve carbon neutrality by 2045. This plan extends and expands upon the earlier versions with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. It also takes the step of adding carbon neutrality as a science-based guide and touchstone for California's climate work. Measures to achieve carbon neutrality include rapidly moving to zero emission vehicles (ZEV), removing natural gas as an option for space conditioning, increasing the number of solar arrays and wind turbines, and scaling up renewable hydrogen for hard-to-electrify end uses.

Senate Bill 375 – California's Regional Transportation and Land Use Planning Efforts (2008)

California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 provides incentives for local governments and applicants to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows applicants to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB works with the metropolitan planning organization (i.e., MTC) to align their regional transportation, housing, and land use plans to reduce VMT and demonstrate the region's ability to attain its GHG reduction targets.

Senate Bills 350 and 100 - Renewable Portfolio Standards

In September 2015, the California Legislature passed SB 350, which increased the states Renewables Portfolio Standard (RPS) for content of electrical generation from the 33 percent target for 2020 to a 50 percent renewables target by 2030.

In September 2018, SB 100 was signed by Governor Brown to revise California's RPS program goals, furthering California's focus on using renewable energy and carbon-free power sources for its energy needs. The bill requires all California utilities to supply a specific percentage of their retail sales from renewable resources by certain target years. By December 31, 2024, 44 percent of the retails sales would need to be from renewable energy sources, by December 31, 2026 the target would be 40 percent, by December 31, 2027 the target would be 52 percent, and by December 31, 2030 the target would be 60 percent. By December 31, 2045, all California utilities would be required to supply retail electricity that is 100 percent carbon-free and sourced from eligible renewable energy resources to all California end-use customers.

[23] CARB. 2022. Final 2022 Scoping Plan Update and Appendices. Web: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents

SB 743 Transportation Impacts

Senate Bill 743 required lead agencies to abandon the old "level of service" metric for evaluating a project's transportation impacts, which was based solely on the amount of delay experienced by motor vehicles. In response, the Governor's Office of Planning and Research (OPR) developed a VMT metric that considered other factors such as reducing GHG emissions and developing multimodal transportation.[24] A VMT-per-capita metric was adopted into the CEQA Guidelines Section 15064.3 in November 2017. Given current baseline per-capita VMT levels computed by CARB in the 2017 Scoping Plan of 22.24 miles per day for light-duty vehicles and 24.61 miles per day for all vehicle types, the reductions needed to achieve the 2050 climate goal are 16.8 percent for light-duty vehicles and 14.3 percent for all vehicle types combined. Based on this analysis (as well as other factors), OPR recommended using a 15-percent reduction in per capita VMT as an appropriate threshold of significance for evaluating transportation impacts.

Executive Order B-55-18 – Carbon Neutrality

In 2018, a new statewide goal was established to achieve carbon neutrality as soon as possible, but no later than 2045, and to maintain net negative emissions thereafter. CARB and other relevant state agencies are tasked with establishing sequestration targets and creating policies/programs that would meet this goal.

Executive Order B-30-15 & Senate Bill 32 GHG Reduction Targets – 2030 GHG Reduction Target

In April 2015, Governor Brown signed EO B-30-15, which extended the goals of AB 32, setting a GHG emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed Senate Bill (SB) 32, which legislatively established the GHG reduction target of 40 percent of 1990 levels by 2030. In November 2017, CARB issued *California's 2017 Climate Change Scoping Plan*.[25] While the State is on track to exceed the AB 32 scoping plan 2020 targets, this plan is an update to reflect the enacted SB 32 reduction target.

SB 32 was passed in 2016, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB has drafted a 2022 Scoping Plan Update to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32. The 2022 draft plan:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 or earlier.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.

[24] Governor's Office of Planning and Research. 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December.
[25] California Air Resource Board, 2017. *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Targets.* November. Web: https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf

- Integrates equity and protecting California's most impacted communities as a driving principle.
- Incorporates the contribution of natural and working lands to the state's GHG emissions, as well as its role in achieving carbon neutrality.
- Relies on the most up to date science, including the need to deploy all viable tools, including carbon capture and sequestration as well as direct air capture.
- Evaluates multiple options for achieving our GHG and carbon neutrality targets, as well as the public health benefits and economic impacts associated with each.

The Scoping Plan was updated in 2022 and lays out how the state can get to carbon neutrality by 2045 or earlier. It is the first Scoping Plan that adds carbon neutrality as a science-based guide and touchstone beyond statutorily established emission reduction targets.[26]

The mid-term 2030 target is considered critical by CARB on the path to obtaining an even deeper GHG emissions target of 80 percent below 1990 levels by 2050, as directed in Executive Order S-3-05. The 2022 Scoping Plan outlines the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure, providing a blueprint to continue driving down GHG emissions and to not only obtain the statewide goals, but cost-effectively achieve carbon-neutrality by 2045 or earlier. In the 2022 Scoping Plan, CARB recommends:

- VMT per capita reduced 12 percent below 2019 levels by 2030 and 22 percent below 2019 levels by 2045.
- 100 percent of Light-duty vehicle sales are zero emissions vehicles (ZEV) by 2035.
- 100 percent of medium duty/heavy duty vehicle sales are ZEV by 2040.
- 100 percent of passenger and other locomotive sales are ZEV by 2030.
- 100 percent of line haul locomotive sales are ZEV by 2035.
- All electric appliances in new residential and commercial building begin in 2026 (residential) and 2029 (commercial).
- 80 percent of residential appliance sales are electric by 2030 and 100 percent of residential appliance sales are electric by 2035.
- 80 percent of commercial appliance sales are electric by 2030 and 100 percent of commercial appliance sales are electric by 2045.

California Building Standards Code – Title 24 Part 11 & Part 6

The California Green Building Standards Code (CALGreen Code) is part of the California Building Standards Code under Title 24, Part 11.[27] The CALGreen Code encourages sustainable construction standards that involve planning/design, energy efficiency, water efficiency resource efficiency, and environmental quality. These green building standard codes are mandatory statewide and are applicable to residential and non-residential developments. The most recent CALGreen Code (2022 California Building Standard Code) was effective as of January 1, 2023.

[26] https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents

[27] See: https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen#:~:text=CALGreen%20is%20the%20first%2Din,to%201990%20levels%20by%202020.

The California Building Energy Efficiency Standards (California Energy Code) is under Title 24, Part 6 and is overseen by the CEC. This code includes design requirements to conserve energy in new residential and non-residential developments, while being cost effective for homeowners. However, the CEC does not mandate specific fuel types. This Energy Code is enforced and verified by cities during the planning and building permit process. The current energy efficiency standards (2022 Energy Code) replaced the 2019 Energy Code as of January 1, 2023. The 2022 Energy Code builds on California's technology innovations, encouraging inclusion of market-ready electric products in new construction, such as heat pumps for climate control and water heating. Under the 2022 standards, all new homes are required to be electric-ready. That means buildings with gas stoves have electrical panels and wiring to support a switch to electric stoves. This Energy code also strengthens ventilation standards to improve indoor air quality. This update provides crucial steps in the state's progress toward 100 percent clean carbon neutrality by midcentury.[28]

CEC studies have identified the most aggressive electrification scenario as putting the building sector on track to reach the carbon neutrality goal by 2045.[29] Installing new natural gas infrastructure in new buildings will interfere with this goal. To meet the State's goal, communities have been adopting "Reach" codes that prohibit natural gas connections in new and remodeled buildings.

Requirements for electric vehicle (EV) charging infrastructure are set forth in Title 24 of the California Code of Regulations and are regularly updated on a 3-year cycle. The CALGreen standards consist of a set of mandatory standards required for new development, as well as two more voluntary standards known as Tier 1 and Tier 2. The CALGreen 2022 standards require deployment of additional EV chargers in various building types, including multifamily residential and nonresidential land uses. They include requirements for both EV capable parking spaces and the installation of Level 2 EV supply equipment for multifamily residential and nonresidential buildings. The 2022 CALGreen standards include both mandatory requirements and more aggressive voluntary Tier 1 and Tier 2 provisions for both EV readiness and the actual installation of EV chargers. Providing EV charging infrastructure that meets current CALGreen requirements will not be sufficient to power the anticipated more extensive level of EV penetration in the future that is needed to meet SB 32 climate goals.

An update to the current CALGreen Energy Code will be effective on January 1, 2026, with the adoption of the 2025 Energy Code.[30] The 2025 standards were adopted at the September 11, 2024 CEC business meeting and will go to the California Building Standards Commission for approval as part of California's Building Standards Code before the end of 2024. It will apply to newly constructed buildings, additions, and alterations and focus on:

- Expanding the use of heat pumps for space conditioning and water heating in newly constructed single-family, multifamily, and select nonresidential buildings.
- Encouraging electric-ready buildings to set up owners to use cleaner electric water heating and cooking when they are ready to invest in those technologies.

[28] See: https://www.energy.ca.gov/sites/default/files/2021-08/CEC_2022_EnergyCodeUpdateSummary_ADA.pdf

[29] California Energy Commission. 2021. F*inal Commission Report: California Building Decarbonization Assessment. Publication Number CEC-400-2021-006-CMF*.August

[30] CEC 2025 California Energy Code Fact Sheet, September 2024. https://www.energy.ca.gov/sites/default/files/2024-09/2025_California_Energy_Code_Fact_Sheet_ada.pdf

- Updating photovoltaic and battery energy storage system standards for high-rise multifamily and nonresidential buildings to achieve cost effective installations in consideration of revised net billing and virtual net billing rules.
- Updating space conditioning system control standards for nonresidential buildings.
- Updating ventilation requirements in multifamily buildings to improve indoor air quality.

Advanced Clean Cars

The Advanced Clean Cars Program, originally adopted by CARB in 2012, was designed to bring together CARB's traditional passenger vehicle requirements to meet federal air quality standards and also support California's AB 32 goals to develop and implement programs to reduce GHG emissions back down to 1990 levels by 2020, a goal achieved in 2016 as a result of numerous emissions reduction programs.

Advanced Clean Cars II (ACC II) is phase two of the original rule. ACC II establishes a year-by-year process, starting in 2026, so all new cars and light trucks sold in California will be zero-emission vehicles by 2035. The regulation codifies the light-duty vehicle goals set out in Governor Newsom's Executive Order N-79-20. Currently, 16 percent of new light-duty vehicles sold in California are zero emissions or plug-in hybrids. By 2030, 68 percent of new vehicles sold in California would be zero emissions and 100 percent by 2035.

City of Santa Clara Climate Action Plan

On June 7, 2022, the City of Santa Clara adopted the 2022 Climate Action Plan (CAP).[31] It establishes revised goals and measures to reduce GHG emissions 40 percent by 2030, 80 percent by 2035, and achieve carbon neutrality by no later than 2045. The 2022 CAP aligns with all current State requirements and is assumed to be a qualified plan. A qualified CAP is one that requires future development projects that require environmental review under CEQA can streamline GHG impact analyses by demonstrating GHG reducing features are included as part of the design of the project. The CAP also includes a checklist, so that if a project aligns with the checklist items then it is in compliance with the City's CAP.

BAAQMD GHG Significance Thresholds

On April 20, 2022, BAAQMD adopted new thresholds of significance for operational GHG emissions from land use projects for projects and Plans beginning the CEQA process. The following framework is how BAAQMD will determine GHG significance moving forward.[32] Note BAAQMD intends that the thresholds apply to projects that begin the CEQA process after adoption of the thresholds, unless otherwise directed by the lead agency. The new thresholds of significance are:

[31] City of Santa Clara, 2022. *City of Santa Clara Climate Action Plan.* June. Web: https://www.santaclaraca.gov/our-city/departments-a-f/community-development/planning-division/general-plan/climate-action-plan

[32] Justification Report: BAAQMD CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Project and Plans. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en

Plan Level

1. Meet State's goals to reduce emissions to 40 percent below 1990 levels by 2030 and carbon neutrality by 2045; or:
2. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b)

Project Level

A. Projects must include, at a minimum, the following project design elements:
   a. Buildings
      i. The project will not include natural gas appliances or natural gas plumbing (in both residential and non-residential development).
      ii. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
   b. Transportation
      i. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
         1. Residential Projects: 15 percent below the existing VMT per capita
         2. Office Projects: 15 percent below the existing VMT per employee
         3. Retail Projects: no net increase in existing VMT
      ii. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

Any new Plan or land use project would have to include either section A or B from the above list, not both, to be considered in compliance with BAAQMD's GHG thresholds of significance.

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

GHG emissions associated with development of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal. Emissions for the proposed project are discussed below.

<u>CalEEMod Modeling</u>

CalEEMod was used to predict GHG emissions from operation of the site assuming full build-out of the project, as well as the existing use of the site. The project land use types and size and other

project-specific information were input to the model, as described above within the construction and operational period emissions. CalEEMod output is included in *Attachment 1*.

GHG Emissions

The CalEEMod model was used to estimate daily emissions associated with operation of the fully developed site under the proposed project. For informational purposes, the increase in annual GHG emissions resulting from operation of the Plan Area, shown in Table 11, are predicted to range from 408 to 2,875 MT of CO_2e.

Table 11. Annual ECR Specific Plan GHG Emissions (CO_2e) in Metric Tons

Source Category	Existing Uses in 2024	Existing Uses in 2030	ECR Specific Plan Build Out in 2030
Mobile	15.212	13,616	13,276
Area	192	192	243
Energy Consumption	3,668	3,226	2,989 – 3,864
Water Usage	261	236	246
Solid Waste Generation	1,320	1,320	2,239
Refrigeration	5	5	10
Total (MT CO_2e/year)	20,658	18,594	19,002
Net Increase (MT of CO_2e)			**408 – 2,875**

The primary sources of GHG emissions are from vehicle travel, energy consumption, and solid waste.

Redevelopment in the plan area would lead to a decrease in vehicle emissions due to the decrease in VMT. Additionally, the plan would be considered a Transit supportive project that is presumed to have a less-than-significant impact on VMT.

GHG emissions associated with energy consumption would increase. The level of this increase would depend on whether new projects are constructed all electric or include natural gas appliances. The CalEEMod modeling provided a range; however, the highest levels are unlikely as BAAQMD regulations will prohibit installation of new water and space heating systems that are natural gas-powered. These regulations will be phased in beginning 2027.

Solid waste generation is anticipated to increase due to the increased population supported by the Plan. CalEEMod emissions associated with solid waste are likely overestimated as various programs are designed to reduce solid waste and reduce emissions from solid waste transport and land fill. The CalEEMod model does not consider these future reductions in emissions.

To have less-than-significant GHG emissions, the ECR Specific Plan must meet State's goals to reduce emissions to 40 percent below 1990 levels by 2030 and carbon neutrality by 2045 (Threshold 1) or be consistent with a local GHG reduction strategy (Threshold 2). Projects within the Plan Area must be consistent with a local GHG reduction strategy (Threshold B) or meet the minimum project design elements recommended by BAAQMD (Threshold A). The City of Santa Clara has adopted a CAP that meets the State CEQA Guidelines Section 15183.5(b). Therefore,

the Specific Plan meets the plan level GHG thresholds and would be have a less-than-significant GHG impact. If projects within the Plan Area are in compliance with the City's CAP Development Checklist, then the project would be considered to have a less-than-significant impact on GHG emissions per BAAQMD GHG Threshold B.

However, U.S. Court of Appeals for the Ninth Circuit struck down Berkeley, California's natural gas ban via reach code in April 2023, and again in January 2024. The City, therefore, does not enforce portions of the reach codes requiring new development projects to be all electric powered. As a result, projects that are developed with natural gas infrastructure would be considered to have a *significant* impact with respect to GHG emissions.

BAAQMD has developed project level thresholds of significance for projects located in jurisdictions where a qualified Climate Action Plan or GHG reduction strategy is not adopted. These thresholds are intended to address the State's efforts to reduce GHG emissions and attain carbon neutrality. Impacts of the ECR Specific Plan under the BAAQMD project thresholds A (see above), are described as follows:

1. Avoid construction of new natural gas connections for the residential building,
    - Since the City does not enforce the reach code, projects that propose natural gas infrastructure would be considered to have a significant impact.
2. Avoid wasteful or inefficient use of electricity,
    - Project's constructed under the Plan would meet CALGreen Building Standards Code requirements that are considered to be energy efficient.
3. Include electric vehicle charging infrastructure that meets current Building Code CALGreen Tier 2 compliance.
    - Projects constructed under the Plan are that meet the City's CAP would include sufficient EV parking.
4. Reduce VMT per service population by 15 percent over regional average.
    - As described above, the Plan would reduce VMT and the traffic analysis found that the Plan would have a less-than-significant impact on VMT.

Since projects constructed under the ECR Specific Plan could be approved with natural gas infrastructure that emits GHG in conflict with the City's CAP and BAAQMD project-level thresholds, the impact would be considered *significant*.

Mitigation Measure GHG-1: Ensure all new development meet City CAP and BAAQMD project-level thresholds.

ECR Specific Plan projects shall meet the following measures:

- Conform with applicable reduction measures for new development in the most recent CAP, which are contained in the City's most recent CAP Compliance Checklist

- All new development projects within the ECR Specific Plan would be required to be all electric.

- Projects that include natural gas appliances would have to enter into an agreement with the City to reduce GHG emissions equivalent to those emitted by the Project's natural gas appliances. Applicants would have to provide evidence to the City demonstrating that these emissions were properly identified and offset, prior to receiving any approval for construction (e.g., building permit).

Effectiveness of Mitigation Measure GHG-1

With the implementation of ell electric infrastructure for new development, the Specific Plan and project within the Specific Plan would be consistent with GHG thresholds and the impact would be *less-than-significant*.

Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The proposed project would not conflict or otherwise interfere with the statewide GHG reduction measures identified in CARB's Scoping Plan. The project would comply with requirements of the Green Building Code. For example, proposed buildings would be constructed in conformance with CALGreen and the Title 24 Building Code, which requires high-efficiency water fixtures and water-efficient irrigation systems.

One purpose of the Qualified Greenhouse Gas Reduction Strategy is to streamline the decision-making process regarding a proposed project's impact on GHG emissions within the City. Thus, the project's consistency with relevant Climate Action Plan measures and actions has been used to evaluate the significance of this impact.

The following emissions reduction measures and actions shown in Table 12 are relevant to the proposed project, with the project's consistency evaluated below.

Table 12. City of Santa Clara Climate Action Plan Consistency

Applicable Climate Action Plan Measures	Consistency
Building and Energy	
Strategy B1: Shift to electric fuels in new and existing buildings to achieve net-zero carbon buildings. Strategy B2: Improve energy efficiency. Strategy B3: Maximize renewable energy generation and storage capacity.	Consistent The ECR Specific Plan would encourage the incorporation of photovoltaic solar panels. Developers would also be encouraged to incorporate solar power, to the degree feasible, and at minimum provide solar ready infrastructure. The ECR Specific Plan would encourage all electric infrastructure.

Applicable Climate Action Plan Measures	Consistency
Transportation and Land Use	
Strategy T1: Transition vehicles to electric alternatives. Strategy T2: Expand clean mobility options and use of non-SOV transportation modes. Strategy T3: Advance sustainable land use.	Consistent New development projects under the ECR Specific Plan would include measures to implement the TDM goals of the ECR Specific Plan, primarily through encouragement of walking, biking, and transit usage while reducing the need to drive for daily needs. The ECR Specific Plan implement EV charging requirements as specified in the adopted 2021 Reach Codes.
Material and Consumption	
Strategy M1: Increase waste diversion. Strategy M2: Reduce landfilled food waste. Strategy M3: Enhance sustainable production and consumption.	Consistent The ECR Specific Plan would include on-site recycling facilities, implement a construction waste management plan, and meet the waste diversion goals outlined in the California Integrated Waste Management Act and AB 935.
Natural Systems and Water Resources	
Strategy N1: Increase tree canopy cover. Strategy N2: Enhance ecosystem resilience. Strategy N3: Improve water supply and conservation.	Consistent The ECR Specific Plan would support General Plan Policy 5.10.4-P7, which requires the installation of native and low-water-consumption plant species when landscaping new development and public spaces to reduce water usage. The ECR Specific Plan would include measures to introduce and provide ample native landscaping, trees, and shrubs to the community along streets, sidewalks, communal areas, trails, and parks, and regularly maintain trees. New and redevelopment projects under the ECR Specific Plan would include measures to reduce stormwater runoff volume, rate, and pollutants, and direct all storm water runoff from hardscapes towards landscaped areas. ECR Specific Plan development would install and utilize recycled water irrigation and water saving technology, whenever possible. All buildings within the ECR Specific Plan would have dual water supply systems with reclaimed water serving toilet/urinal flushing in conformance with the City standards.

As indicated in Table, the ECR Specific Plan would include implementing policies and measures that are generally consistent with the City's Climate Action Plan.

The proposed project would not conflict or otherwise interfere with the statewide GHG reduction measures identified in CARB's Scoping Plan nor would the project conflict with SB 100 goals. Specifically, the proposed buildings would be constructed in conformance with CALGreen and the Title 24 Building Code, which requires high-efficiency water fixtures, water-efficient irrigation systems, and compliance with current energy efficiency standards.

SUPPORTING DOCUMENTATION

Attachment 1 includes the CalEEMod output for project operational criteria air pollutants. Also included are any modeling assumptions.

Attachment 2 includes the health risk calculations, modeling results, and screening impacts from sources affecting the proposed future Specific Plan receptors.

Attachment 1: CalEEMod Modeling and Assumptions

Operational Criteria Air Pollutants							
		Annual Emissions in Tons/Year					
Scenario	**Year**	**ROG**	**NOX**	**Total PM10**	**Total PM2.5**	**CO2e (MT)**	**Service Population GHG (MT/Persons)**
Existing	2024	29.91	8.85	15.62	4.15	20,658	5.54
Existing	2030	28.51	6.50	15.59	4.12	18,594	4.99
Existing with ECR Plan	2030	51.81	9.58	15.02	4.10	20,103	1.30
- Residential No Nat Gas/Hearths	2030	-0.12	-1.98	-0.16	-0.16	-2272	
- Retail Default SVP	2030					1171	
Total Existing with ECR Plan	2030	51.70	7.60	14.86	3.94	19002	
Net Change	*Tons/Year*	**23.19**	**1.10**	**-0.73**	**-0.18**	**408**	**0.03**
	Pounds/Day	**127.04**	**6.03**	**-4.01**	**-1.01**		

Category	**CO2e**		
	Existing 2024	**Existing 203**	**Existing + Project 2030**
Mobile	15,212	13,616	13,276
Area	192	192	243
Energy	3,668	3,226	2,989
Water	261	236	246
Waste	1,320	1,320	2,239
Refrigerants	5	5	10
TOTAL	20,658	18,594	19,002
Net GHG Emissions			**408**
Service Population	3,729		15,463
Service Population Emissions	**5.54**	**4.99**	**1.23**

Hi Alessandra,

We used the same existing units and existing non-residential square feet as the original table. Please see below the updated table.

Revised ECR Specific Plan Traffic and Population Projections

	Service Population	Daily Trips	Daily VMT	VMT/Capita	Dwelling Units	1,000-SF of Retail
Existing No Project	3,729	8,595	132,596	35.6	2,500	2,265
Existing with Project	15,463	19,473	125,329	8.1	6,892	1,976
Net Change	**11,734**	**10,878**	**(7,267)**	-	**4,392**	**(289)**
Cumulative No Project	4,496	10,466	125,045	27.8		
Cumulative with Project	16,230	19,230	191,114	11.8		
Net Change	**11,734**	**8,764**	**66,069**	-		

Thanks,

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60 South Market Street, Suite 700
San José, CA 95113

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ECR Specific Plan - VMT Adjustments based on CalEEMod and TIA

EXISTING

From CalEEMod

	VMT					Trips				
	Annual	*Avg Daily*	*Weekday*	*Saturday*	*Sunday*	Weekday	Saturday	Sunday	Weekly	% trips
Apartments	29,757,094	81,526	85,760	77,405	64,478	13,600	12,275	10,225	12,929	12%
Retail	250,372,342	685,952	749,145	710,606	345,330	100,385	95,221	46,274	91,917	88%
			834,905			113,985	107,496	56,499		
			CalEEMod	***mi/trip =***	***7.32***					

	CalEEMod Default trips			**Adjusted Trips**		
	Weekday	*Saturday*	*Sunday*	*Weekday*	*Saturday*	*Sunday*
Apartments	5.44	4.91	4.09	0.41	0.37	0.31
Retail	44.32	42.04	20.43	3.34	3.17	1.54
	CalEEMod Default VMT			**Adjusted Trip Length**		
	Res H-W	*Res H-S*	*Res H-O*	*Res H-W*	*Res H-S*	*Res H-O*
Apartments	9.03	4.25	4.96	19.02	8.94	10.44
	Non Res C-C	*Non Res C-W*	*Non Res C-NW*	*Non Res C-C*	*Non Res C-W*	*Non Res C-NW*
Retail	10.90	6.93	4.80	22.96	14.60	10.11

From Traffic

VMT			Trips	
132,596			8,595	CalEEMod= 113,985
Traffic	***mi/trip =***	***15.43***		
Adjustment to Trip Length =	210.6%		**Adjustment to Trips =**	8% of CalEEMod default

ECR Specific Plan - VMT Adjustments based on CalEEMod and TIA

PROJECT

From CalEEMod

	VMT					Trips				
	Annual	*Avg Daily*	*Weekday*	*Saturday*	*Sunday*	Weekday	Saturday	Sunday	Weekly	% trips
Apartments	82,034,356	224,752	236,424	213,390	177,752	37,492	33,840	28,188	35,641	31%
Retail	218,426,379	598,428	653,559	619,937	301,268	87,576	83,071	40,370	80,189	69%
			889,983			125,069	116,911	68,558		
			CalEEMod	***mi/trip =***	***7.12***					

	CalEEMod Default trips			**Adjusted Trips**		
	Weekday	*Saturday*	*Sunday*	*Weekday*	*Saturday*	*Sunday*
Apartments	5.44	4.91	4.09	0.85	0.76	0.64
Retail	44.32	42.04	20.43	6.90	6.55	3.18
	CalEEMod Default VMT			**Adjusted Trip Length**		
	Res H-W	*Res H-S*	*Res H-O*	*Res H-W*	*Res H-S*	*Res H-O*
Apartments	9.03	4.25	4.96	8.17	3.84	4.48
	Non Res C-C	*Non Res C-W*	*Non Res C-NW*	*Non Res C-C*	*Non Res C-W*	*Non Res C-NW*
Retail	10.90	6.93	4.80	9.86	6.27	4.34

From Traffic

VMT			Trips		
125,329			19,473	CalEEMod=	125,069
Traffic	***mi/trip =***	***6.44***			
Adjustment to Trip Length =	90.4%		**Adjustment to Trips =**	16%	of CalEEMod default

19-217 ECR Existing 2024 Residential Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	19-217 ECR Existing 2024 Residential
Operational Year	2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	32.8
Location	El Camino Real, Santa Clara, CA, USA
County	Santa Clara
City	Santa Clara
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1762
EDFZ	1
Electric Utility	Silicon Valley Power
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	2,500	Dwelling Unit	65.8	2,500,000	0.00	—	7,475	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	81.9	35.6	198	2.59	9.60	12.2	2.56	2.43	5.00	53,576
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	68.8	34.8	52.1	2.51	9.60	12.1	2.51	2.43	4.94	52,508
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	73.5	11.0	109	0.60	8.94	9.54	0.59	2.27	2.85	21,717
Annual (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	13.4	2.00	19.9	0.11	1.63	1.74	0.11	0.41	0.52	3,595

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	4.06	3.91	43.9	0.07	9.60	9.67	0.06	2.43	2.50	10,879
Area	77.6	26.1	152	2.07	—	2.07	2.05	—	2.05	31,733
Energy	0.33	5.56	2.36	0.45	—	0.45	0.45	—	0.45	7,121
Water	—	—	—	—	—	—	—	—	—	340

Waste	—	—	—	—	—	—	—	—	—	3,486
Refrig.	—	—	—	—	—	—	—	—	—	17.9
Total	81.9	35.6	198	2.59	9.60	12.2	2.56	2.43	5.00	53,576
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	3.88	4.60	39.2	0.07	9.60	9.67	0.06	2.43	2.50	10,191
Area	64.6	24.7	10.5	1.99	—	1.99	1.99	—	1.99	31,353
Energy	0.33	5.56	2.36	0.45	—	0.45	0.45	—	0.45	7,121
Water	—	—	—	—	—	—	—	—	—	340
Waste	—	—	—	—	—	—	—	—	—	3,486
Refrig.	—	—	—	—	—	—	—	—	—	17.9
Total	68.8	34.8	52.1	2.51	9.60	12.1	2.51	2.43	4.94	52,508
Average Daily	—	—	—	—	—	—	—	—	—	—
Mobile	3.64	4.12	36.7	0.06	8.94	9.00	0.06	2.27	2.33	9,792
Area	69.6	1.30	69.9	0.09	—	0.09	0.08	—	0.08	961
Energy	0.33	5.56	2.36	0.45	—	0.45	0.45	—	0.45	7,121
Water	—	—	—	—	—	—	—	—	—	340
Waste	—	—	—	—	—	—	—	—	—	3,486
Refrig.	—	—	—	—	—	—	—	—	—	17.9
Total	73.5	11.0	109	0.60	8.94	9.54	0.59	2.27	2.85	21,717
Annual	—	—	—	—	—	—	—	—	—	—
Mobile	0.66	0.75	6.70	0.01	1.63	1.64	0.01	0.41	0.42	1,621
Area	12.7	0.24	12.8	0.02	—	0.02	0.01	—	0.01	159
Energy	0.06	1.01	0.43	0.08	—	0.08	0.08	—	0.08	1,179
Water	—	—	—	—	—	—	—	—	—	56.3
Waste	—	—	—	—	—	—	—	—	—	577
Refrig.	—	—	—	—	—	—	—	—	—	2.96
Total	13.4	2.00	19.9	0.11	1.63	1.74	0.11	0.41	0.52	3,595

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	4.06	3.91	43.9	0.07	9.60	9.67	0.06	2.43	2.50	10,879
Total	4.06	3.91	43.9	0.07	9.60	9.67	0.06	2.43	2.50	10,879
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	3.88	4.60	39.2	0.07	9.60	9.67	0.06	2.43	2.50	10,191
Total	3.88	4.60	39.2	0.07	9.60	9.67	0.06	2.43	2.50	10,191
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.66	0.75	6.70	0.01	1.63	1.64	0.01	0.41	0.42	1,621
Total	0.66	0.75	6.70	0.01	1.63	1.64	0.01	0.41	0.42	1,621

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	47.1

Total	—	—	—	—	—	—	—	—	—	47.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	47.1
Total	—	—	—	—	—	—	—	—	—	47.1
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	7.80
Total	—	—	—	—	—	—	—	—	—	7.80

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.33	5.56	2.36	0.45	—	0.45	0.45	—	0.45	7,074
Total	0.33	5.56	2.36	0.45	—	0.45	0.45	—	0.45	7,074
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.33	5.56	2.36	0.45	—	0.45	0.45	—	0.45	7,074
Total	0.33	5.56	2.36	0.45	—	0.45	0.45	—	0.45	7,074
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.06	1.01	0.43	0.08	—	0.08	0.08	—	0.08	1,171
Total	0.06	1.01	0.43	0.08	—	0.08	0.08	—	0.08	1,171

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Hearths	1.44	24.7	10.5	1.99	—	1.99	1.99	—	1.99	31,353
Consumer Products	53.5	—	—	—	—	—	—	—	—	—
Architectural Coatings	9.65	—	—	—	—	—	—	—	—	—
Landscape Equipment	13.0	1.41	141	0.07	—	0.07	0.06	—	0.06	381
Total	77.6	26.1	152	2.07	—	2.07	2.05	—	2.05	31,733
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Hearths	1.44	24.7	10.5	1.99	—	1.99	1.99	—	1.99	31,353
Consumer Products	53.5	—	—	—	—	—	—	—	—	—
Architectural Coatings	9.65	—	—	—	—	—	—	—	—	—
Total	64.6	24.7	10.5	1.99	—	1.99	1.99	—	1.99	31,353
Annual	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	0.11	0.05	0.01	—	0.01	0.01	—	0.01	128
Consumer Products	9.76	—	—	—	—	—	—	—	—	—
Architectural Coatings	1.76	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.17	0.13	12.7	0.01	—	0.01	0.01	—	0.01	31.1
Total	12.7	0.24	12.8	0.02	—	0.02	0.01	—	0.01	159

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	340
Total	—	—	—	—	—	—	—	—	—	340
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	340
Total	—	—	—	—	—	—	—	—	—	340
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	56.3
Total	—	—	—	—	—	—	—	—	—	56.3

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	3,486
Total	—	—	—	—	—	—	—	—	—	3,486

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	3,486
Total	—	—	—	—	—	—	—	—	—	3,486
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	577
Total	—	—	—	—	—	—	—	—	—	577

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	17.9
Total	—	—	—	—	—	—	—	—	—	17.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	17.9
Total	—	—	—	—	—	—	—	—	—	17.9
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	2.96
Total	—	—	—	—	—	—	—	—	—	2.96

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	1,025	925	775	355,875	13,612	12,284	10,292	4,725,994

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	1275
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	1225

Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
5062500	1,687,500	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	8,528,627	0.00	0.0330	0.0040	22,010,178

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	90,666,000	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	1,849	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	11.8	annual days of extreme heat
Extreme Precipitation	2.65	annual days with precipitation above 20 mm

Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A

Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	16.8
AQ-PM	19.3
AQ-DPM	79.0
Drinking Water	50.2
Lead Risk Housing	56.0
Pesticides	0.00
Toxic Releases	36.7
Traffic	74.9
Effect Indicators	—

CleanUp Sites	94.0
Groundwater	92.1
Haz Waste Facilities/Generators	85.7
Impaired Water Bodies	23.9
Solid Waste	22.1
Sensitive Population	—
Asthma	19.3
Cardio-vascular	28.8
Low Birth Weights	84.2
Socioeconomic Factor Indicators	—
Education	41.9
Housing	42.8
Linguistic	62.7
Poverty	33.2
Unemployment	11.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	84.39625305
Employed	98.6141409
Median HI	89.1954318
Education	—
Bachelor's or higher	78.44219171
High school enrollment	100
Preschool enrollment	90.77377133
Transportation	—

Auto Access	75.69613756
Active commuting	53.81752855
Social	—
2-parent households	94.44373155
Voting	87.51443603
Neighborhood	—
Alcohol availability	69.63941999
Park access	54.22815347
Retail density	53.77903247
Supermarket access	42.46118311
Tree canopy	78.73732837
Housing	—
Homeownership	77.35146927
Housing habitability	71.4744001
Low-inc homeowner severe housing cost burden	64.71192095
Low-inc renter severe housing cost burden	44.34749134
Uncrowded housing	44.45014757
Health Outcomes	—
Insured adults	85.29449506
Arthritis	54.3
Asthma ER Admissions	86.8
High Blood Pressure	48.4
Cancer (excluding skin)	27.6
Asthma	83.3
Coronary Heart Disease	63.8
Chronic Obstructive Pulmonary Disease	79.3
Diagnosed Diabetes	70.5
Life Expectancy at Birth	82.1

Cognitively Disabled	82.5
Physically Disabled	45.1
Heart Attack ER Admissions	72.6
Mental Health Not Good	85.8
Chronic Kidney Disease	64.9
Obesity	83.0
Pedestrian Injuries	88.4
Physical Health Not Good	82.3
Stroke	75.8
Health Risk Behaviors	—
Binge Drinking	71.2
Current Smoker	89.0
No Leisure Time for Physical Activity	76.7
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	8.1
Elderly	42.0
English Speaking	52.7
Foreign-born	62.2
Outdoor Workers	62.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	51.8
Traffic Density	58.4
Traffic Access	72.9
Other Indices	—
Hardship	19.2
Other Decision Support	—

2016 Voting	83.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	50.0
Healthy Places Index Score for Project Location (b)	95.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	ECR Precise Plan Land Use - Existing Land Use. Total lot acreage and square footage for residential from previous caleemod.
Operations: Water and Waste Water	Wastewater treatment 100% aerobic - no septic tanks or lagoons.
Operations: Vehicle Data	Provided trip gen and VMT info.
Characteristics: Utility Information	SVP residential rate = 0 lb/MWh.

19-217 ECR Existing 2024 Retail Detailed Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	19-217 ECR Existing 2024 Retail
Operational Year	2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	32.8
Location	El Camino Real, Santa Clara, CA, USA
County	Santa Clara
City	Santa Clara
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1762
EDFZ	1
Electric Utility	Silicon Valley Power
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Strip Mall	2,265	1000sqft	82.9	2,265,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	103	37.5	476	1.02	83.9	84.9	0.94	21.3	22.2	115,929
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	85.3	42.5	333	0.85	83.9	84.7	0.81	21.3	22.1	109,501
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	90.4	37.5	351	0.88	75.2	76.1	0.83	19.1	19.9	103,059
Annual (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	16.5	6.84	64.0	0.16	13.7	13.9	0.15	3.48	3.63	17,063

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	31.4	33.2	375	0.58	83.9	84.4	0.54	21.3	21.8	94,755
Area	71.1	0.83	98.5	0.18	—	0.18	0.13	—	0.13	407
Energy	0.19	3.47	2.91	0.26	—	0.26	0.26	—	0.26	15,035
Water	—	—	—	—	—	—	—	—	—	1,234

Waste	—	—	—	—	—	—	—	—	—	4,484
Refrig.	—	—	—	—	—	—	—	—	—	14.1
Total	103	37.5	476	1.02	83.9	84.9	0.94	21.3	22.2	115,929
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	30.1	39.0	331	0.58	83.9	84.4	0.54	21.3	21.8	88,734
Area	54.9	—	—	—	—	—	—	—	—	—
Energy	0.19	3.47	2.91	0.26	—	0.26	0.26	—	0.26	15,035
Water	—	—	—	—	—	—	—	—	—	1,234
Waste	—	—	—	—	—	—	—	—	—	4,484
Refrig.	—	—	—	—	—	—	—	—	—	14.1
Total	85.3	42.5	333	0.85	83.9	84.7	0.81	21.3	22.1	109,501
Average Daily	—	—	—	—	—	—	—	—	—	—
Mobile	27.3	33.6	299	0.53	75.2	75.7	0.50	19.1	19.6	82,091
Area	62.9	0.41	48.6	0.09	—	0.09	0.07	—	0.07	200
Energy	0.19	3.47	2.91	0.26	—	0.26	0.26	—	0.26	15,035
Water	—	—	—	—	—	—	—	—	—	1,234
Waste	—	—	—	—	—	—	—	—	—	4,484
Refrig.	—	—	—	—	—	—	—	—	—	14.1
Total	90.4	37.5	351	0.88	75.2	76.1	0.83	19.1	19.9	103,059
Annual	—	—	—	—	—	—	—	—	—	—
Mobile	4.97	6.13	54.6	0.10	13.7	13.8	0.09	3.48	3.57	13,591
Area	11.5	0.07	8.86	0.02	—	0.02	0.01	—	0.01	33.2
Energy	0.03	0.63	0.53	0.05	—	0.05	0.05	—	0.05	2,489
Water	—	—	—	—	—	—	—	—	—	204
Waste	—	—	—	—	—	—	—	—	—	742
Refrig.	—	—	—	—	—	—	—	—	—	2.34
Total	16.5	6.84	64.0	0.16	13.7	13.9	0.15	3.48	3.63	17,063

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	31.4	33.2	375	0.58	83.9	84.4	0.54	21.3	21.8	94,755
Total	31.4	33.2	375	0.58	83.9	84.4	0.54	21.3	21.8	94,755
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	30.1	39.0	331	0.58	83.9	84.4	0.54	21.3	21.8	88,734
Total	30.1	39.0	331	0.58	83.9	84.4	0.54	21.3	21.8	88,734
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	4.97	6.13	54.6	0.10	13.7	13.8	0.09	3.48	3.57	13,591
Total	4.97	6.13	54.6	0.10	13.7	13.8	0.09	3.48	3.57	13,591

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	10,887
Total	—	—	—	—	—	—	—	—	—	10,887
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—

Strip Mall	—	—	—	—	—	—	—	—	—	10,887
Total	—	—	—	—	—	—	—	—	—	10,887
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	1,802
Total	—	—	—	—	—	—	—	—	—	1,802

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	0.19	3.47	2.91	0.26	—	0.26	0.26	—	0.26	4,148
Total	0.19	3.47	2.91	0.26	—	0.26	0.26	—	0.26	4,148
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	0.19	3.47	2.91	0.26	—	0.26	0.26	—	0.26	4,148
Total	0.19	3.47	2.91	0.26	—	0.26	0.26	—	0.26	4,148
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	0.03	0.63	0.53	0.05	—	0.05	0.05	—	0.05	687
Total	0.03	0.63	0.53	0.05	—	0.05	0.05	—	0.05	687

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Consumer Products	48.5	—	—	—	—	—	—	—	—	—

Architectural Coatings	6.47	—	—	—	—	—	—	—	—	—
Landscape Equipment	16.2	0.83	98.5	0.18	—	0.18	0.13	—	0.13	407
Total	71.1	0.83	98.5	0.18	—	0.18	0.13	—	0.13	407
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Consumer Products	48.5	—	—	—	—	—	—	—	—	—
Architectural Coatings	6.47	—	—	—	—	—	—	—	—	—
Total	54.9	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Consumer Products	8.85	—	—	—	—	—	—	—	—	—
Architectural Coatings	1.18	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.45	0.07	8.86	0.02	—	0.02	0.01	—	0.01	33.2
Total	11.5	0.07	8.86	0.02	—	0.02	0.01	—	0.01	33.2

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	1,234
Total	—	—	—	—	—	—	—	—	—	1,234
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—

Strip Mall	—	—	—	—	—	—	—	—	—	1,234
Total	—	—	—	—	—	—	—	—	—	1,234
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	204
Total	—	—	—	—	—	—	—	—	—	204

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	4,484
Total	—	—	—	—	—	—	—	—	—	4,484
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	4,484
Total	—	—	—	—	—	—	—	—	—	4,484
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	742
Total	—	—	—	—	—	—	—	—	—	742

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Strip Mall	—	—	—	—	—	—	—	—	—	14.1
Total	—	—	—	—	—	—	—	—	—	14.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	14.1
Total	—	—	—	—	—	—	—	—	—	14.1
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	2.34
Total	—	—	—	—	—	—	—	—	—	2.34

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Strip Mall	7,565	7,180	3,488	2,528,597	118,908	112,856	54,826	39,744,422

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	3,397,500	1,132,500	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Strip Mall	19,354,364	203	0.0330	0.0040	12,907,270

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Strip Mall	167,774,261	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Strip Mall	2,378	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit

Temperature and Extreme Heat	11.8	annual days of extreme heat
Extreme Precipitation	2.65	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	16.8
AQ-PM	19.3
AQ-DPM	79.0
Drinking Water	50.2
Lead Risk Housing	56.0
Pesticides	0.00
Toxic Releases	36.7

Traffic	74.9
Effect Indicators	—
CleanUp Sites	94.0
Groundwater	92.1
Haz Waste Facilities/Generators	85.7
Impaired Water Bodies	23.9
Solid Waste	22.1
Sensitive Population	—
Asthma	19.3
Cardio-vascular	28.8
Low Birth Weights	84.2
Socioeconomic Factor Indicators	—
Education	41.9
Housing	42.8
Linguistic	62.7
Poverty	33.2
Unemployment	11.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	84.39625305
Employed	98.6141409
Median HI	89.1954318
Education	—
Bachelor's or higher	78.44219171
High school enrollment	100

Preschool enrollment	90.77377133
Transportation	—
Auto Access	75.69613756
Active commuting	53.81752855
Social	—
2-parent households	94.44373155
Voting	87.51443603
Neighborhood	—
Alcohol availability	69.63941999
Park access	54.22815347
Retail density	53.77903247
Supermarket access	42.46118311
Tree canopy	78.73732837
Housing	—
Homeownership	77.35146927
Housing habitability	71.4744001
Low-inc homeowner severe housing cost burden	64.71192095
Low-inc renter severe housing cost burden	44.34749134
Uncrowded housing	44.45014757
Health Outcomes	—
Insured adults	85.29449506
Arthritis	54.3
Asthma ER Admissions	86.8
High Blood Pressure	48.4
Cancer (excluding skin)	27.6
Asthma	83.3
Coronary Heart Disease	63.8
Chronic Obstructive Pulmonary Disease	79.3

Diagnosed Diabetes	70.5
Life Expectancy at Birth	82.1
Cognitively Disabled	82.5
Physically Disabled	45.1
Heart Attack ER Admissions	72.6
Mental Health Not Good	85.8
Chronic Kidney Disease	64.9
Obesity	83.0
Pedestrian Injuries	88.4
Physical Health Not Good	82.3
Stroke	75.8
Health Risk Behaviors	—
Binge Drinking	71.2
Current Smoker	89.0
No Leisure Time for Physical Activity	76.7
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	8.1
Elderly	42.0
English Speaking	52.7
Foreign-born	62.2
Outdoor Workers	62.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	51.8
Traffic Density	58.4
Traffic Access	72.9
Other Indices	—

Hardship	19.2
Other Decision Support	—
2016 Voting	83.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	50.0
Healthy Places Index Score for Project Location (b)	95.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	ECR Precise Plan Land Use - Existing Land Use. Total lot acreage for retail from previous caleemod.
Operations: Water and Waste Water	Wastewater treatment 100% aerobic - no septic tanks or lagoons.
Operations: Vehicle Data	Provided trip gen and VMT info.

19-217 ECR Existing 2030 Residential Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	19-217 ECR Existing 2030 Residential
Operational Year	2030
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	32.8
Location	El Camino Real, Santa Clara, CA, USA
County	Santa Clara
City	Santa Clara
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1762
EDFZ	1
Electric Utility	Silicon Valley Power
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	2,500	Dwelling Unit	65.8	2,500,000	0.00	—	7,475	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	80.3	34.2	189	2.56	9.60	12.2	2.54	2.43	4.97	52,418
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	67.9	33.3	42.7	2.49	9.60	12.1	2.49	2.43	4.92	51,445
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	72.3	9.55	101	0.58	8.94	9.52	0.57	2.27	2.83	20,689
Annual (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	13.2	1.74	18.4	0.11	1.63	1.74	0.10	0.41	0.52	3,425

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	3.07	2.61	33.5	0.05	9.60	9.65	0.05	2.43	2.48	9,720
Area	76.9	26.0	153	2.06	—	2.06	2.04	—	2.04	31,733
Energy	0.33	5.56	2.36	0.45	—	0.45	0.45	—	0.45	7,121
Water	—	—	—	—	—	—	—	—	—	340

Waste	—	—	—	—	—	—	—	—	—	3,486
Refrig.	—	—	—	—	—	—	—	—	—	17.9
Total	80.3	34.2	189	2.56	9.60	12.2	2.54	2.43	4.97	52,418
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	2.95	3.05	29.8	0.05	9.60	9.65	0.05	2.43	2.48	9,128
Area	64.6	24.7	10.5	1.99	—	1.99	1.99	—	1.99	31,353
Energy	0.33	5.56	2.36	0.45	—	0.45	0.45	—	0.45	7,121
Water	—	—	—	—	—	—	—	—	—	340
Waste	—	—	—	—	—	—	—	—	—	3,486
Refrig.	—	—	—	—	—	—	—	—	—	17.9
Total	67.9	33.3	42.7	2.49	9.60	12.1	2.49	2.43	4.92	51,445
Average Daily	—	—	—	—	—	—	—	—	—	—
Mobile	2.78	2.73	28.1	0.05	8.94	8.99	0.04	2.27	2.31	8,764
Area	69.2	1.26	70.4	0.08	—	0.08	0.07	—	0.07	961
Energy	0.33	5.56	2.36	0.45	—	0.45	0.45	—	0.45	7,121
Water	—	—	—	—	—	—	—	—	—	340
Waste	—	—	—	—	—	—	—	—	—	3,486
Refrig.	—	—	—	—	—	—	—	—	—	17.9
Total	72.3	9.55	101	0.58	8.94	9.52	0.57	2.27	2.83	20,689
Annual	—	—	—	—	—	—	—	—	—	—
Mobile	0.51	0.50	5.12	0.01	1.63	1.64	0.01	0.41	0.42	1,451
Area	12.6	0.23	12.9	0.01	—	0.01	0.01	—	0.01	159
Energy	0.06	1.01	0.43	0.08	—	0.08	0.08	—	0.08	1,179
Water	—	—	—	—	—	—	—	—	—	56.3
Waste	—	—	—	—	—	—	—	—	—	577
Refrig.	—	—	—	—	—	—	—	—	—	2.96
Total	13.2	1.74	18.4	0.11	1.63	1.74	0.10	0.41	0.52	3,425

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	3.07	2.61	33.5	0.05	9.60	9.65	0.05	2.43	2.48	9,720
Total	3.07	2.61	33.5	0.05	9.60	9.65	0.05	2.43	2.48	9,720
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	2.95	3.05	29.8	0.05	9.60	9.65	0.05	2.43	2.48	9,128
Total	2.95	3.05	29.8	0.05	9.60	9.65	0.05	2.43	2.48	9,128
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.51	0.50	5.12	0.01	1.63	1.64	0.01	0.41	0.42	1,451
Total	0.51	0.50	5.12	0.01	1.63	1.64	0.01	0.41	0.42	1,451

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	47.1

Total	—	—	—	—	—	—	—	—	—	47.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	47.1
Total	—	—	—	—	—	—	—	—	—	47.1
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	7.80
Total	—	—	—	—	—	—	—	—	—	7.80

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.33	5.56	2.36	0.45	—	0.45	0.45	—	0.45	7,074
Total	0.33	5.56	2.36	0.45	—	0.45	0.45	—	0.45	7,074
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.33	5.56	2.36	0.45	—	0.45	0.45	—	0.45	7,074
Total	0.33	5.56	2.36	0.45	—	0.45	0.45	—	0.45	7,074
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.06	1.01	0.43	0.08	—	0.08	0.08	—	0.08	1,171
Total	0.06	1.01	0.43	0.08	—	0.08	0.08	—	0.08	1,171

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Hearths	1.44	24.7	10.5	1.99	—	1.99	1.99	—	1.99	31,353
Consumer Products	53.5	—	—	—	—	—	—	—	—	—
Architectural Coatings	9.65	—	—	—	—	—	—	—	—	—
Landscape Equipment	12.3	1.33	142	0.06	—	0.06	0.05	—	0.05	381
Total	76.9	26.0	153	2.06	—	2.06	2.04	—	2.04	31,733
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Hearths	1.44	24.7	10.5	1.99	—	1.99	1.99	—	1.99	31,353
Consumer Products	53.5	—	—	—	—	—	—	—	—	—
Architectural Coatings	9.65	—	—	—	—	—	—	—	—	—
Total	64.6	24.7	10.5	1.99	—	1.99	1.99	—	1.99	31,353
Annual	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	0.11	0.05	0.01	—	0.01	0.01	—	0.01	128
Consumer Products	9.76	—	—	—	—	—	—	—	—	—
Architectural Coatings	1.76	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.10	0.12	12.8	0.01	—	0.01	< 0.005	—	< 0.005	31.1
Total	12.6	0.23	12.9	0.01	—	0.01	0.01	—	0.01	159

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	340
Total	—	—	—	—	—	—	—	—	—	340
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	340
Total	—	—	—	—	—	—	—	—	—	340
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	56.3
Total	—	—	—	—	—	—	—	—	—	56.3

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	3,486
Total	—	—	—	—	—	—	—	—	—	3,486

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	3,486
Total	—	—	—	—	—	—	—	—	—	3,486
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	577
Total	—	—	—	—	—	—	—	—	—	577

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	17.9
Total	—	—	—	—	—	—	—	—	—	17.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	17.9
Total	—	—	—	—	—	—	—	—	—	17.9
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	2.96
Total	—	—	—	—	—	—	—	—	—	2.96

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	1,025	925	775	355,875	13,612	12,284	10,292	4,725,994

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	1275
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	1225

Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
5062500	1,687,500	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	8,528,627	0.00	0.0330	0.0040	22,010,178

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	90,666,000	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	1,849	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	11.8	annual days of extreme heat
Extreme Precipitation	2.65	annual days with precipitation above 20 mm

Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A

Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	16.8
AQ-PM	19.3
AQ-DPM	79.0
Drinking Water	50.2
Lead Risk Housing	56.0
Pesticides	0.00
Toxic Releases	36.7
Traffic	74.9
Effect Indicators	—

CleanUp Sites	94.0
Groundwater	92.1
Haz Waste Facilities/Generators	85.7
Impaired Water Bodies	23.9
Solid Waste	22.1
Sensitive Population	—
Asthma	19.3
Cardio-vascular	28.8
Low Birth Weights	84.2
Socioeconomic Factor Indicators	—
Education	41.9
Housing	42.8
Linguistic	62.7
Poverty	33.2
Unemployment	11.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	84.39625305
Employed	98.6141409
Median HI	89.1954318
Education	—
Bachelor's or higher	78.44219171
High school enrollment	100
Preschool enrollment	90.77377133
Transportation	—

Auto Access	75.69613756
Active commuting	53.81752855
Social	—
2-parent households	94.44373155
Voting	87.51443603
Neighborhood	—
Alcohol availability	69.63941999
Park access	54.22815347
Retail density	53.77903247
Supermarket access	42.46118311
Tree canopy	78.73732837
Housing	—
Homeownership	77.35146927
Housing habitability	71.4744001
Low-inc homeowner severe housing cost burden	64.71192095
Low-inc renter severe housing cost burden	44.34749134
Uncrowded housing	44.45014757
Health Outcomes	—
Insured adults	85.29449506
Arthritis	54.3
Asthma ER Admissions	86.8
High Blood Pressure	48.4
Cancer (excluding skin)	27.6
Asthma	83.3
Coronary Heart Disease	63.8
Chronic Obstructive Pulmonary Disease	79.3
Diagnosed Diabetes	70.5
Life Expectancy at Birth	82.1

Cognitively Disabled	82.5
Physically Disabled	45.1
Heart Attack ER Admissions	72.6
Mental Health Not Good	85.8
Chronic Kidney Disease	64.9
Obesity	83.0
Pedestrian Injuries	88.4
Physical Health Not Good	82.3
Stroke	75.8
Health Risk Behaviors	—
Binge Drinking	71.2
Current Smoker	89.0
No Leisure Time for Physical Activity	76.7
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	8.1
Elderly	42.0
English Speaking	52.7
Foreign-born	62.2
Outdoor Workers	62.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	51.8
Traffic Density	58.4
Traffic Access	72.9
Other Indices	—
Hardship	19.2
Other Decision Support	—

2016 Voting	83.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	50.0
Healthy Places Index Score for Project Location (b)	95.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	ECR Precise Plan Land Use - Existing Land Use. Total lot acreage and square footage for residential from previous caleemod.
Operations: Water and Waste Water	Wastewater treatment 100% aerobic - no septic tanks or lagoons.
Operations: Vehicle Data	Provided trip gen and VMT info.
Characteristics: Utility Information	SVP residential = 0 lb/mwh.

19-217 ECR Existing 2030 Retail Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	19-217 ECR Existing 2030 Retail
Operational Year	2030
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	32.8
Location	El Camino Real, Santa Clara, CA, USA
County	Santa Clara
City	Santa Clara
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1762
EDFZ	1
Electric Utility	Silicon Valley Power
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Strip Mall	2,265	1000sqft	82.9	2,265,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	95.1	26.3	388	0.86	83.9	84.7	0.79	21.3	22.1	103,018
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	78.0	29.2	254	0.69	83.9	84.6	0.66	21.3	21.9	97,431
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	83.9	26.1	280	0.74	75.2	75.9	0.69	19.1	19.8	91,622
Annual (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	15.3	4.76	51.2	0.14	13.7	13.9	0.13	3.48	3.61	15,169

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	23.8	22.0	287	0.43	83.9	84.3	0.40	21.3	21.7	84,665
Area	71.1	0.83	98.5	0.17	—	0.17	0.13	—	0.13	407
Energy	0.19	3.47	2.91	0.26	—	0.26	0.26	—	0.26	12,364
Water	—	—	—	—	—	—	—	—	—	1,084

Waste	—	—	—	—	—	—	—	—	—	4,484
Refrig.	—	—	—	—	—	—	—	—	—	14.1
Total	95.1	26.3	388	0.86	83.9	84.7	0.79	21.3	22.1	103,018
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	22.9	25.7	251	0.43	83.9	84.3	0.40	21.3	21.7	79,485
Area	54.9	—	—	—	—	—	—	—	—	—
Energy	0.19	3.47	2.91	0.26	—	0.26	0.26	—	0.26	12,364
Water	—	—	—	—	—	—	—	—	—	1,084
Waste	—	—	—	—	—	—	—	—	—	4,484
Refrig.	—	—	—	—	—	—	—	—	—	14.1
Total	78.0	29.2	254	0.69	83.9	84.6	0.66	21.3	21.9	97,431
Average Daily	—	—	—	—	—	—	—	—	—	—
Mobile	20.8	22.2	229	0.39	75.2	75.6	0.36	19.1	19.4	73,475
Area	62.9	0.41	48.6	0.09	—	0.09	0.07	—	0.07	200
Energy	0.19	3.47	2.91	0.26	—	0.26	0.26	—	0.26	12,364
Water	—	—	—	—	—	—	—	—	—	1,084
Waste	—	—	—	—	—	—	—	—	—	4,484
Refrig.	—	—	—	—	—	—	—	—	—	14.1
Total	83.9	26.1	280	0.74	75.2	75.9	0.69	19.1	19.8	91,622
Annual	—	—	—	—	—	—	—	—	—	—
Mobile	3.79	4.05	41.8	0.07	13.7	13.8	0.07	3.48	3.55	12,165
Area	11.5	0.07	8.87	0.02	—	0.02	0.01	—	0.01	33.2
Energy	0.03	0.63	0.53	0.05	—	0.05	0.05	—	0.05	2,047
Water	—	—	—	—	—	—	—	—	—	179
Waste	—	—	—	—	—	—	—	—	—	742
Refrig.	—	—	—	—	—	—	—	—	—	2.34
Total	15.3	4.76	51.2	0.14	13.7	13.9	0.13	3.48	3.61	15,169

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	23.8	22.0	287	0.43	83.9	84.3	0.40	21.3	21.7	84,665
Total	23.8	22.0	287	0.43	83.9	84.3	0.40	21.3	21.7	84,665
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	22.9	25.7	251	0.43	83.9	84.3	0.40	21.3	21.7	79,485
Total	22.9	25.7	251	0.43	83.9	84.3	0.40	21.3	21.7	79,485
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	3.79	4.05	41.8	0.07	13.7	13.8	0.07	3.48	3.55	12,165
Total	3.79	4.05	41.8	0.07	13.7	13.8	0.07	3.48	3.55	12,165

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	8,216
Total	—	—	—	—	—	—	—	—	—	8,216
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—

Strip Mall	—	—	—	—	—	—	—	—	—	8,216
Total	—	—	—	—	—	—	—	—	—	8,216
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	1,360
Total	—	—	—	—	—	—	—	—	—	1,360

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	0.19	3.47	2.91	0.26	—	0.26	0.26	—	0.26	4,148
Total	0.19	3.47	2.91	0.26	—	0.26	0.26	—	0.26	4,148
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	0.19	3.47	2.91	0.26	—	0.26	0.26	—	0.26	4,148
Total	0.19	3.47	2.91	0.26	—	0.26	0.26	—	0.26	4,148
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	0.03	0.63	0.53	0.05	—	0.05	0.05	—	0.05	687
Total	0.03	0.63	0.53	0.05	—	0.05	0.05	—	0.05	687

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Consumer Products	48.5	—	—	—	—	—	—	—	—	—

Architectural Coatings	6.47	—	—	—	—	—	—	—	—	—
Landscape Equipment	16.2	0.83	98.5	0.17	—	0.17	0.13	—	0.13	407
Total	71.1	0.83	98.5	0.17	—	0.17	0.13	—	0.13	407
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Consumer Products	48.5	—	—	—	—	—	—	—	—	—
Architectural Coatings	6.47	—	—	—	—	—	—	—	—	—
Total	54.9	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Consumer Products	8.85	—	—	—	—	—	—	—	—	—
Architectural Coatings	1.18	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.46	0.07	8.87	0.02	—	0.02	0.01	—	0.01	33.2
Total	11.5	0.07	8.87	0.02	—	0.02	0.01	—	0.01	33.2

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	1,084
Total	—	—	—	—	—	—	—	—	—	1,084
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—

Strip Mall	—	—	—	—	—	—	—	—	—	1,084
Total	—	—	—	—	—	—	—	—	—	1,084
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	179
Total	—	—	—	—	—	—	—	—	—	179

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	4,484
Total	—	—	—	—	—	—	—	—	—	4,484
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	4,484
Total	—	—	—	—	—	—	—	—	—	4,484
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	742
Total	—	—	—	—	—	—	—	—	—	742

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Strip Mall	—	—	—	—	—	—	—	—	—	14.1
Total	—	—	—	—	—	—	—	—	—	14.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	14.1
Total	—	—	—	—	—	—	—	—	—	14.1
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	2.34
Total	—	—	—	—	—	—	—	—	—	2.34

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Strip Mall	7,565	7,180	3,488	2,528,597	118,908	112,856	54,826	39,744,422

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	3,397,500	1,132,500	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Strip Mall	19,354,364	153	0.0330	0.0040	12,907,270

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Strip Mall	167,774,261	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Strip Mall	2,378	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit

Temperature and Extreme Heat	11.8	annual days of extreme heat
Extreme Precipitation	2.65	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	16.8
AQ-PM	19.3
AQ-DPM	79.0
Drinking Water	50.2
Lead Risk Housing	56.0
Pesticides	0.00
Toxic Releases	36.7

Traffic	74.9
Effect Indicators	—
CleanUp Sites	94.0
Groundwater	92.1
Haz Waste Facilities/Generators	85.7
Impaired Water Bodies	23.9
Solid Waste	22.1
Sensitive Population	—
Asthma	19.3
Cardio-vascular	28.8
Low Birth Weights	84.2
Socioeconomic Factor Indicators	—
Education	41.9
Housing	42.8
Linguistic	62.7
Poverty	33.2
Unemployment	11.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	84.39625305
Employed	98.6141409
Median HI	89.1954318
Education	—
Bachelor's or higher	78.44219171
High school enrollment	100

Preschool enrollment	90.77377133
Transportation	—
Auto Access	75.69613756
Active commuting	53.81752855
Social	—
2-parent households	94.44373155
Voting	87.51443603
Neighborhood	—
Alcohol availability	69.63941999
Park access	54.22815347
Retail density	53.77903247
Supermarket access	42.46118311
Tree canopy	78.73732837
Housing	—
Homeownership	77.35146927
Housing habitability	71.4744001
Low-inc homeowner severe housing cost burden	64.71192095
Low-inc renter severe housing cost burden	44.34749134
Uncrowded housing	44.45014757
Health Outcomes	—
Insured adults	85.29449506
Arthritis	54.3
Asthma ER Admissions	86.8
High Blood Pressure	48.4
Cancer (excluding skin)	27.6
Asthma	83.3
Coronary Heart Disease	63.8
Chronic Obstructive Pulmonary Disease	79.3

Diagnosed Diabetes	70.5
Life Expectancy at Birth	82.1
Cognitively Disabled	82.5
Physically Disabled	45.1
Heart Attack ER Admissions	72.6
Mental Health Not Good	85.8
Chronic Kidney Disease	64.9
Obesity	83.0
Pedestrian Injuries	88.4
Physical Health Not Good	82.3
Stroke	75.8
Health Risk Behaviors	—
Binge Drinking	71.2
Current Smoker	89.0
No Leisure Time for Physical Activity	76.7
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	8.1
Elderly	42.0
English Speaking	52.7
Foreign-born	62.2
Outdoor Workers	62.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	51.8
Traffic Density	58.4
Traffic Access	72.9
Other Indices	—

Hardship	19.2
Other Decision Support	—
2016 Voting	83.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	50.0
Healthy Places Index Score for Project Location (b)	95.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	ECR Precise Plan Land Use - Existing Land Use. Total lot acreage for retail from previous caleemod.
Operations: Water and Waste Water	Wastewater treatment 100% aerobic - no septic tanks or lagoons.
Operations: Vehicle Data	Provided trip gen and VMT info.

19-217 ECR Precise Plan Existing + Project 2030 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	19-217 ECR Precise Plan Existing + Project 2030
Operational Year	2030
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	32.8
Location	El Camino Real, Santa Clara, CA, USA
County	Santa Clara
City	Santa Clara
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1762
EDFZ	1
Electric Utility	Silicon Valley Power
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	6,892	Dwelling Unit	181	6,616,320	0.00	—	20,607	—
Strip Mall	1,976	1000sqft	45.4	1,976,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	318	121	870	7.79	88.5	96.2	7.68	22.4	30.1	217,582
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	268	121	378	7.46	88.5	95.9	7.43	22.4	29.8	210,796
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	284	52.5	549	2.22	80.1	82.3	2.15	20.3	22.5	121,421
Annual (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	51.8	9.58	100	0.41	14.6	15.0	0.39	3.71	4.10	20,103

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	50.2	29.8	354	0.49	88.5	88.9	0.46	22.4	22.9	91,336
Area	267	72.4	507	5.83	—	5.83	5.75	—	5.75	87,838
Energy	1.06	18.3	9.06	1.47	—	1.47	1.47	—	1.47	23,342
Water	—	—	—	—	—	—	—	—	—	1,485

Waste	—	—	—	—	—	—	—	—	—	13,522
Refrig.	—	—	—	—	—	—	—	—	—	59.7
Total	318	121	870	7.79	88.5	96.2	7.68	22.4	30.1	217,582
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	48.2	34.8	340	0.49	88.5	89.0	0.46	22.4	22.9	85,954
Area	219	68.0	28.9	5.50	—	5.50	5.50	—	5.50	86,434
Energy	1.06	18.3	9.06	1.47	—	1.47	1.47	—	1.47	23,342
Water	—	—	—	—	—	—	—	—	—	1,485
Waste	—	—	—	—	—	—	—	—	—	13,522
Refrig.	—	—	—	—	—	—	—	—	—	59.7
Total	268	121	378	7.46	88.5	95.9	7.43	22.4	29.8	210,796
Average Daily	—	—	—	—	—	—	—	—	—	—
Mobile	44.0	30.3	303	0.45	80.1	80.5	0.42	20.3	20.7	80,188
Area	239	3.84	237	0.30	—	0.30	0.26	—	0.26	2,824
Energy	1.06	18.3	9.06	1.47	—	1.47	1.47	—	1.47	23,342
Water	—	—	—	—	—	—	—	—	—	1,485
Waste	—	—	—	—	—	—	—	—	—	13,522
Refrig.	—	—	—	—	—	—	—	—	—	59.7
Total	284	52.5	549	2.22	80.1	82.3	2.15	20.3	22.5	121,421
Annual	—	—	—	—	—	—	—	—	—	—
Mobile	8.04	5.53	55.3	0.08	14.6	14.7	0.08	3.71	3.78	13,276
Area	43.6	0.70	43.2	0.05	—	0.05	0.05	—	0.05	467
Energy	0.19	3.35	1.65	0.27	—	0.27	0.27	—	0.27	3,865
Water	—	—	—	—	—	—	—	—	—	246
Waste	—	—	—	—	—	—	—	—	—	2,239
Refrig.	—	—	—	—	—	—	—	—	—	9.88
Total	51.8	9.58	100	0.41	14.6	15.0	0.39	3.71	4.10	20,103

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	14.8	8.31	97.1	0.13	23.6	23.7	0.12	5.97	6.10	24,442
Strip Mall	35.4	21.5	256	0.36	64.9	65.3	0.33	16.5	16.8	66,894
Total	50.2	29.8	354	0.49	88.5	88.9	0.46	22.4	22.9	91,336
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	14.2	9.72	94.8	0.13	23.6	23.7	0.12	5.97	6.10	23,014
Strip Mall	33.9	25.1	245	0.36	64.9	65.3	0.33	16.5	16.8	62,940
Total	48.2	34.8	340	0.49	88.5	89.0	0.46	22.4	22.9	85,954
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	2.43	1.58	15.8	0.02	4.00	4.02	0.02	1.01	1.03	3,649
Strip Mall	5.60	3.95	39.6	0.06	10.6	10.7	0.06	2.69	2.75	9,627
Total	8.04	5.53	55.3	0.08	14.6	14.7	0.08	3.71	3.78	13,276

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	130
Strip Mall	—	—	—	—	—	—	—	—	—	93.3
Total	—	—	—	—	—	—	—	—	—	223
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	130
Strip Mall	—	—	—	—	—	—	—	—	—	93.3
Total	—	—	—	—	—	—	—	—	—	223
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	21.5
Strip Mall	—	—	—	—	—	—	—	—	—	15.4
Total	—	—	—	—	—	—	—	—	—	37.0

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.90	15.3	6.52	1.24	—	1.24	1.24	—	1.24	19,500
Strip Mall	0.17	3.02	2.54	0.23	—	0.23	0.23	—	0.23	3,619
Total	1.06	18.3	9.06	1.47	—	1.47	1.47	—	1.47	23,119
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.90	15.3	6.52	1.24	—	1.24	1.24	—	1.24	19,500

Strip Mall	0.17	3.02	2.54	0.23	—	0.23	0.23	—	0.23	3,619
Total	1.06	18.3	9.06	1.47	—	1.47	1.47	—	1.47	23,119
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.16	2.80	1.19	0.23	—	0.23	0.23	—	0.23	3,228
Strip Mall	0.03	0.55	0.46	0.04	—	0.04	0.04	—	0.04	599
Total	0.19	3.35	1.65	0.27	—	0.27	0.27	—	0.27	3,828

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Hearths	3.98	68.0	28.9	5.50	—	5.50	5.50	—	5.50	86,434
Consumer Products	184	—	—	—	—	—	—	—	—	—
Architectural Coatings	31.2	—	—	—	—	—	—	—	—	—
Landscape Equipment	48.0	4.38	478	0.33	—	0.33	0.25	—	0.25	1,404
Total	267	72.4	507	5.83	—	5.83	5.75	—	5.75	87,838
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Hearths	3.98	68.0	28.9	5.50	—	5.50	5.50	—	5.50	86,434
Consumer Products	184	—	—	—	—	—	—	—	—	—
Architectural Coatings	31.2	—	—	—	—	—	—	—	—	—
Total	219	68.0	28.9	5.50	—	5.50	5.50	—	5.50	86,434

Annual	—	—	—	—	—	—	—	—	—	—
Hearths	0.02	0.31	0.13	0.02	—	0.02	0.02	—	0.02	353
Consumer Products	33.6	—	—	—	—	—	—	—	—	—
Architectural Coatings	5.69	—	—	—	—	—	—	—	—	—
Landscape Equipment	4.32	0.39	43.0	0.03	—	0.03	0.02	—	0.02	115
Total	43.6	0.70	43.2	0.05	—	0.05	0.05	—	0.05	467

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	937
Strip Mall	—	—	—	—	—	—	—	—	—	549
Total	—	—	—	—	—	—	—	—	—	1,485
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	937
Strip Mall	—	—	—	—	—	—	—	—	—	549
Total	—	—	—	—	—	—	—	—	—	1,485
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	155
Strip Mall	—	—	—	—	—	—	—	—	—	90.8

Total	—	—	—	—	—	—	—	—	—	246

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	9,610
Strip Mall	—	—	—	—	—	—	—	—	—	3,912
Total	—	—	—	—	—	—	—	—	—	13,522
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	9,610
Strip Mall	—	—	—	—	—	—	—	—	—	3,912
Total	—	—	—	—	—	—	—	—	—	13,522
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	1,591
Strip Mall	—	—	—	—	—	—	—	—	—	648
Total	—	—	—	—	—	—	—	—	—	2,239

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	47.4
Strip Mall	—	—	—	—	—	—	—	—	—	12.3
Total	—	—	—	—	—	—	—	—	—	59.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	47.4
Strip Mall	—	—	—	—	—	—	—	—	—	12.3
Total	—	—	—	—	—	—	—	—	—	59.7
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	7.85
Strip Mall	—	—	—	—	—	—	—	—	—	2.04
Total	—	—	—	—	—	—	—	—	—	9.88

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	5,858	5,238	4,411	2,030,432	33,404	29,868	25,152	11,577,873
Strip Mall	13,634	12,943	6,284	4,557,206	92,024	87,356	42,411	30,758,239

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	3515
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	3377
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
13398048	4,466,016	2,964,000	988,000	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	23,511,719	0.00	0.0330	0.0040	60,677,658
Strip Mall	16,884,867	0.00	0.0330	0.0040	11,260,382

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	249,948,029	0.00
Strip Mall	146,367,302	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	5,096	—
Strip Mall	2,075	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	11.8	annual days of extreme heat
Extreme Precipitation	2.65	annual days with precipitation above 20 mm

Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A

Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	16.8
AQ-PM	19.3
AQ-DPM	79.0
Drinking Water	50.2
Lead Risk Housing	56.0
Pesticides	0.00
Toxic Releases	36.7
Traffic	74.9
Effect Indicators	—

CleanUp Sites	94.0
Groundwater	92.1
Haz Waste Facilities/Generators	85.7
Impaired Water Bodies	23.9
Solid Waste	22.1
Sensitive Population	—
Asthma	19.3
Cardio-vascular	28.8
Low Birth Weights	84.2
Socioeconomic Factor Indicators	—
Education	41.9
Housing	42.8
Linguistic	62.7
Poverty	33.2
Unemployment	11.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	84.39625305
Employed	98.6141409
Median HI	89.1954318
Education	—
Bachelor's or higher	78.44219171
High school enrollment	100
Preschool enrollment	90.77377133
Transportation	—

Auto Access	75.69613756
Active commuting	53.81752855
Social	—
2-parent households	94.44373155
Voting	87.51443603
Neighborhood	—
Alcohol availability	69.63941999
Park access	54.22815347
Retail density	53.77903247
Supermarket access	42.46118311
Tree canopy	78.73732837
Housing	—
Homeownership	77.35146927
Housing habitability	71.4744001
Low-inc homeowner severe housing cost burden	64.71192095
Low-inc renter severe housing cost burden	44.34749134
Uncrowded housing	44.45014757
Health Outcomes	—
Insured adults	85.29449506
Arthritis	54.3
Asthma ER Admissions	86.8
High Blood Pressure	48.4
Cancer (excluding skin)	27.6
Asthma	83.3
Coronary Heart Disease	63.8
Chronic Obstructive Pulmonary Disease	79.3
Diagnosed Diabetes	70.5
Life Expectancy at Birth	82.1

Cognitively Disabled	82.5
Physically Disabled	45.1
Heart Attack ER Admissions	72.6
Mental Health Not Good	85.8
Chronic Kidney Disease	64.9
Obesity	83.0
Pedestrian Injuries	88.4
Physical Health Not Good	82.3
Stroke	75.8
Health Risk Behaviors	—
Binge Drinking	71.2
Current Smoker	89.0
No Leisure Time for Physical Activity	76.7
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	8.1
Elderly	42.0
English Speaking	52.7
Foreign-born	62.2
Outdoor Workers	62.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	51.8
Traffic Density	58.4
Traffic Access	72.9
Other Indices	—
Hardship	19.2
Other Decision Support	—

2016 Voting	83.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	50.0
Healthy Places Index Score for Project Location (b)	95.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Operations: Hearths	—
Operations: Water and Waste Water	Wastewater treatment 100% aerobic - no septic tanks or lagoons.
Operations: Vehicle Data	Provided trip gen and VMT.
Characteristics: Utility Information	Silicon Valley Power residential CO2 intensity rate = 0 lb/MWh.

19-217 ECR Precise Plan New Residential, No nat Gas/Hearths 2030 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	19-217 ECR Precise Plan New Residential, No nat Gas/Hearths 2030
Operational Year	2030
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	32.8
Location	El Camino Real, Santa Clara, CA, USA
County	Santa Clara
City	Santa Clara
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1762
EDFZ	1
Electric Utility	Silicon Valley Power
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	4,392	Dwelling Unit	116	4,216,320	0.00	—	13,132	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	189	38.4	677	0.70	106	107	0.64	26.9	27.6	118,080
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	165	42.2	411	0.59	106	107	0.55	26.9	27.5	110,949
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	172	38.9	500	0.62	98.9	99.5	0.57	25.1	25.6	107,039
Annual (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	31.5	7.09	91.3	0.11	18.0	18.2	0.10	4.58	4.68	17,721

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	61.4	36.0	427	0.59	106	107	0.55	26.9	27.5	109,797
Area	128	2.33	250	0.11	—	0.11	0.09	—	0.09	669
Energy	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	145
Water	—	—	—	—	—	—	—	—	—	1,315

Waste	—	—	—	—	—	—	—	—	—	6,124
Refrig.	—	—	—	—	—	—	—	—	—	30.2
Total	189	38.4	677	0.70	106	107	0.64	26.9	27.6	118,080
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	58.8	42.2	411	0.59	106	107	0.55	26.9	27.5	103,335
Area	106	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Energy	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	145
Water	—	—	—	—	—	—	—	—	—	1,315
Waste	—	—	—	—	—	—	—	—	—	6,124
Refrig.	—	—	—	—	—	—	—	—	—	30.2
Total	165	42.2	411	0.59	106	107	0.55	26.9	27.5	110,949
Average Daily	—	—	—	—	—	—	—	—	—	—
Mobile	55.3	37.7	377	0.56	98.9	99.4	0.52	25.1	25.6	99,095
Area	117	1.15	123	0.06	—	0.06	0.04	—	0.04	330
Energy	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	145
Water	—	—	—	—	—	—	—	—	—	1,315
Waste	—	—	—	—	—	—	—	—	—	6,124
Refrig.	—	—	—	—	—	—	—	—	—	30.2
Total	172	38.9	500	0.62	98.9	99.5	0.57	25.1	25.6	107,039
Annual	—	—	—	—	—	—	—	—	—	—
Mobile	10.1	6.88	68.8	0.10	18.0	18.1	0.10	4.58	4.67	16,406
Area	21.4	0.21	22.5	0.01	—	0.01	0.01	—	0.01	54.6
Energy	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	24.1
Water	—	—	—	—	—	—	—	—	—	218
Waste	—	—	—	—	—	—	—	—	—	1,014
Refrig.	—	—	—	—	—	—	—	—	—	5.00
Total	31.5	7.09	91.3	0.11	18.0	18.2	0.10	4.58	4.68	17,721

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	61.4	36.0	427	0.59	106	107	0.55	26.9	27.5	109,797
Total	61.4	36.0	427	0.59	106	107	0.55	26.9	27.5	109,797
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	58.8	42.2	411	0.59	106	107	0.55	26.9	27.5	103,335
Total	58.8	42.2	411	0.59	106	107	0.55	26.9	27.5	103,335
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	10.1	6.88	68.8	0.10	18.0	18.1	0.10	4.58	4.67	16,406
Total	10.1	6.88	68.8	0.10	18.0	18.1	0.10	4.58	4.67	16,406

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	145

Total	—	—	—	—	—	—	—	—	—	145
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	145
Total	—	—	—	—	—	—	—	—	—	145
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	24.1
Total	—	—	—	—	—	—	—	—	—	24.1

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	90.2	—	—	—	—	—	—	—	—	—
Architectural Coatings	16.3	—	—	—	—	—	—	—	—	—
Landscape Equipment	21.6	2.33	250	0.11	—	0.11	0.09	—	0.09	669
Total	128	2.33	250	0.11	—	0.11	0.09	—	0.09	669
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	90.2	—	—	—	—	—	—	—	—	—
Architectural Coatings	16.3	—	—	—	—	—	—	—	—	—
Total	106	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	16.5	—	—	—	—	—	—	—	—	—
Architectural Coatings	2.97	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.94	0.21	22.5	0.01	—	0.01	0.01	—	0.01	54.6
Total	21.4	0.21	22.5	0.01	—	0.01	0.01	—	0.01	54.6

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	1,315
Total	—	—	—	—	—	—	—	—	—	1,315
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	1,315
Total	—	—	—	—	—	—	—	—	—	1,315
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	218
Total	—	—	—	—	—	—	—	—	—	218

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	6,124
Total	—	—	—	—	—	—	—	—	—	6,124

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	6,124
Total	—	—	—	—	—	—	—	—	—	6,124
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	1,014
Total	—	—	—	—	—	—	—	—	—	1,014

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	30.2
Total	—	—	—	—	—	—	—	—	—	30.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	30.2
Total	—	—	—	—	—	—	—	—	—	30.2
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	5.00
Total	—	—	—	—	—	—	—	—	—	5.00

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	23,892	21,565	17,963	8,290,214	150,664	135,985	113,275	52,277,262

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0

Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
8538048	2,846,016	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	26,315,412	0.00	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	159,282,029	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	3,248	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	11.8	annual days of extreme heat
Extreme Precipitation	2.65	annual days with precipitation above 20 mm

Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A

Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	16.8
AQ-PM	19.3
AQ-DPM	79.0
Drinking Water	50.2
Lead Risk Housing	56.0
Pesticides	0.00
Toxic Releases	36.7
Traffic	74.9
Effect Indicators	—

CleanUp Sites	94.0
Groundwater	92.1
Haz Waste Facilities/Generators	85.7
Impaired Water Bodies	23.9
Solid Waste	22.1
Sensitive Population	—
Asthma	19.3
Cardio-vascular	28.8
Low Birth Weights	84.2
Socioeconomic Factor Indicators	—
Education	41.9
Housing	42.8
Linguistic	62.7
Poverty	33.2
Unemployment	11.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	84.39625305
Employed	98.6141409
Median HI	89.1954318
Education	—
Bachelor's or higher	78.44219171
High school enrollment	100
Preschool enrollment	90.77377133
Transportation	—

Auto Access	75.69613756
Active commuting	53.81752855
Social	—
2-parent households	94.44373155
Voting	87.51443603
Neighborhood	—
Alcohol availability	69.63941999
Park access	54.22815347
Retail density	53.77903247
Supermarket access	42.46118311
Tree canopy	78.73732837
Housing	—
Homeownership	77.35146927
Housing habitability	71.4744001
Low-inc homeowner severe housing cost burden	64.71192095
Low-inc renter severe housing cost burden	44.34749134
Uncrowded housing	44.45014757
Health Outcomes	—
Insured adults	85.29449506
Arthritis	54.3
Asthma ER Admissions	86.8
High Blood Pressure	48.4
Cancer (excluding skin)	27.6
Asthma	83.3
Coronary Heart Disease	63.8
Chronic Obstructive Pulmonary Disease	79.3
Diagnosed Diabetes	70.5
Life Expectancy at Birth	82.1

Cognitively Disabled	82.5
Physically Disabled	45.1
Heart Attack ER Admissions	72.6
Mental Health Not Good	85.8
Chronic Kidney Disease	64.9
Obesity	83.0
Pedestrian Injuries	88.4
Physical Health Not Good	82.3
Stroke	75.8
Health Risk Behaviors	—
Binge Drinking	71.2
Current Smoker	89.0
No Leisure Time for Physical Activity	76.7
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	8.1
Elderly	42.0
English Speaking	52.7
Foreign-born	62.2
Outdoor Workers	62.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	51.8
Traffic Density	58.4
Traffic Access	72.9
Other Indices	—
Hardship	19.2
Other Decision Support	—

2016 Voting	83.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	50.0
Healthy Places Index Score for Project Location (b)	95.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Operations: Hearths	No hearths.
Operations: Energy Use	No natural gas in new residential unit build out.
Characteristics: Utility Information	SVP Residential = 0 lb/MWh.

19-217 ECR Precise Plan New Residential, Nat Gas & Hearths 2030 Detailed Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	19-217 ECR Precise Plan New Residential, Nat Gas & Hearths 2030
Operational Year	2030
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	32.8
Location	El Camino Real, Santa Clara, CA, USA
County	Santa Clara
City	Santa Clara
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1762
EDFZ	1
Electric Utility	Silicon Valley Power
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	4,392	Dwelling Unit	116	4,216,320	0.00	—	13,132	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	193	91.5	699	5.00	106	111	4.93	26.9	31.9	185,525
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	168	95.3	434	4.88	106	111	4.84	26.9	31.8	178,394
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	173	49.7	505	1.49	98.9	100	1.44	25.1	26.5	120,761
Annual (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	31.6	9.07	92.1	0.27	18.0	18.3	0.26	4.58	4.84	19,993

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	61.4	36.0	427	0.59	106	107	0.55	26.9	27.5	109,797
Area	131	45.7	268	3.62	—	3.62	3.59	—	3.59	55,749
Energy	0.57	9.76	4.15	0.79	—	0.79	0.79	—	0.79	12,510
Water	—	—	—	—	—	—	—	—	—	1,315

Waste	—	—	—	—	—	—	—	—	—	6,124
Refrig.	—	—	—	—	—	—	—	—	—	30.2
Total	193	91.5	699	5.00	106	111	4.93	26.9	31.9	185,525
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	58.8	42.2	411	0.59	106	107	0.55	26.9	27.5	103,335
Area	109	43.3	18.4	3.50	—	3.50	3.50	—	3.50	55,081
Energy	0.57	9.76	4.15	0.79	—	0.79	0.79	—	0.79	12,510
Water	—	—	—	—	—	—	—	—	—	1,315
Waste	—	—	—	—	—	—	—	—	—	6,124
Refrig.	—	—	—	—	—	—	—	—	—	30.2
Total	168	95.3	434	4.88	106	111	4.84	26.9	31.8	178,394
Average Daily	—	—	—	—	—	—	—	—	—	—
Mobile	55.3	37.7	377	0.56	98.9	99.4	0.52	25.1	25.6	99,095
Area	117	2.22	124	0.14	—	0.14	0.13	—	0.13	1,688
Energy	0.57	9.76	4.15	0.79	—	0.79	0.79	—	0.79	12,510
Water	—	—	—	—	—	—	—	—	—	1,315
Waste	—	—	—	—	—	—	—	—	—	6,124
Refrig.	—	—	—	—	—	—	—	—	—	30.2
Total	173	49.7	505	1.49	98.9	100	1.44	25.1	26.5	120,761
Annual	—	—	—	—	—	—	—	—	—	—
Mobile	10.1	6.88	68.8	0.10	18.0	18.1	0.10	4.58	4.67	16,406
Area	21.4	0.40	22.6	0.03	—	0.03	0.02	—	0.02	279
Energy	0.10	1.78	0.76	0.14	—	0.14	0.14	—	0.14	2,071
Water	—	—	—	—	—	—	—	—	—	218
Waste	—	—	—	—	—	—	—	—	—	1,014
Refrig.	—	—	—	—	—	—	—	—	—	5.00
Total	31.6	9.07	92.1	0.27	18.0	18.3	0.26	4.58	4.84	19,993

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	61.4	36.0	427	0.59	106	107	0.55	26.9	27.5	109,797
Total	61.4	36.0	427	0.59	106	107	0.55	26.9	27.5	109,797
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	58.8	42.2	411	0.59	106	107	0.55	26.9	27.5	103,335
Total	58.8	42.2	411	0.59	106	107	0.55	26.9	27.5	103,335
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	10.1	6.88	68.8	0.10	18.0	18.1	0.10	4.58	4.67	16,406
Total	10.1	6.88	68.8	0.10	18.0	18.1	0.10	4.58	4.67	16,406

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	82.8

Total	—	—	—	—	—	—	—	—	—	82.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	82.8
Total	—	—	—	—	—	—	—	—	—	82.8
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	13.7
Total	—	—	—	—	—	—	—	—	—	13.7

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.57	9.76	4.15	0.79	—	0.79	0.79	—	0.79	12,427
Total	0.57	9.76	4.15	0.79	—	0.79	0.79	—	0.79	12,427
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.57	9.76	4.15	0.79	—	0.79	0.79	—	0.79	12,427
Total	0.57	9.76	4.15	0.79	—	0.79	0.79	—	0.79	12,427
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.10	1.78	0.76	0.14	—	0.14	0.14	—	0.14	2,057
Total	0.10	1.78	0.76	0.14	—	0.14	0.14	—	0.14	2,057

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Hearths	2.54	43.3	18.4	3.50	—	3.50	3.50	—	3.50	55,081
Consumer Products	90.2	—	—	—	—	—	—	—	—	—
Architectural Coatings	16.3	—	—	—	—	—	—	—	—	—
Landscape Equipment	21.6	2.33	250	0.11	—	0.11	0.09	—	0.09	669
Total	131	45.7	268	3.62	—	3.62	3.59	—	3.59	55,749
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Hearths	2.54	43.3	18.4	3.50	—	3.50	3.50	—	3.50	55,081
Consumer Products	90.2	—	—	—	—	—	—	—	—	—
Architectural Coatings	16.3	—	—	—	—	—	—	—	—	—
Total	109	43.3	18.4	3.50	—	3.50	3.50	—	3.50	55,081
Annual	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	0.20	0.08	0.02	—	0.02	0.02	—	0.02	225
Consumer Products	16.5	—	—	—	—	—	—	—	—	—
Architectural Coatings	2.97	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.94	0.21	22.5	0.01	—	0.01	0.01	—	0.01	54.6
Total	21.4	0.40	22.6	0.03	—	0.03	0.02	—	0.02	279

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	1,315
Total	—	—	—	—	—	—	—	—	—	1,315
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	1,315
Total	—	—	—	—	—	—	—	—	—	1,315
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	218
Total	—	—	—	—	—	—	—	—	—	218

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	6,124
Total	—	—	—	—	—	—	—	—	—	6,124

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	6,124
Total	—	—	—	—	—	—	—	—	—	6,124
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	1,014
Total	—	—	—	—	—	—	—	—	—	1,014

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	30.2
Total	—	—	—	—	—	—	—	—	—	30.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	30.2
Total	—	—	—	—	—	—	—	—	—	30.2
Annual	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	5.00
Total	—	—	—	—	—	—	—	—	—	5.00

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	23,892	21,565	17,963	8,290,214	150,664	135,985	113,275	52,277,262

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	2240
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	2152

Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
8538048	2,846,016	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	14,983,092	0.00	0.0330	0.0040	38,667,480

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	159,282,029	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	3,248	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	11.8	annual days of extreme heat
Extreme Precipitation	2.65	annual days with precipitation above 20 mm

Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A

Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	16.8
AQ-PM	19.3
AQ-DPM	79.0
Drinking Water	50.2
Lead Risk Housing	56.0
Pesticides	0.00
Toxic Releases	36.7
Traffic	74.9
Effect Indicators	—

CleanUp Sites	94.0
Groundwater	92.1
Haz Waste Facilities/Generators	85.7
Impaired Water Bodies	23.9
Solid Waste	22.1
Sensitive Population	—
Asthma	19.3
Cardio-vascular	28.8
Low Birth Weights	84.2
Socioeconomic Factor Indicators	—
Education	41.9
Housing	42.8
Linguistic	62.7
Poverty	33.2
Unemployment	11.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	84.39625305
Employed	98.6141409
Median HI	89.1954318
Education	—
Bachelor's or higher	78.44219171
High school enrollment	100
Preschool enrollment	90.77377133
Transportation	—

Auto Access	75.69613756
Active commuting	53.81752855
Social	—
2-parent households	94.44373155
Voting	87.51443603
Neighborhood	—
Alcohol availability	69.63941999
Park access	54.22815347
Retail density	53.77903247
Supermarket access	42.46118311
Tree canopy	78.73732837
Housing	—
Homeownership	77.35146927
Housing habitability	71.4744001
Low-inc homeowner severe housing cost burden	64.71192095
Low-inc renter severe housing cost burden	44.34749134
Uncrowded housing	44.45014757
Health Outcomes	—
Insured adults	85.29449506
Arthritis	54.3
Asthma ER Admissions	86.8
High Blood Pressure	48.4
Cancer (excluding skin)	27.6
Asthma	83.3
Coronary Heart Disease	63.8
Chronic Obstructive Pulmonary Disease	79.3
Diagnosed Diabetes	70.5
Life Expectancy at Birth	82.1

Cognitively Disabled	82.5
Physically Disabled	45.1
Heart Attack ER Admissions	72.6
Mental Health Not Good	85.8
Chronic Kidney Disease	64.9
Obesity	83.0
Pedestrian Injuries	88.4
Physical Health Not Good	82.3
Stroke	75.8
Health Risk Behaviors	—
Binge Drinking	71.2
Current Smoker	89.0
No Leisure Time for Physical Activity	76.7
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	8.1
Elderly	42.0
English Speaking	52.7
Foreign-born	62.2
Outdoor Workers	62.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	51.8
Traffic Density	58.4
Traffic Access	72.9
Other Indices	—
Hardship	19.2
Other Decision Support	—

2016 Voting	83.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	50.0
Healthy Places Index Score for Project Location (b)	95.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	SVP Residential = 0 lb/MWh.

19-217 ECR Specific Plan Retail 2030 SVP Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	19-217 ECR Specific Plan Retail 2030 SVP
Operational Year	2030
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	32.8
Location	El Camino Real, Santa Clara, CA, USA
County	Santa Clara
City	Santa Clara
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1762
EDFZ	1
Electric Utility	Silicon Valley Power
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Strip Mall	1,976	1000sqft	45.4	1,976,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	293	151	1,868	2.89	461	464	2.68	117	120	490,124
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	270	175	1,682	2.73	461	464	2.57	117	119	461,624
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	256	152	1,537	2.60	413	416	2.43	105	107	427,882
Annual (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	46.7	27.7	281	0.47	75.4	75.9	0.44	19.1	19.6	70,841

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	231	147	1,780	2.50	461	463	2.34	117	119	473,452
Area	62.1	0.72	85.9	0.15	—	0.15	0.12	—	0.12	355
Energy	0.17	3.02	2.54	0.23	—	0.23	0.23	—	0.23	10,787
Water	—	—	—	—	—	—	—	—	—	1,605

Waste	—	—	—	—	—	—	—	—	—	3,912
Refrig.	—	—	—	—	—	—	—	—	—	12.3
Total	293	151	1,868	2.89	461	464	2.68	117	120	490,124
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	222	172	1,680	2.50	461	463	2.34	117	119	445,307
Area	47.9	—	—	—	—	—	—	—	—	—
Energy	0.17	3.02	2.54	0.23	—	0.23	0.23	—	0.23	10,787
Water	—	—	—	—	—	—	—	—	—	1,605
Waste	—	—	—	—	—	—	—	—	—	3,912
Refrig.	—	—	—	—	—	—	—	—	—	12.3
Total	270	175	1,682	2.73	461	464	2.57	117	119	461,624
Average Daily	—	—	—	—	—	—	—	—	—	—
Mobile	201	148	1,493	2.29	413	415	2.14	105	107	411,390
Area	54.9	0.36	42.4	0.08	—	0.08	0.06	—	0.06	175
Energy	0.17	3.02	2.54	0.23	—	0.23	0.23	—	0.23	10,787
Water	—	—	—	—	—	—	—	—	—	1,605
Waste	—	—	—	—	—	—	—	—	—	3,912
Refrig.	—	—	—	—	—	—	—	—	—	12.3
Total	256	152	1,537	2.60	413	416	2.43	105	107	427,882
Annual	—	—	—	—	—	—	—	—	—	—
Mobile	36.6	27.1	272	0.42	75.4	75.8	0.39	19.1	19.5	68,110
Area	10.0	0.07	7.73	0.01	—	0.01	0.01	—	0.01	29.0
Energy	0.03	0.55	0.46	0.04	—	0.04	0.04	—	0.04	1,786
Water	—	—	—	—	—	—	—	—	—	266
Waste	—	—	—	—	—	—	—	—	—	648
Refrig.	—	—	—	—	—	—	—	—	—	2.04
Total	46.7	27.7	281	0.47	75.4	75.9	0.44	19.1	19.6	70,841

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	231	147	1,780	2.50	461	463	2.34	117	119	473,452
Total	231	147	1,780	2.50	461	463	2.34	117	119	473,452
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	222	172	1,680	2.50	461	463	2.34	117	119	445,307
Total	222	172	1,680	2.50	461	463	2.34	117	119	445,307
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	36.6	27.1	272	0.42	75.4	75.8	0.39	19.1	19.5	68,110
Total	36.6	27.1	272	0.42	75.4	75.8	0.39	19.1	19.5	68,110

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	7,168
Total	—	—	—	—	—	—	—	—	—	7,168
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—

Strip Mall	—	—	—	—	—	—	—	—	—	7,168
Total	—	—	—	—	—	—	—	—	—	7,168
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	1,187
Total	—	—	—	—	—	—	—	—	—	1,187

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	0.17	3.02	2.54	0.23	—	0.23	0.23	—	0.23	3,619
Total	0.17	3.02	2.54	0.23	—	0.23	0.23	—	0.23	3,619
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	0.17	3.02	2.54	0.23	—	0.23	0.23	—	0.23	3,619
Total	0.17	3.02	2.54	0.23	—	0.23	0.23	—	0.23	3,619
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	0.03	0.55	0.46	0.04	—	0.04	0.04	—	0.04	599
Total	0.03	0.55	0.46	0.04	—	0.04	0.04	—	0.04	599

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Consumer Products	42.3	—	—	—	—	—	—	—	—	—

Architectural Coatings	5.65	—	—	—	—	—	—	—	—	—
Landscape Equipment	14.1	0.72	85.9	0.15	—	0.15	0.12	—	0.12	355
Total	62.1	0.72	85.9	0.15	—	0.15	0.12	—	0.12	355
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Consumer Products	42.3	—	—	—	—	—	—	—	—	—
Architectural Coatings	5.65	—	—	—	—	—	—	—	—	—
Total	47.9	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Consumer Products	7.72	—	—	—	—	—	—	—	—	—
Architectural Coatings	1.03	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.27	0.07	7.73	0.01	—	0.01	0.01	—	0.01	29.0
Total	10.0	0.07	7.73	0.01	—	0.01	0.01	—	0.01	29.0

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	1,605
Total	—	—	—	—	—	—	—	—	—	1,605
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—

Strip Mall	—	—	—	—	—	—	—	—	—	1,605
Total	—	—	—	—	—	—	—	—	—	1,605
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	266
Total	—	—	—	—	—	—	—	—	—	266

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	3,912
Total	—	—	—	—	—	—	—	—	—	3,912
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	3,912
Total	—	—	—	—	—	—	—	—	—	3,912
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	648
Total	—	—	—	—	—	—	—	—	—	648

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Strip Mall	—	—	—	—	—	—	—	—	—	12.3
Total	—	—	—	—	—	—	—	—	—	12.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	12.3
Total	—	—	—	—	—	—	—	—	—	12.3
Annual	—	—	—	—	—	—	—	—	—	—
Strip Mall	—	—	—	—	—	—	—	—	—	2.04
Total	—	—	—	—	—	—	—	—	—	2.04

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Strip Mall	87,576	83,071	40,370	29,268,950	653,559	619,937	301,268	218,426,379

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	2,964,000	988,000	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Strip Mall	16,884,867	153	0.0330	0.0040	11,260,382

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Strip Mall	146,367,302	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Strip Mall	2,075	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit

Temperature and Extreme Heat	11.8	annual days of extreme heat
Extreme Precipitation	2.65	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	16.8
AQ-PM	19.3
AQ-DPM	79.0
Drinking Water	50.2
Lead Risk Housing	56.0
Pesticides	0.00
Toxic Releases	36.7

Traffic	74.9
Effect Indicators	—
CleanUp Sites	94.0
Groundwater	92.1
Haz Waste Facilities/Generators	85.7
Impaired Water Bodies	23.9
Solid Waste	22.1
Sensitive Population	—
Asthma	19.3
Cardio-vascular	28.8
Low Birth Weights	84.2
Socioeconomic Factor Indicators	—
Education	41.9
Housing	42.8
Linguistic	62.7
Poverty	33.2
Unemployment	11.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	84.39625305
Employed	98.6141409
Median HI	89.1954318
Education	—
Bachelor's or higher	78.44219171
High school enrollment	100

Preschool enrollment	90.77377133
Transportation	—
Auto Access	75.69613756
Active commuting	53.81752855
Social	—
2-parent households	94.44373155
Voting	87.51443603
Neighborhood	—
Alcohol availability	69.63941999
Park access	54.22815347
Retail density	53.77903247
Supermarket access	42.46118311
Tree canopy	78.73732837
Housing	—
Homeownership	77.35146927
Housing habitability	71.4744001
Low-inc homeowner severe housing cost burden	64.71192095
Low-inc renter severe housing cost burden	44.34749134
Uncrowded housing	44.45014757
Health Outcomes	—
Insured adults	85.29449506
Arthritis	54.3
Asthma ER Admissions	86.8
High Blood Pressure	48.4
Cancer (excluding skin)	27.6
Asthma	83.3
Coronary Heart Disease	63.8
Chronic Obstructive Pulmonary Disease	79.3

Diagnosed Diabetes	70.5
Life Expectancy at Birth	82.1
Cognitively Disabled	82.5
Physically Disabled	45.1
Heart Attack ER Admissions	72.6
Mental Health Not Good	85.8
Chronic Kidney Disease	64.9
Obesity	83.0
Pedestrian Injuries	88.4
Physical Health Not Good	82.3
Stroke	75.8
Health Risk Behaviors	—
Binge Drinking	71.2
Current Smoker	89.0
No Leisure Time for Physical Activity	76.7
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	8.1
Elderly	42.0
English Speaking	52.7
Foreign-born	62.2
Outdoor Workers	62.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	51.8
Traffic Density	58.4
Traffic Access	72.9
Other Indices	—

Hardship	19.2
Other Decision Support	—
2016 Voting	83.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	50.0
Healthy Places Index Score for Project Location (b)	95.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Attachment 2: Health Risk Assessment Information

CT-EMFAC2021 Emissions Factors for Santa Clara County 2040

File Name: El Camino Real SP - Santa Clara (SF) - 2040 - Annual.EF
CT-EMFAC2021 Version: 1.0.2.0
Run Date: 12/11/2024 10:44
Area: Santa Clara (SF)
Analysis Year: 2040
Season: Annual

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.017	0.285	0.349
Truck 2	0.018	0.714	0.024
Non-Truck	0.965	0.005	0.893

Road Type: Major/Collector
Silt Loading Factor: CARB 0.032 g/m2
Precipitation Correction: CARB P = 63 days N = 365 days

Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2.5	0.003688	0.002401	0.001642	0.001187	0.000901	0.000725	0.000622	0.00057	0.00056	0.000583	0.00064	0.00073	0.000857	0.000901	0.000901
TOG	0.066145	0.042121	0.027847	0.019653	0.014744	0.011659	0.009679	0.008426	0.00769	0.007364	0.007404	0.007861	0.008774	0.009417	0.009418
Diesel PM	0.00035	0.000315	0.000258	0.000217	0.000185	0.000168	0.000164	0.000175	0.000199	0.000238	0.00029	0.000356	0.000433	0.000434	0.000434

Fleet Average Running Loss Emission Factors (grams/veh-hour)

Pollutant Name	Emission Factor
TOG	0.75436

Fleet Average Tire Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.002101

Fleet Average Brake Wear Factors (grams/veh-mile)

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2.5	0.003333	0.003876	0.004411	0.004939	0.005222	0.005304	0.005316	0.004825	0.003802	0.002795	0.002163	0.001862	0.001561	0.001561	0.001561

Fleet Average Road Dust Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.015494

END

El Camino Real from West Boundary to San Tomas Expy 2040 Traffic Emissions and Health Risk Calculations

Analysis Year = ***2040***

Vehicle Type	2040 Caltrans Vehicles (veh/day)	2040 Vehicles (veh/day)
Total	**35,000**	**35,000**

Increase From 2040	1.00
Vehicles/Direction	**17,500**
Avg Vehicles/Hour/Direction	729

Traffic Data Year = ***2040***

El Camino Real Specific Plan TIA 2019 & 2024		Total	Trucks by Axle			
	AADT Total	Truck	2	3	4	5
El Camino Real - From Lawrence Expy to San Tomas Expy	35,000	1,229	968	136	38	86
			78.81%	11.07%	3.10%	7.02%
Percent of Total Vehicles		3.51%	2.77%	0.39%	0.11%	0.25%

Traffic Increase per Year (%) = *1.00%*

1,229	Trucks	100%
2.8%	MDT	
0.7%	HDT	
3.5%	Total	
96.5%	Other	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - El Camino Real 35K
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
DPM_EB_ECR	El Camino Real Eastbound	EB	3	2812.9	1.75	17.0	55.7	3.4	35	17,500	47,743	513,899	1.216E-09	8.967E-10	6.8	3.16
DPM_WB_ECR	El Camino Real Westbound	WB	3	2814.1	1.75	17.0	55.7	3.4	35	17,500	47,763	514,118	1.216E-09	8.967E-10	6.8	3.16
									Total	35,000						

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00016			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and DPM Emissions - DPM_EB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	4.08%	714	5.68E-05	9	6.55%	1146	9.12E-05	17	5.64%	986	7.85E-05
2	2.74%	479	3.81E-05	10	7.51%	1315	1.05E-04	18	3.17%	554	4.41E-05
3	2.90%	507	4.04E-05	11	6.44%	1127	8.98E-05	19	2.20%	385	3.07E-05
4	3.11%	545	4.34E-05	12	6.98%	1221	9.72E-05	20	0.86%	150	1.20E-05
5	2.09%	366	2.92E-05	13	6.28%	1099	8.75E-05	21	2.95%	517	4.11E-05
6	3.22%	564	4.49E-05	14	6.17%	1080	8.60E-05	22	4.19%	733	5.83E-05
7	6.01%	1052	8.38E-05	15	5.26%	921	7.33E-05	23	2.68%	470	3.74E-05
8	4.35%	761	6.06E-05	16	3.76%	658	5.24E-05	24	0.86%	150	1.20E-05
								Total		17,500	

2040 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_WB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	4.08%	714	5.69E-05	9	6.55%	1146	9.13E-05	17	5.64%	986	7.86E-05
2	2.74%	479	3.82E-05	10	7.51%	1315	1.05E-04	18	3.17%	554	4.41E-05
3	2.90%	507	4.04E-05	11	6.44%	1127	8.98E-05	19	2.20%	385	3.07E-05
4	3.11%	545	4.34E-05	12	6.98%	1221	9.73E-05	20	0.86%	150	1.20E-05
5	2.09%	366	2.92E-05	13	6.28%	1099	8.75E-05	21	2.95%	517	4.12E-05
6	3.22%	564	4.49E-05	14	6.17%	1080	8.61E-05	22	4.19%	733	5.84E-05
7	6.01%	1052	8.38E-05	15	5.26%	921	7.33E-05	23	2.68%	470	3.74E-05
8	4.35%	761	6.06E-05	16	3.76%	658	5.24E-05	24	0.86%	150	1.20E-05
								Total		17,500	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - El Camino Real 35K
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
PM25_EB_ECR	El Camino Real Eastbound	EB	3	2812.9	1.75	17.0	56	1.3	35	17,500	47,743	513,899	4.612E-09	3.401E-09	2.6	1.21
PM25_WB_ECR	El Camino Real Westbound	WB	3	2814.1	1.75	17.0	56	1.3	35	17,500	47,763	514,118	4.612E-09	3.401E-09	2.6	1.21
									Total	35,000						

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.000622			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and PM2.5 Emissions - PM25_EB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	201	6.06E-05	9	7.12%	1246	3.76E-04	17	7.40%	1294	3.91E-04
2	0.41%	72	2.18E-05	10	4.38%	767	2.32E-04	18	8.19%	1433	4.33E-04
3	0.40%	69	2.09E-05	11	4.66%	815	2.46E-04	19	5.70%	998	3.01E-04
4	0.25%	43	1.31E-05	12	5.89%	1031	3.11E-04	20	4.28%	749	2.26E-04
5	0.49%	86	2.59E-05	13	6.15%	1077	3.25E-04	21	3.26%	570	1.72E-04
6	0.89%	156	4.72E-05	14	6.04%	1056	3.19E-04	22	3.30%	577	1.74E-04
7	3.78%	662	2.00E-04	15	7.02%	1229	3.71E-04	23	2.46%	431	1.30E-04
8	7.77%	1359	4.10E-04	16	7.15%	1251	3.78E-04	24	1.87%	327	9.88E-05
								Total		17,500	

2040 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM25_WB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	201	6.07E-05	9	7.12%	1246	3.76E-04	17	7.40%	1294	3.91E-04
2	0.41%	72	2.18E-05	10	4.38%	767	2.32E-04	18	8.19%	1433	4.33E-04
3	0.40%	69	2.10E-05	11	4.66%	815	2.46E-04	19	5.70%	998	3.01E-04
4	0.25%	43	1.31E-05	12	5.89%	1031	3.11E-04	20	4.28%	749	2.26E-04
5	0.49%	86	2.59E-05	13	6.15%	1077	3.25E-04	21	3.26%	570	1.72E-04
6	0.89%	156	4.73E-05	14	6.04%	1056	3.19E-04	22	3.30%	577	1.74E-04
7	3.78%	662	2.00E-04	15	7.02%	1229	3.71E-04	23	2.46%	431	1.30E-04
8	7.77%	1359	4.11E-04	16	7.15%	1251	3.78E-04	24	1.87%	327	9.88E-05
								Total		17,500	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - El Camino Real 35K
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEXH_EB_ECR	El Camino Real Eastbound	EB	3	2812.9	1.75	17.0	56	1.3	35	17,500	47,743	513,899	7.177E-08	5.292E-08	2.6	1.21
TEXH_WB_ECR	El Camino Real Westbound	WB	3	2814.1	1.75	17.0	56	1.3	35	17,500	47,763	514,118	7.177E-08	5.292E-08	2.6	1.21
									Total	35,000						

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00968			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_EB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	201	9.44E-04	9	7.12%	1246	5.85E-03	17	7.40%	1294	6.08E-03
2	0.41%	72	3.40E-04	10	4.38%	767	3.61E-03	18	8.19%	1433	6.73E-03
3	0.40%	69	3.26E-04	11	4.66%	815	3.83E-03	19	5.70%	998	4.69E-03
4	0.25%	43	2.03E-04	12	5.89%	1031	4.84E-03	20	4.28%	749	3.52E-03
5	0.49%	86	4.04E-04	13	6.15%	1077	5.06E-03	21	3.26%	570	2.68E-03
6	0.89%	156	7.35E-04	14	6.04%	1056	4.96E-03	22	3.30%	577	2.71E-03
7	3.78%	662	3.11E-03	15	7.02%	1229	5.77E-03	23	2.46%	431	2.03E-03
8	7.77%	1359	6.39E-03	16	7.15%	1251	5.88E-03	24	1.87%	327	1.54E-03
								Total		17,500	

2040 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_WB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	201	9.44E-04	9	7.12%	1246	5.86E-03	17	7.40%	1294	6.09E-03
2	0.41%	72	3.40E-04	10	4.38%	767	3.61E-03	18	8.19%	1433	6.74E-03
3	0.40%	69	3.26E-04	11	4.66%	815	3.83E-03	19	5.70%	998	4.69E-03
4	0.25%	43	2.03E-04	12	5.89%	1031	4.85E-03	20	4.28%	749	3.52E-03
5	0.49%	86	4.04E-04	13	6.15%	1077	5.06E-03	21	3.26%	570	2.68E-03
6	0.89%	156	7.35E-04	14	6.04%	1056	4.97E-03	22	3.30%	577	2.71E-03
7	3.78%	662	3.11E-03	15	7.02%	1229	5.78E-03	23	2.46%	431	2.03E-03
8	7.77%	1359	6.39E-03	16	7.15%	1251	5.88E-03	24	1.87%	327	1.54E-03
								Total		17,500	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - El Camino Real 35K
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEVAP_EB_ECR	El Camino Real Eastbound	EB	3	2812.9	1.75	17.0	56	1.3	35	17,500	47,743	513,899	1.598E-07	1.178E-07	2.6	1.21
TEVAP_WB_ECR	El Camino Real Westbound	WB	3	2814.1	1.75	17.0	56	1.3	35	17,500	47,763	514,118	1.598E-07	1.178E-07	2.6	1.21
									Total	35,000						

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle per Hour (g/hour)	0.75436			
Emissions per Vehicle per Mile (g/VMT)	0.02155			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_EB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	201	2.10E-03	9	7.12%	1246	1.30E-02	17	7.40%	1294	1.35E-02
2	0.41%	72	7.56E-04	10	4.38%	767	8.03E-03	18	8.19%	1433	1.50E-02
3	0.40%	69	7.26E-04	11	4.66%	815	8.53E-03	19	5.70%	998	1.04E-02
4	0.25%	43	4.52E-04	12	5.89%	1031	1.08E-02	20	4.28%	749	7.84E-03
5	0.49%	86	8.99E-04	13	6.15%	1077	1.13E-02	21	3.26%	570	5.96E-03
6	0.89%	156	1.64E-03	14	6.04%	1056	1.11E-02	22	3.30%	577	6.04E-03
7	3.78%	662	6.93E-03	15	7.02%	1229	1.29E-02	23	2.46%	431	4.51E-03
8	7.77%	1359	1.42E-02	16	7.15%	1251	1.31E-02	24	1.87%	327	3.42E-03
								Total		17,500	

2040 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_WB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	201	2.10E-03	9	7.12%	1246	1.30E-02	17	7.40%	1294	1.36E-02
2	0.41%	72	7.56E-04	10	4.38%	767	8.03E-03	18	8.19%	1433	1.50E-02
3	0.40%	69	7.26E-04	11	4.66%	815	8.54E-03	19	5.70%	998	1.04E-02
4	0.25%	43	4.53E-04	12	5.89%	1031	1.08E-02	20	4.28%	749	7.84E-03
5	0.49%	86	8.99E-04	13	6.15%	1077	1.13E-02	21	3.26%	570	5.97E-03
6	0.89%	156	1.64E-03	14	6.04%	1056	1.11E-02	22	3.30%	577	6.05E-03
7	3.78%	662	6.93E-03	15	7.02%	1229	1.29E-02	23	2.46%	431	4.51E-03
8	7.77%	1359	1.42E-02	16	7.15%	1251	1.31E-02	24	1.87%	327	3.42E-03
								Total		17,500	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - El Camino Real 35K
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
FUG_EB_ECR	El Camino Real Eastbound	EB	3	2812.9	1.75	17.0	56	1.3	35	17,500	47,743	513,899	1.699E-07	1.253E-07	2.6	1.21
FUG_WB_ECR	El Camino Real Westbound	WB	3	2814.1	1.75	17.0	56	1.3	35	17,500	47,763	514,118	1.699E-07	1.253E-07	2.6	1.21
									Total	35,000						

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00210			
Brake Wear - Emissions per Vehicle (g/VMT)	0.00532			
Road Dust - Emissions per Vehicle (g/VMT)	0.01549			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02291			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_EB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	201	2.23E-03	9	7.12%	1246	1.39E-02	17	7.40%	1294	1.44E-02
2	0.41%	72	8.04E-04	10	4.38%	767	8.53E-03	18	8.19%	1433	1.59E-02
3	0.40%	69	7.71E-04	11	4.66%	815	9.07E-03	19	5.70%	998	1.11E-02
4	0.25%	43	4.81E-04	12	5.89%	1031	1.15E-02	20	4.28%	749	8.33E-03
5	0.49%	86	9.55E-04	13	6.15%	1077	1.20E-02	21	3.26%	570	6.34E-03
6	0.89%	156	1.74E-03	14	6.04%	1056	1.17E-02	22	3.30%	577	6.42E-03
7	3.78%	662	7.36E-03	15	7.02%	1229	1.37E-02	23	2.46%	431	4.80E-03
8	7.77%	1359	1.51E-02	16	7.15%	1251	1.39E-02	24	1.87%	327	3.64E-03
								Total		17,500	

2040 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_WB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	201	2.23E-03	9	7.12%	1246	1.39E-02	17	7.40%	1294	1.44E-02
2	0.41%	72	8.04E-04	10	4.38%	767	8.54E-03	18	8.19%	1433	1.59E-02
3	0.40%	69	7.72E-04	11	4.66%	815	9.07E-03	19	5.70%	998	1.11E-02
4	0.25%	43	4.81E-04	12	5.89%	1031	1.15E-02	20	4.28%	749	8.33E-03
5	0.49%	86	9.56E-04	13	6.15%	1077	1.20E-02	21	3.26%	570	6.34E-03
6	0.89%	156	1.74E-03	14	6.04%	1056	1.18E-02	22	3.30%	577	6.43E-03
7	3.78%	662	7.37E-03	15	7.02%	1229	1.37E-02	23	2.46%	431	4.80E-03
8	7.77%	1359	1.51E-02	16	7.15%	1251	1.39E-02	24	1.87%	327	3.64E-03
								Total		17,500	

El Camino Real Specific Plan, Santa Clara, CA - El Camino Real 35k ADT Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
Off-Site 1st (1.5m) Floor Receptor Heights

Emission Year	2040
Receptor Information	Maximum Distance Off-Site Receptor
Number of Receptors	164
Receptor Height	1st (1.5m) Floors
Receptor Distances	304.8 meter line spacing

Meteorological Conditions

BAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Off-Site Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3) DPM	Exhaust TOG	Evaporative TOG	
2013-2017	0.0013	0.0974	0.2168	Southside - 30.48 meters
2013-2017	0.0017	0.1026	0.2284	Northside - 15.24 meters

Off-Site PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3) Total PM2.5	Fugitive PM2.5	Vehicle PM2.5	
2013-2017	0.2367	0.2305	0.0063	Southside - 30.48 meters
2013-2017	0.2494	0.2428	0.0066	Northside - 15.24 meters

El Camino Real Specific Plan, Santa Clara, CA - El Camino Real 35k ADT Cancer Risk & PM2.5
Impacts at Off-Site 1st Floor Receptors - 1.5m receptor heights - Southside 30.48m
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity 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: C_{air} = 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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2040	10	0.0013	0.0974	0.2168	0.017	0.008	0.0010	0.03
1	1	0 - 1	2040	10	0.0013	0.0974	0.2168	0.207	0.091	0.0120	0.31
2	1	1 - 2	2041	10	0.0013	0.0974	0.2168	0.207	0.091	0.0120	0.31
3	1	2 - 3	2042	3	0.0013	0.0974	0.2168	0.033	0.014	0.0019	0.05
4	1	3 - 4	2043	3	0.0013	0.0974	0.2168	0.033	0.014	0.0019	0.05
5	1	4 - 5	2044	3	0.0013	0.0974	0.2168	0.033	0.014	0.0019	0.05
6	1	5 - 6	2045	3	0.0013	0.0974	0.2168	0.033	0.014	0.0019	0.05
7	1	6 - 7	2046	3	0.0013	0.0974	0.2168	0.033	0.014	0.0019	0.05
8	1	7 - 8	2047	3	0.0013	0.0974	0.2168	0.033	0.014	0.0019	0.05
9	1	8 - 9	2048	3	0.0013	0.0974	0.2168	0.033	0.014	0.0019	0.05
10	1	9 - 10	2049	3	0.0013	0.0974	0.2168	0.033	0.014	0.0019	0.05
11	1	10 - 11	2050	3	0.0013	0.0974	0.2168	0.033	0.014	0.0019	0.05
12	1	11 - 12	2051	3	0.0013	0.0974	0.2168	0.033	0.014	0.0019	0.05
13	1	12 - 13	2052	3	0.0013	0.0974	0.2168	0.033	0.014	0.0019	0.05
14	1	13 - 14	2053	3	0.0013	0.0974	0.2168	0.033	0.014	0.0019	0.05
15	1	14 - 15	2054	3	0.0013	0.0974	0.2168	0.033	0.014	0.0019	0.05
16	1	15 - 16	2055	3	0.0013	0.0974	0.2168	0.033	0.014	0.0019	0.05
17	1	16-17	2056	1	0.0013	0.0974	0.2168	0.004	0.002	0.0002	0.01
18	1	17-18	2057	1	0.0013	0.0974	0.2168	0.004	0.002	0.0002	0.01
19	1	18-19	2058	1	0.0013	0.0974	0.2168	0.004	0.002	0.0002	0.01
20	1	19-20	2059	1	0.0013	0.0974	0.2168	0.004	0.002	0.0002	0.01
21	1	20-21	2060	1	0.0013	0.0974	0.2168	0.004	0.002	0.0002	0.01
22	1	21-22	2061	1	0.0013	0.0974	0.2168	0.004	0.002	0.0002	0.01
23	1	22-23	2062	1	0.0013	0.0974	0.2168	0.004	0.002	0.0002	0.01
24	1	23-24	2063	1	0.0013	0.0974	0.2168	0.004	0.002	0.0002	0.01
25	1	24-25	2064	1	0.0013	0.0974	0.2168	0.004	0.002	0.0002	0.01
26	1	25-26	2065	1	0.0013	0.0974	0.2168	0.004	0.002	0.0002	0.01
27	1	26-27	2066	1	0.0013	0.0974	0.2168	0.004	0.002	0.0002	0.01
28	1	27-28	2067	1	0.0013	0.0974	0.2168	0.004	0.002	0.0002	0.01
29	1	28-29	2068	1	0.0013	0.0974	0.2168	0.004	0.002	0.0002	0.01
30	1	29-30	2069	1	0.0013	0.0974	0.2168	0.004	0.002	0.0002	0.01
Total Increased Cancer Risk								0.94	0.414	0.054	**1.41**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0003	0.23	0.24

* Third trimester of pregnancy

El Camino Real Specific Plan, Santa Clara, CA - El Camino Real 35k ADT Cancer Risk & PM2.5
Impacts at Off-Site 1st Floor Receptors - 1.5m receptor heights - Northside 15.24m
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity 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: C_{air} = 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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2040	10	0.0017	0.1026	0.2284	0.023	0.008	0.0010	0.03
1	1	0 - 1	2040	10	0.0017	0.1026	0.2284	0.276	0.096	0.0126	0.38
2	1	1 - 2	2041	10	0.0017	0.1026	0.2284	0.276	0.096	0.0126	0.38
3	1	2 - 3	2042	3	0.0017	0.1026	0.2284	0.043	0.015	0.0020	0.06
4	1	3 - 4	2043	3	0.0017	0.1026	0.2284	0.043	0.015	0.0020	0.06
5	1	4 - 5	2044	3	0.0017	0.1026	0.2284	0.043	0.015	0.0020	0.06
6	1	5 - 6	2045	3	0.0017	0.1026	0.2284	0.043	0.015	0.0020	0.06
7	1	6 - 7	2046	3	0.0017	0.1026	0.2284	0.043	0.015	0.0020	0.06
8	1	7 - 8	2047	3	0.0017	0.1026	0.2284	0.043	0.015	0.0020	0.06
9	1	8 - 9	2048	3	0.0017	0.1026	0.2284	0.043	0.015	0.0020	0.06
10	1	9 - 10	2049	3	0.0017	0.1026	0.2284	0.043	0.015	0.0020	0.06
11	1	10 - 11	2050	3	0.0017	0.1026	0.2284	0.043	0.015	0.0020	0.06
12	1	11 - 12	2051	3	0.0017	0.1026	0.2284	0.043	0.015	0.0020	0.06
13	1	12 - 13	2052	3	0.0017	0.1026	0.2284	0.043	0.015	0.0020	0.06
14	1	13 - 14	2053	3	0.0017	0.1026	0.2284	0.043	0.015	0.0020	0.06
15	1	14 - 15	2054	3	0.0017	0.1026	0.2284	0.043	0.015	0.0020	0.06
16	1	15 - 16	2055	3	0.0017	0.1026	0.2284	0.043	0.015	0.0020	0.06
17	1	16-17	2056	1	0.0017	0.1026	0.2284	0.005	0.002	0.0002	0.01
18	1	17-18	2057	1	0.0017	0.1026	0.2284	0.005	0.002	0.0002	0.01
19	1	18-19	2058	1	0.0017	0.1026	0.2284	0.005	0.002	0.0002	0.01
20	1	19-20	2059	1	0.0017	0.1026	0.2284	0.005	0.002	0.0002	0.01
21	1	20-21	2060	1	0.0017	0.1026	0.2284	0.005	0.002	0.0002	0.01
22	1	21-22	2061	1	0.0017	0.1026	0.2284	0.005	0.002	0.0002	0.01
23	1	22-23	2062	1	0.0017	0.1026	0.2284	0.005	0.002	0.0002	0.01
24	1	23-24	2063	1	0.0017	0.1026	0.2284	0.005	0.002	0.0002	0.01
25	1	24-25	2064	1	0.0017	0.1026	0.2284	0.005	0.002	0.0002	0.01
26	1	25-26	2065	1	0.0017	0.1026	0.2284	0.005	0.002	0.0002	0.01
27	1	26-27	2066	1	0.0017	0.1026	0.2284	0.005	0.002	0.0002	0.01
28	1	27-28	2067	1	0.0017	0.1026	0.2284	0.005	0.002	0.0002	0.01
29	1	28-29	2068	1	0.0017	0.1026	0.2284	0.005	0.002	0.0002	0.01
30	1	29-30	2069	1	0.0017	0.1026	0.2284	0.005	0.002	0.0002	0.01
Total Increased Cancer Risk								1.25	0.436	0.057	**1.74**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.000	0.24	0.25

* Third trimester of pregnancy

El Camino Real from San Tomas Expy to Approx. Lincoln St 2040 Traffic Emissions and Health Risk Calculations

Analysis Year = ***2040***

Vehicle Type	2040 Caltrans Vehicles (veh/day)	2040 Vehicles (veh/day)
Total	**25,000**	**25,000**

Increase From 2040	1.00
Vehicles/Direction	**12,500**
Avg Vehicles/Hour/Direction	521

Traffic Data Year = ***2040***

El Camino Real Specific Plan TIA 2019 & 2024		Total	Trucks by Axle			
	AADT Total	Truck	2	3	4	5
El Camino Real - From San Tomas Expy to Approx. Lincoln St	25,000	878	692	97	27	62
			78.81%	11.07%	3.10%	7.02%
Percent of Total Vehicles		3.51%	2.77%	0.39%	0.11%	0.25%

Traffic Increase per Year (%) = *1.00%*

878	Trucks	100%
2.8%	MDT	
0.7%	HDT	
3.5%	Total	
96.5%	Other	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - El Camino Real 25K
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
DPM_EB_ECR	El Camino Real Eastbound	EB	3	1312.7	0.82	17.0	55.7	3.4	35	12,500	22,280	239,822	8.686E-10	6.405E-10	6.8	3.16
DPM_WB_ECR	El Camino Real Westbound	WB	3	1312.8	0.82	17.0	55.7	3.4	35	12,500	22,282	239,840	8.686E-10	6.405E-10	6.8	3.16
									Total	25,000						

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00016			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and DPM Emissions - DPM_EB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	4.08%	510	1.89E-05	9	6.55%	819	3.04E-05	17	5.64%	705	2.62E-05
2	2.74%	342	1.27E-05	10	7.51%	939	3.49E-05	18	3.17%	396	1.47E-05
3	2.90%	362	1.35E-05	11	6.44%	805	2.99E-05	19	2.20%	275	1.02E-05
4	3.11%	389	1.45E-05	12	6.98%	872	3.24E-05	20	0.86%	107	3.99E-06
5	2.09%	262	9.72E-06	13	6.28%	785	2.92E-05	21	2.95%	369	1.37E-05
6	3.22%	403	1.50E-05	14	6.17%	772	2.87E-05	22	4.19%	523	1.94E-05
7	6.01%	751	2.79E-05	15	5.26%	658	2.44E-05	23	2.68%	335	1.25E-05
8	4.35%	543	2.02E-05	16	3.76%	470	1.75E-05	24	0.86%	107	3.99E-06
								Total		12,500	

2040 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_WB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	4.08%	510	1.89E-05	9	6.55%	819	3.04E-05	17	5.64%	705	2.62E-05
2	2.74%	342	1.27E-05	10	7.51%	939	3.49E-05	18	3.17%	396	1.47E-05
3	2.90%	362	1.35E-05	11	6.44%	805	2.99E-05	19	2.20%	275	1.02E-05
4	3.11%	389	1.45E-05	12	6.98%	872	3.24E-05	20	0.86%	107	3.99E-06
5	2.09%	262	9.72E-06	13	6.28%	785	2.92E-05	21	2.95%	369	1.37E-05
6	3.22%	403	1.50E-05	14	6.17%	772	2.87E-05	22	4.19%	523	1.94E-05
7	6.01%	751	2.79E-05	15	5.26%	658	2.44E-05	23	2.68%	335	1.25E-05
8	4.35%	543	2.02E-05	16	3.76%	470	1.75E-05	24	0.86%	107	3.99E-06
								Total		12,500	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - El Camino Real 25K
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = **2040**

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
PM25_EB_ECR	El Camino Real Eastbound	EB	3	1312.7	0.82	17.0	56	1.3	35	12,500	22,280	239,822	3.294E-09	2.429E-09	2.6	1.21
PM25_WB_ECR	El Camino Real Westbound	WB	3	1312.8	0.82	17.0	56	1.3	35	12,500	22,282	239,840	3.294E-09	2.429E-09	2.6	1.21
									Total	25,000						

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.000622			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and PM2.5 Emissions - PM25_EB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	143	2.02E-05	9	7.12%	890	1.25E-04	17	7.40%	925	1.30E-04
2	0.41%	52	7.27E-06	10	4.38%	548	7.72E-05	18	8.19%	1023	1.44E-04
3	0.40%	50	6.98E-06	11	4.66%	582	8.21E-05	19	5.70%	713	1.00E-04
4	0.25%	31	4.35E-06	12	5.89%	736	1.04E-04	20	4.28%	535	7.54E-05
5	0.49%	61	8.65E-06	13	6.15%	769	1.08E-04	21	3.26%	407	5.74E-05
6	0.89%	112	1.57E-05	14	6.04%	754	1.06E-04	22	3.30%	412	5.81E-05
7	3.78%	473	6.66E-05	15	7.02%	878	1.24E-04	23	2.46%	308	4.34E-05
8	7.77%	971	1.37E-04	16	7.15%	894	1.26E-04	24	1.87%	234	3.29E-05
								Total		12,500	

2040 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM25_WB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	143	2.02E-05	9	7.12%	890	1.25E-04	17	7.40%	925	1.30E-04
2	0.41%	52	7.27E-06	10	4.38%	548	7.72E-05	18	8.19%	1023	1.44E-04
3	0.40%	50	6.98E-06	11	4.66%	582	8.21E-05	19	5.70%	713	1.00E-04
4	0.25%	31	4.35E-06	12	5.89%	736	1.04E-04	20	4.28%	535	7.54E-05
5	0.49%	61	8.65E-06	13	6.15%	769	1.08E-04	21	3.26%	407	5.74E-05
6	0.89%	112	1.57E-05	14	6.04%	754	1.06E-04	22	3.30%	412	5.81E-05
7	3.78%	473	6.66E-05	15	7.02%	878	1.24E-04	23	2.46%	308	4.34E-05
8	7.77%	971	1.37E-04	16	7.15%	894	1.26E-04	24	1.87%	234	3.29E-05
								Total		12,500	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - El Camino Real 25K
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEXH_EB_ECR	El Camino Real Eastbound	EB	3	1312.7	0.82	17.0	56	1.3	35	12,500	22,280	239,822	5.127E-08	3.780E-08	2.6	1.21
TEXH_WB_ECR	El Camino Real Westbound	WB	3	1312.8	0.82	17.0	56	1.3	35	12,500	22,282	239,840	5.127E-08	3.780E-08	2.6	1.21
									Total	25,000						

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00968			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_EB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	143	3.15E-04	9	7.12%	890	1.95E-03	17	7.40%	925	2.03E-03
2	0.41%	52	1.13E-04	10	4.38%	548	1.20E-03	18	8.19%	1023	2.24E-03
3	0.40%	50	1.09E-04	11	4.66%	582	1.28E-03	19	5.70%	713	1.56E-03
4	0.25%	31	6.77E-05	12	5.89%	736	1.61E-03	20	4.28%	535	1.17E-03
5	0.49%	61	1.35E-04	13	6.15%	769	1.69E-03	21	3.26%	407	8.93E-04
6	0.89%	112	2.45E-04	14	6.04%	754	1.65E-03	22	3.30%	412	9.05E-04
7	3.78%	473	1.04E-03	15	7.02%	878	1.92E-03	23	2.46%	308	6.75E-04
8	7.77%	971	2.13E-03	16	7.15%	894	1.96E-03	24	1.87%	234	5.12E-04
								Total		12,500	

2040 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_WB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	143	3.15E-04	9	7.12%	890	1.95E-03	17	7.40%	925	2.03E-03
2	0.41%	52	1.13E-04	10	4.38%	548	1.20E-03	18	8.19%	1023	2.24E-03
3	0.40%	50	1.09E-04	11	4.66%	582	1.28E-03	19	5.70%	713	1.56E-03
4	0.25%	31	6.77E-05	12	5.89%	736	1.62E-03	20	4.28%	535	1.17E-03
5	0.49%	61	1.35E-04	13	6.15%	769	1.69E-03	21	3.26%	407	8.93E-04
6	0.89%	112	2.45E-04	14	6.04%	754	1.65E-03	22	3.30%	412	9.05E-04
7	3.78%	473	1.04E-03	15	7.02%	878	1.92E-03	23	2.46%	308	6.75E-04
8	7.77%	971	2.13E-03	16	7.15%	894	1.96E-03	24	1.87%	234	5.12E-04
								Total		12,500	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - El Camino Real 25K
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEVAP_EB_ECR	El Camino Real Eastbound	EB	3	1312.7	0.82	17.0	56	1.3	35	12,500	22,280	239,822	1.142E-07	8.417E-08	2.6	1.21
TEVAP_WB_ECR	El Camino Real Westbound	WB	3	1312.8	0.82	17.0	56	1.3	35	12,500	22,282	239,840	1.142E-07	8.417E-08	2.6	1.21
									Total	25,000						

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle per Hour (g/hour)	0.75436			
Emissions per Vehicle per Mile (g/VMT)	0.02155			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_EB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	143	7.00E-04	9	7.12%	890	4.35E-03	17	7.40%	925	4.52E-03
2	0.41%	52	2.52E-04	10	4.38%	548	2.68E-03	18	8.19%	1023	5.00E-03
3	0.40%	50	2.42E-04	11	4.66%	582	2.84E-03	19	5.70%	713	3.48E-03
4	0.25%	31	1.51E-04	12	5.89%	736	3.60E-03	20	4.28%	535	2.61E-03
5	0.49%	61	3.00E-04	13	6.15%	769	3.76E-03	21	3.26%	407	1.99E-03
6	0.89%	112	5.46E-04	14	6.04%	754	3.68E-03	22	3.30%	412	2.01E-03
7	3.78%	473	2.31E-03	15	7.02%	878	4.29E-03	23	2.46%	308	1.50E-03
8	7.77%	971	4.74E-03	16	7.15%	894	4.36E-03	24	1.87%	234	1.14E-03
								Total		12,500	

2040 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_WB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	143	7.00E-04	9	7.12%	890	4.35E-03	17	7.40%	925	4.52E-03
2	0.41%	52	2.52E-04	10	4.38%	548	2.68E-03	18	8.19%	1023	5.00E-03
3	0.40%	50	2.42E-04	11	4.66%	582	2.84E-03	19	5.70%	713	3.48E-03
4	0.25%	31	1.51E-04	12	5.89%	736	3.60E-03	20	4.28%	535	2.61E-03
5	0.49%	61	3.00E-04	13	6.15%	769	3.76E-03	21	3.26%	407	1.99E-03
6	0.89%	112	5.46E-04	14	6.04%	754	3.68E-03	22	3.30%	412	2.01E-03
7	3.78%	473	2.31E-03	15	7.02%	878	4.29E-03	23	2.46%	308	1.50E-03
8	7.77%	971	4.74E-03	16	7.15%	894	4.36E-03	24	1.87%	234	1.14E-03
								Total		12,500	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - El Camino Real 25K
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
FUG_EB_ECR	El Camino Real Eastbound	EB	3	1312.7	0.82	17.0	56	1.3	35	12,500	22,280	239,822	1.213E-07	8.947E-08	2.6	1.21
FUG_WB_ECR	El Camino Real Westbound	WB	3	1312.8	0.82	17.0	56	1.3	35	12,500	22,282	239,840	1.213E-07	8.947E-08	2.6	1.21
									Total	25,000						

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00210			
Brake Wear - Emissions per Vehicle (g/VMT)	0.00532			
Road Dust - Emissions per Vehicle (g/VMT)	0.01549			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02291			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_EB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	143	7.45E-04	9	7.12%	890	4.62E-03	17	7.40%	925	4.80E-03
2	0.41%	52	2.68E-04	10	4.38%	548	2.84E-03	18	8.19%	1023	5.31E-03
3	0.40%	50	2.57E-04	11	4.66%	582	3.02E-03	19	5.70%	713	3.70E-03
4	0.25%	31	1.60E-04	12	5.89%	736	3.82E-03	20	4.28%	535	2.78E-03
5	0.49%	61	3.18E-04	13	6.15%	769	3.99E-03	21	3.26%	407	2.11E-03
6	0.89%	112	5.80E-04	14	6.04%	754	3.92E-03	22	3.30%	412	2.14E-03
7	3.78%	473	2.45E-03	15	7.02%	878	4.56E-03	23	2.46%	308	1.60E-03
8	7.77%	971	5.04E-03	16	7.15%	894	4.64E-03	24	1.87%	234	1.21E-03
								Total		12,500	

2040 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_WB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	143	7.45E-04	9	7.12%	890	4.62E-03	17	7.40%	925	4.80E-03
2	0.41%	52	2.68E-04	10	4.38%	548	2.84E-03	18	8.19%	1023	5.31E-03
3	0.40%	50	2.57E-04	11	4.66%	582	3.02E-03	19	5.70%	713	3.70E-03
4	0.25%	31	1.60E-04	12	5.89%	736	3.82E-03	20	4.28%	535	2.78E-03
5	0.49%	61	3.18E-04	13	6.15%	769	3.99E-03	21	3.26%	407	2.11E-03
6	0.89%	112	5.80E-04	14	6.04%	754	3.92E-03	22	3.30%	412	2.14E-03
7	3.78%	473	2.45E-03	15	7.02%	878	4.56E-03	23	2.46%	308	1.60E-03
8	7.77%	971	5.04E-03	16	7.15%	894	4.64E-03	24	1.87%	234	1.21E-03
								Total		12,500	

El Camino Real Specific Plan, Santa Clara, CA - El Camino Real 25k ADT Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
Off-Site 1st (1.5m) Floor Receptor Heights

Emission Year	2040
Receptor Information	Maximum Distance Off-Site Receptor
Number of Receptors	80
Receptor Height	1st (1.5m) Floors
Receptor Distances	228.6 meter line spacing

Meteorological Conditions

BAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Off-Site Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3) DPM	Exhaust TOG	Evaporative TOG	
2013-2017	0.0013	0.1189	0.2648	Southside - 7.62 meters
2013-2017	0.0013	0.0893	0.1989	Northside - 7.62 meters

Off-Site PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3) Total PM2.5	Fugitive PM2.5	Vehicle PM2.5	
2013-2017	0.2889	0.2813	0.0076	Southside - 7.62 meters
2013-2017	0.2170	0.2113	0.0057	Northside - 7.62 meters

El Camino Real Specific Plan, Santa Clara, CA - El Camino Real 25k ADT Cancer Risk & PM2.5
Impacts at Off-Site 1st Floor Receptors - 1.5m receptor heights - Southside 7.62m
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity 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: C_{air} = 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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2040	10	0.0013	0.1189	0.2648	0.017	0.009	0.0012	0.03
1	1	0 - 1	2040	10	0.0013	0.1189	0.2648	0.210	0.111	0.0146	0.34
2	1	1 - 2	2041	10	0.0013	0.1189	0.2648	0.210	0.111	0.0146	0.34
3	1	2 - 3	2042	3	0.0013	0.1189	0.2648	0.033	0.018	0.0023	0.05
4	1	3 - 4	2043	3	0.0013	0.1189	0.2648	0.033	0.018	0.0023	0.05
5	1	4 - 5	2044	3	0.0013	0.1189	0.2648	0.033	0.018	0.0023	0.05
6	1	5 - 6	2045	3	0.0013	0.1189	0.2648	0.033	0.018	0.0023	0.05
7	1	6 - 7	2046	3	0.0013	0.1189	0.2648	0.033	0.018	0.0023	0.05
8	1	7 - 8	2047	3	0.0013	0.1189	0.2648	0.033	0.018	0.0023	0.05
9	1	8 - 9	2048	3	0.0013	0.1189	0.2648	0.033	0.018	0.0023	0.05
10	1	9 - 10	2049	3	0.0013	0.1189	0.2648	0.033	0.018	0.0023	0.05
11	1	10 - 11	2050	3	0.0013	0.1189	0.2648	0.033	0.018	0.0023	0.05
12	1	11 - 12	2051	3	0.0013	0.1189	0.2648	0.033	0.018	0.0023	0.05
13	1	12 - 13	2052	3	0.0013	0.1189	0.2648	0.033	0.018	0.0023	0.05
14	1	13 - 14	2053	3	0.0013	0.1189	0.2648	0.033	0.018	0.0023	0.05
15	1	14 - 15	2054	3	0.0013	0.1189	0.2648	0.033	0.018	0.0023	0.05
16	1	15 - 16	2055	3	0.0013	0.1189	0.2648	0.033	0.018	0.0023	0.05
17	1	16-17	2056	1	0.0013	0.1189	0.2648	0.004	0.002	0.0003	0.01
18	1	17-18	2057	1	0.0013	0.1189	0.2648	0.004	0.002	0.0003	0.01
19	1	18-19	2058	1	0.0013	0.1189	0.2648	0.004	0.002	0.0003	0.01
20	1	19-20	2059	1	0.0013	0.1189	0.2648	0.004	0.002	0.0003	0.01
21	1	20-21	2060	1	0.0013	0.1189	0.2648	0.004	0.002	0.0003	0.01
22	1	21-22	2061	1	0.0013	0.1189	0.2648	0.004	0.002	0.0003	0.01
23	1	22-23	2062	1	0.0013	0.1189	0.2648	0.004	0.002	0.0003	0.01
24	1	23-24	2063	1	0.0013	0.1189	0.2648	0.004	0.002	0.0003	0.01
25	1	24-25	2064	1	0.0013	0.1189	0.2648	0.004	0.002	0.0003	0.01
26	1	25-26	2065	1	0.0013	0.1189	0.2648	0.004	0.002	0.0003	0.01
27	1	26-27	2066	1	0.0013	0.1189	0.2648	0.004	0.002	0.0003	0.01
28	1	27-28	2067	1	0.0013	0.1189	0.2648	0.004	0.002	0.0003	0.01
29	1	28-29	2068	1	0.0013	0.1189	0.2648	0.004	0.002	0.0003	0.01
30	1	29-30	2069	1	0.0013	0.1189	0.2648	0.004	0.002	0.0003	0.01
Total Increased Cancer Risk								0.95	0.505	0.066	**1.52**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0003	0.28	0.29

* Third trimester of pregnancy

El Camino Real Specific Plan, Santa Clara, CA - El Camino Real 25k ADT Cancer Risk & PM2.5
Impacts at Off-Site 1st Floor Receptors - 1.5m receptor heights - Northside 7.62m
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity 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: C_{air} = 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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2040	10	0.0013	0.0893	0.1989	0.018	0.007	0.0009	0.03
1	1	0 - 1	2040	10	0.0013	0.0893	0.1989	0.218	0.084	0.0110	0.31
2	1	1 - 2	2041	10	0.0013	0.0893	0.1989	0.218	0.084	0.0110	0.31
3	1	2 - 3	2042	3	0.0013	0.0893	0.1989	0.034	0.013	0.0017	0.05
4	1	3 - 4	2043	3	0.0013	0.0893	0.1989	0.034	0.013	0.0017	0.05
5	1	4 - 5	2044	3	0.0013	0.0893	0.1989	0.034	0.013	0.0017	0.05
6	1	5 - 6	2045	3	0.0013	0.0893	0.1989	0.034	0.013	0.0017	0.05
7	1	6 - 7	2046	3	0.0013	0.0893	0.1989	0.034	0.013	0.0017	0.05
8	1	7 - 8	2047	3	0.0013	0.0893	0.1989	0.034	0.013	0.0017	0.05
9	1	8 - 9	2048	3	0.0013	0.0893	0.1989	0.034	0.013	0.0017	0.05
10	1	9 - 10	2049	3	0.0013	0.0893	0.1989	0.034	0.013	0.0017	0.05
11	1	10 - 11	2050	3	0.0013	0.0893	0.1989	0.034	0.013	0.0017	0.05
12	1	11 - 12	2051	3	0.0013	0.0893	0.1989	0.034	0.013	0.0017	0.05
13	1	12 - 13	2052	3	0.0013	0.0893	0.1989	0.034	0.013	0.0017	0.05
14	1	13 - 14	2053	3	0.0013	0.0893	0.1989	0.034	0.013	0.0017	0.05
15	1	14 - 15	2054	3	0.0013	0.0893	0.1989	0.034	0.013	0.0017	0.05
16	1	15 - 16	2055	3	0.0013	0.0893	0.1989	0.034	0.013	0.0017	0.05
17	1	16-17	2056	1	0.0013	0.0893	0.1989	0.004	0.001	0.0002	0.01
18	1	17-18	2057	1	0.0013	0.0893	0.1989	0.004	0.001	0.0002	0.01
19	1	18-19	2058	1	0.0013	0.0893	0.1989	0.004	0.001	0.0002	0.01
20	1	19-20	2059	1	0.0013	0.0893	0.1989	0.004	0.001	0.0002	0.01
21	1	20-21	2060	1	0.0013	0.0893	0.1989	0.004	0.001	0.0002	0.01
22	1	21-22	2061	1	0.0013	0.0893	0.1989	0.004	0.001	0.0002	0.01
23	1	22-23	2062	1	0.0013	0.0893	0.1989	0.004	0.001	0.0002	0.01
24	1	23-24	2063	1	0.0013	0.0893	0.1989	0.004	0.001	0.0002	0.01
25	1	24-25	2064	1	0.0013	0.0893	0.1989	0.004	0.001	0.0002	0.01
26	1	25-26	2065	1	0.0013	0.0893	0.1989	0.004	0.001	0.0002	0.01
27	1	26-27	2066	1	0.0013	0.0893	0.1989	0.004	0.001	0.0002	0.01
28	1	27-28	2067	1	0.0013	0.0893	0.1989	0.004	0.001	0.0002	0.01
29	1	28-29	2068	1	0.0013	0.0893	0.1989	0.004	0.001	0.0002	0.01
30	1	29-30	2069	1	0.0013	0.0893	0.1989	0.004	0.001	0.0002	0.01
Total Increased Cancer Risk								0.99	0.379	0.050	**1.42**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.000	0.21	0.22

* Third trimester of pregnancy

El Camino Real from Approx. Lincoln St to Approx. Alviso St 2040 Traffic Emissions and Health Risk Calculations

Analysis Year = ***2040***

Vehicle Type	2040 Caltrans Vehicles (veh/day)	2040 Vehicles (veh/day)
Total	**25,000**	**25,000**

Increase From 2040	1.00
Vehicles/Direction	**12,500**
Avg Vehicles/Hour/Direction	521

Traffic Data Year = ***2040***

El Camino Real Specific Plan TIA 2019 & 2024		Total	Trucks by Axle			
	AADT Total	Truck	2	3	4	5
El Camino Real - From Approx. Lincoln St to Approx. Alviso S	25,000	878	692	97	27	62
			78.81%	11.07%	3.10%	7.02%
Percent of Total Vehicles		3.51%	2.77%	0.39%	0.11%	0.25%

Traffic Increase per Year (%) = *1.00%*

878	Trucks	100%
2.8%	MDT	
0.7%	HDT	
3.5%	Total	
96.5%	Other	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - El Camino Real 25K Curve
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
DPM_EB_ECR	El Camino Real Eastbound	EB	3	922.0	0.57	17.0	55.7	3.4	40	12,500	15,649	168,444	9.269E-10	6.834E-10	6.8	3.16
DPM_WB_ECR	El Camino Real Westbound	WB	3	915.0	0.57	17.0	55.7	3.4	40	12,500	15,530	167,165	9.269E-10	6.834E-10	6.8	3.16
									Total	25,000						

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.00018			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and DPM Emissions - DPM_EB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	4.08%	510	1.42E-05	9	6.55%	819	2.28E-05	17	5.64%	705	1.96E-05
2	2.74%	342	9.53E-06	10	7.51%	939	2.62E-05	18	3.17%	396	1.10E-05
3	2.90%	362	1.01E-05	11	6.44%	805	2.24E-05	19	2.20%	275	7.66E-06
4	3.11%	389	1.08E-05	12	6.98%	872	2.43E-05	20	0.86%	107	2.99E-06
5	2.09%	262	7.29E-06	13	6.28%	785	2.19E-05	21	2.95%	369	1.03E-05
6	3.22%	403	1.12E-05	14	6.17%	772	2.15E-05	22	4.19%	523	1.46E-05
7	6.01%	751	2.09E-05	15	5.26%	658	1.83E-05	23	2.68%	335	9.34E-06
8	4.35%	543	1.51E-05	16	3.76%	470	1.31E-05	24	0.86%	107	2.99E-06
								Total		12,500	

2040 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_WB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	4.08%	510	1.41E-05	9	6.55%	819	2.26E-05	17	5.64%	705	1.95E-05
2	2.74%	342	9.46E-06	10	7.51%	939	2.60E-05	18	3.17%	396	1.09E-05
3	2.90%	362	1.00E-05	11	6.44%	805	2.23E-05	19	2.20%	275	7.60E-06
4	3.11%	389	1.08E-05	12	6.98%	872	2.41E-05	20	0.86%	107	2.97E-06
5	2.09%	262	7.23E-06	13	6.28%	785	2.17E-05	21	2.95%	369	1.02E-05
6	3.22%	403	1.11E-05	14	6.17%	772	2.13E-05	22	4.19%	523	1.45E-05
7	6.01%	751	2.08E-05	15	5.26%	658	1.82E-05	23	2.68%	335	9.27E-06
8	4.35%	543	1.50E-05	16	3.76%	470	1.30E-05	24	0.86%	107	2.97E-06
								Total		12,500	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - El Camino Real 25K Curve
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
PM25_EB_ECR	El Camino Real Eastbound	EB	3	922.0	0.57	17.0	56	1.3	40	12,500	15,649	168,444	3.019E-09	2.226E-09	2.6	1.21
PM25_WB_ECR	El Camino Real Westbound	WB	3	915.0	0.57	17.0	56	1.3	40	12,500	15,530	167,165	3.019E-09	2.226E-09	2.6	1.21
									Total	25,000						

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.000570			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and PM2.5 Emissions - PM25_EB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	143	1.30E-05	9	7.12%	890	8.07E-05	17	7.40%	925	8.39E-05
2	0.41%	52	4.68E-06	10	4.38%	548	4.97E-05	18	8.19%	1023	9.28E-05
3	0.40%	50	4.49E-06	11	4.66%	582	5.28E-05	19	5.70%	713	6.47E-05
4	0.25%	31	2.80E-06	12	5.89%	736	6.68E-05	20	4.28%	535	4.85E-05
5	0.49%	61	5.57E-06	13	6.15%	769	6.98E-05	21	3.26%	407	3.69E-05
6	0.89%	112	1.01E-05	14	6.04%	754	6.84E-05	22	3.30%	412	3.74E-05
7	3.78%	473	4.29E-05	15	7.02%	878	7.96E-05	23	2.46%	308	2.79E-05
8	7.77%	971	8.81E-05	16	7.15%	894	8.11E-05	24	1.87%	234	2.12E-05
								Total		12,500	

2040 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM25_WB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	143	1.29E-05	9	7.12%	890	8.01E-05	17	7.40%	925	8.32E-05
2	0.41%	52	4.65E-06	10	4.38%	548	4.93E-05	18	8.19%	1023	9.21E-05
3	0.40%	50	4.46E-06	11	4.66%	582	5.24E-05	19	5.70%	713	6.42E-05
4	0.25%	31	2.78E-06	12	5.89%	736	6.63E-05	20	4.28%	535	4.82E-05
5	0.49%	61	5.52E-06	13	6.15%	769	6.92E-05	21	3.26%	407	3.66E-05
6	0.89%	112	1.01E-05	14	6.04%	754	6.79E-05	22	3.30%	412	3.71E-05
7	3.78%	473	4.26E-05	15	7.02%	878	7.90E-05	23	2.46%	308	2.77E-05
8	7.77%	971	8.74E-05	16	7.15%	894	8.04E-05	24	1.87%	234	2.10E-05
								Total		12,500	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - El Camino Real 25K Curve
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEXH_EB_ECR	El Camino Real Eastbound	EB	3	922.0	0.57	17.0	56	1.3	40	12,500	15,649	168,444	4.463E-08	3.291E-08	2.6	1.21
TEXH_WB_ECR	El Camino Real Westbound	WB	3	915.0	0.57	17.0	56	1.3	40	12,500	15,530	167,165	4.463E-08	3.291E-08	2.6	1.21
									Total	25,000						

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle (g/VMT)	0.00843			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_EB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	890	1.19E-03	17	7.40%	925	1.24E-03
2	0.00%	0	0.00E+00	10	4.38%	548	7.35E-04	18	8.19%	1023	1.37E-03
3	0.40%	50	6.64E-05	11	4.66%	582	7.81E-04	19	5.70%	713	9.56E-04
4	0.25%	31	4.14E-05	12	5.89%	736	9.87E-04	20	4.28%	535	7.17E-04
5	0.49%	61	8.23E-05	13	6.15%	769	1.03E-03	21	3.26%	407	5.46E-04
6	0.89%	112	1.50E-04	14	6.04%	754	1.01E-03	22	3.30%	412	5.53E-04
7	3.78%	473	6.34E-04	15	7.02%	878	1.18E-03	23	2.46%	308	4.13E-04
8	7.77%	971	1.30E-03	16	7.15%	894	1.20E-03	24	1.87%	234	3.13E-04
								Total		12,305	

2040 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_WB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	890	1.18E-03	17	7.40%	925	1.23E-03
2	0.00%	0	0.00E+00	10	4.38%	548	7.29E-04	18	8.19%	1023	1.36E-03
3	0.40%	50	6.59E-05	11	4.66%	582	7.75E-04	19	5.70%	713	9.49E-04
4	0.25%	31	4.11E-05	12	5.89%	736	9.80E-04	20	4.28%	535	7.12E-04
5	0.49%	61	8.16E-05	13	6.15%	769	1.02E-03	21	3.26%	407	5.42E-04
6	0.89%	112	1.49E-04	14	6.04%	754	1.00E-03	22	3.30%	412	5.49E-04
7	3.78%	473	6.29E-04	15	7.02%	878	1.17E-03	23	2.46%	308	4.10E-04
8	7.77%	971	1.29E-03	16	7.15%	894	1.19E-03	24	1.87%	234	3.11E-04
								Total		12,305	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - El Camino Real 25K Curve
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEVAP_EB_ECR	El Camino Real Eastbound	EB	3	922.0	0.57	17.0	56	1.3	40	12,500	15,649	168,444	9.989E-08	7.365E-08	2.6	1.21
TEVAP_WB_ECR	El Camino Real Westbound	WB	3	915.0	0.57	17.0	56	1.3	40	12,500	15,530	167,165	9.989E-08	7.365E-08	2.6	1.21
									Total	25,000						

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Emissions per Vehicle per Hour (g/hour)	0.75436			
Emissions per Vehicle per Mile (g/VMT)	0.01886			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_EB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	890	2.67E-03	17	7.40%	925	2.77E-03
2	0.00%	0	0.00E+00	10	4.38%	548	1.64E-03	18	8.19%	1023	3.07E-03
3	0.40%	50	1.49E-04	11	4.66%	582	1.75E-03	19	5.70%	713	2.14E-03
4	0.25%	31	9.27E-05	12	5.89%	736	2.21E-03	20	4.28%	535	1.61E-03
5	0.49%	61	1.84E-04	13	6.15%	769	2.31E-03	21	3.26%	407	1.22E-03
6	0.89%	112	3.35E-04	14	6.04%	754	2.26E-03	22	3.30%	412	1.24E-03
7	3.78%	473	1.42E-03	15	7.02%	878	2.63E-03	23	2.46%	308	9.24E-04
8	7.77%	971	2.91E-03	16	7.15%	894	2.68E-03	24	1.87%	234	7.01E-04
								Total		12,305	

2040 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_WB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	890	2.65E-03	17	7.40%	925	2.75E-03
2	0.00%	0	0.00E+00	10	4.38%	548	1.63E-03	18	8.19%	1023	3.05E-03
3	0.40%	50	1.48E-04	11	4.66%	582	1.73E-03	19	5.70%	713	2.12E-03
4	0.25%	31	9.20E-05	12	5.89%	736	2.19E-03	20	4.28%	535	1.59E-03
5	0.49%	61	1.83E-04	13	6.15%	769	2.29E-03	21	3.26%	407	1.21E-03
6	0.89%	112	3.33E-04	14	6.04%	754	2.25E-03	22	3.30%	412	1.23E-03
7	3.78%	473	1.41E-03	15	7.02%	878	2.61E-03	23	2.46%	308	9.17E-04
8	7.77%	971	2.89E-03	16	7.15%	894	2.66E-03	24	1.87%	234	6.96E-04
								Total		12,305	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - El Camino Real 25K Curve
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
FUG_EB_ECR	El Camino Real Eastbound	EB	3	922.0	0.57	17.0	56	1.3	40	12,500	15,649	168,444	1.187E-07	8.756E-08	2.6	1.21
FUG_WB_ECR	El Camino Real Westbound	WB	3	915.0	0.57	17.0	56	1.3	40	12,500	15,530	167,165	1.187E-07	8.756E-08	2.6	1.21
									Total	25,000						

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	40			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00210			
Brake Wear - Emissions per Vehicle (g/VMT)	0.00483			
Road Dust - Emissions per Vehicle (g/VMT)	0.01549			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02242			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_EB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	890	3.17E-03	17	7.40%	925	3.30E-03
2	0.00%	0	0.00E+00	10	4.38%	548	1.96E-03	18	8.19%	1023	3.65E-03
3	0.40%	50	1.77E-04	11	4.66%	582	2.08E-03	19	5.70%	713	2.54E-03
4	0.25%	31	1.10E-04	12	5.89%	736	2.63E-03	20	4.28%	535	1.91E-03
5	0.49%	61	2.19E-04	13	6.15%	769	2.74E-03	21	3.26%	407	1.45E-03
6	0.89%	112	3.99E-04	14	6.04%	754	2.69E-03	22	3.30%	412	1.47E-03
7	3.78%	473	1.69E-03	15	7.02%	878	3.13E-03	23	2.46%	308	1.10E-03
8	7.77%	971	3.46E-03	16	7.15%	894	3.19E-03	24	1.87%	234	8.33E-04
								Total		12,305	

2040 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_WB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	890	3.15E-03	17	7.40%	925	3.27E-03
2	0.00%	0	0.00E+00	10	4.38%	548	1.94E-03	18	8.19%	1023	3.62E-03
3	0.40%	50	1.75E-04	11	4.66%	582	2.06E-03	19	5.70%	713	2.52E-03
4	0.25%	31	1.09E-04	12	5.89%	736	2.61E-03	20	4.28%	535	1.89E-03
5	0.49%	61	2.17E-04	13	6.15%	769	2.72E-03	21	3.26%	407	1.44E-03
6	0.89%	112	3.96E-04	14	6.04%	754	2.67E-03	22	3.30%	412	1.46E-03
7	3.78%	473	1.67E-03	15	7.02%	878	3.11E-03	23	2.46%	308	1.09E-03
8	7.77%	971	3.44E-03	16	7.15%	894	3.16E-03	24	1.87%	234	8.27E-04
								Total		12,305	

El Camino Real Specific Plan, Santa Clara, CA - El Camino Real 25k ADT Curve Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
Off-Site 1st (1.5m) Floor Receptor Heights

Emission Year	2040
Receptor Information	Maximum Distance Off-Site Receptor
Number of Receptors	125
Receptor Height	1st (1.5m) Floors
Receptor Distances	228.6 meter line spacing

Meteorological Conditions

BAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Off-Site Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3) DPM	Exhaust TOG	Evaporative TOG	
2013-2017	0.0011	0.0939	0.2102	Southside - 7.62 meters
2013-2017	0.0012	0.0664	0.1487	Northside - 7.62 meters

Off-Site PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3) Total PM2.5	Fugitive PM2.5	Vehicle PM2.5	
2013-2017	0.2562	0.2498	0.0064	Southside - 7.62 meters
2013-2017	0.1812	0.1767	0.0045	Northside - 7.62 meters

El Camino Real Specific Plan, Santa Clara, CA - El Camino Real 25k ADT Curve Cancer Risk & PM2.5
Impacts at Off-Site 1st Floor Receptors - 1.5m receptor heights - Southside 7.62m
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity 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: C_{air} = 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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2040	10	0.0011	0.0939	0.2102	0.015	0.007	0.0010	0.02
1	1	0 - 1	2040	10	0.0011	0.0939	0.2102	0.186	0.088	0.0116	0.29
2	1	1 - 2	2041	10	0.0011	0.0939	0.2102	0.186	0.088	0.0116	0.29
3	1	2 - 3	2042	3	0.0011	0.0939	0.2102	0.029	0.014	0.0018	0.04
4	1	3 - 4	2043	3	0.0011	0.0939	0.2102	0.029	0.014	0.0018	0.04
5	1	4 - 5	2044	3	0.0011	0.0939	0.2102	0.029	0.014	0.0018	0.04
6	1	5 - 6	2045	3	0.0011	0.0939	0.2102	0.029	0.014	0.0018	0.04
7	1	6 - 7	2046	3	0.0011	0.0939	0.2102	0.029	0.014	0.0018	0.04
8	1	7 - 8	2047	3	0.0011	0.0939	0.2102	0.029	0.014	0.0018	0.04
9	1	8 - 9	2048	3	0.0011	0.0939	0.2102	0.029	0.014	0.0018	0.04
10	1	9 - 10	2049	3	0.0011	0.0939	0.2102	0.029	0.014	0.0018	0.04
11	1	10 - 11	2050	3	0.0011	0.0939	0.2102	0.029	0.014	0.0018	0.04
12	1	11 - 12	2051	3	0.0011	0.0939	0.2102	0.029	0.014	0.0018	0.04
13	1	12 - 13	2052	3	0.0011	0.0939	0.2102	0.029	0.014	0.0018	0.04
14	1	13 - 14	2053	3	0.0011	0.0939	0.2102	0.029	0.014	0.0018	0.04
15	1	14 - 15	2054	3	0.0011	0.0939	0.2102	0.029	0.014	0.0018	0.04
16	1	15 - 16	2055	3	0.0011	0.0939	0.2102	0.029	0.014	0.0018	0.04
17	1	16-17	2056	1	0.0011	0.0939	0.2102	0.003	0.002	0.0002	0.00
18	1	17-18	2057	1	0.0011	0.0939	0.2102	0.003	0.002	0.0002	0.00
19	1	18-19	2058	1	0.0011	0.0939	0.2102	0.003	0.002	0.0002	0.00
20	1	19-20	2059	1	0.0011	0.0939	0.2102	0.003	0.002	0.0002	0.00
21	1	20-21	2060	1	0.0011	0.0939	0.2102	0.003	0.002	0.0002	0.00
22	1	21-22	2061	1	0.0011	0.0939	0.2102	0.003	0.002	0.0002	0.00
23	1	22-23	2062	1	0.0011	0.0939	0.2102	0.003	0.002	0.0002	0.00
24	1	23-24	2063	1	0.0011	0.0939	0.2102	0.003	0.002	0.0002	0.00
25	1	24-25	2064	1	0.0011	0.0939	0.2102	0.003	0.002	0.0002	0.00
26	1	25-26	2065	1	0.0011	0.0939	0.2102	0.003	0.002	0.0002	0.00
27	1	26-27	2066	1	0.0011	0.0939	0.2102	0.003	0.002	0.0002	0.00
28	1	27-28	2067	1	0.0011	0.0939	0.2102	0.003	0.002	0.0002	0.00
29	1	28-29	2068	1	0.0011	0.0939	0.2102	0.003	0.002	0.0002	0.00
30	1	29-30	2069	1	0.0011	0.0939	0.2102	0.003	0.002	0.0002	0.00
Total Increased Cancer Risk								0.84	0.399	0.053	**1.29**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0002	0.25	0.26

* Third trimester of pregnancy

El Camino Real Specific Plan, Santa Clara, CA - El Camino Real 25k ADT Curve Cancer Risk & PM2.5
Impacts at Off-Site 1st Floor Receptors - 1.5m receptor heights - Northside 7.62m
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity 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: C_{air} = 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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2040	10	0.0012	0.0664	0.1487	0.016	0.005	0.0007	0.02
1	1	0 - 1	2040	10	0.0012	0.0664	0.1487	0.189	0.062	0.0082	0.26
2	1	1 - 2	2041	10	0.0012	0.0664	0.1487	0.189	0.062	0.0082	0.26
3	1	2 - 3	2042	3	0.0012	0.0664	0.1487	0.030	0.010	0.0013	0.04
4	1	3 - 4	2043	3	0.0012	0.0664	0.1487	0.030	0.010	0.0013	0.04
5	1	4 - 5	2044	3	0.0012	0.0664	0.1487	0.030	0.010	0.0013	0.04
6	1	5 - 6	2045	3	0.0012	0.0664	0.1487	0.030	0.010	0.0013	0.04
7	1	6 - 7	2046	3	0.0012	0.0664	0.1487	0.030	0.010	0.0013	0.04
8	1	7 - 8	2047	3	0.0012	0.0664	0.1487	0.030	0.010	0.0013	0.04
9	1	8 - 9	2048	3	0.0012	0.0664	0.1487	0.030	0.010	0.0013	0.04
10	1	9 - 10	2049	3	0.0012	0.0664	0.1487	0.030	0.010	0.0013	0.04
11	1	10 - 11	2050	3	0.0012	0.0664	0.1487	0.030	0.010	0.0013	0.04
12	1	11 - 12	2051	3	0.0012	0.0664	0.1487	0.030	0.010	0.0013	0.04
13	1	12 - 13	2052	3	0.0012	0.0664	0.1487	0.030	0.010	0.0013	0.04
14	1	13 - 14	2053	3	0.0012	0.0664	0.1487	0.030	0.010	0.0013	0.04
15	1	14 - 15	2054	3	0.0012	0.0664	0.1487	0.030	0.010	0.0013	0.04
16	1	15 - 16	2055	3	0.0012	0.0664	0.1487	0.030	0.010	0.0013	0.04
17	1	16-17	2056	1	0.0012	0.0664	0.1487	0.003	0.001	0.0001	0.00
18	1	17-18	2057	1	0.0012	0.0664	0.1487	0.003	0.001	0.0001	0.00
19	1	18-19	2058	1	0.0012	0.0664	0.1487	0.003	0.001	0.0001	0.00
20	1	19-20	2059	1	0.0012	0.0664	0.1487	0.003	0.001	0.0001	0.00
21	1	20-21	2060	1	0.0012	0.0664	0.1487	0.003	0.001	0.0001	0.00
22	1	21-22	2061	1	0.0012	0.0664	0.1487	0.003	0.001	0.0001	0.00
23	1	22-23	2062	1	0.0012	0.0664	0.1487	0.003	0.001	0.0001	0.00
24	1	23-24	2063	1	0.0012	0.0664	0.1487	0.003	0.001	0.0001	0.00
25	1	24-25	2064	1	0.0012	0.0664	0.1487	0.003	0.001	0.0001	0.00
26	1	25-26	2065	1	0.0012	0.0664	0.1487	0.003	0.001	0.0001	0.00
27	1	26-27	2066	1	0.0012	0.0664	0.1487	0.003	0.001	0.0001	0.00
28	1	27-28	2067	1	0.0012	0.0664	0.1487	0.003	0.001	0.0001	0.00
29	1	28-29	2068	1	0.0012	0.0664	0.1487	0.003	0.001	0.0001	0.00
30	1	29-30	2069	1	0.0012	0.0664	0.1487	0.003	0.001	0.0001	0.00
Total Increased Cancer Risk								0.86	0.282	0.037	**1.18**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.000	0.18	0.18

* Third trimester of pregnancy

Lawrence Expressway 2040 Traffic Emissions and Health Risk Calculations

Analysis Year = ***2040***

Vehicle Type	2040 Caltrans Vehicles (veh/day)	2040 Vehicles (veh/day)
Total	**64,000**	**64,000**

Increase From 2040	1.00
Vehicles/Direction	**32,000**
Avg Vehicles/Hour/Direction	1,333

Traffic Data Year = ***2040***

El Camino Real Specific Plan TIA 2019 & 2024		Total	Trucks by Axle			
	AADT Total	Truck	2	3	4	5
Lawrence Expy & Benton St	64,000	2,246	1,770	249	70	158
			78.81%	11.07%	3.10%	7.02%
Percent of Total Vehicles		3.51%	2.77%	0.39%	0.11%	0.25%

Traffic Increase per Year (%) = *1.00%*

2,246	Trucks	100%
2.8%	MDT	
0.7%	HDT	
3.5%	Total	
96.5%	Other	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Lawrence Expressway
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
DPM_NB_LAW	Lawrence Expy Northbound	NB	4	477.1	0.30	20.6	67.7	3.4	50	32,000	9,843	105,947	2.655E-09	1.958E-09	6.8	3.16
DPM_SB_LAW	Lawrence Expy Southbound	SB	4	477.5	0.30	20.6	67.7	3.4	50	32,000	9,851	106,035	2.655E-09	1.958E-09	6.8	3.16
									Total	64,000						

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	50			
Emissions per Vehicle (g/VMT)	0.00024			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and DPM Emissions - DPM_NB_LAW

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	4.08%	1305	2.56E-05	9	6.55%	2096	4.11E-05	17	5.64%	1804	3.53E-05
2	2.74%	876	1.72E-05	10	7.51%	2405	4.71E-05	18	3.17%	1013	1.99E-05
3	2.90%	928	1.82E-05	11	6.44%	2061	4.04E-05	19	2.20%	704	1.38E-05
4	3.11%	996	1.95E-05	12	6.98%	2233	4.38E-05	20	0.86%	275	5.39E-06
5	2.09%	670	1.31E-05	13	6.28%	2010	3.94E-05	21	2.95%	945	1.85E-05
6	3.22%	1031	2.02E-05	14	6.17%	1975	3.87E-05	22	4.19%	1340	2.63E-05
7	6.01%	1924	3.77E-05	15	5.26%	1683	3.30E-05	23	2.68%	859	1.68E-05
8	4.35%	1391	2.73E-05	16	3.76%	1202	2.36E-05	24	0.86%	275	5.39E-06
								Total		32,000	

2040 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_LAW

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	4.08%	1305	2.56E-05	9	6.55%	2096	4.11E-05	17	5.64%	1804	3.54E-05
2	2.74%	876	1.72E-05	10	7.51%	2405	4.72E-05	18	3.17%	1013	1.99E-05
3	2.90%	928	1.82E-05	11	6.44%	2061	4.04E-05	19	2.20%	704	1.38E-05
4	3.11%	996	1.95E-05	12	6.98%	2233	4.38E-05	20	0.86%	275	5.39E-06
5	2.09%	670	1.31E-05	13	6.28%	2010	3.94E-05	21	2.95%	945	1.85E-05
6	3.22%	1031	2.02E-05	14	6.17%	1975	3.87E-05	22	4.19%	1340	2.63E-05
7	6.01%	1924	3.77E-05	15	5.26%	1683	3.30E-05	23	2.68%	859	1.68E-05
8	4.35%	1391	2.73E-05	16	3.76%	1202	2.36E-05	24	0.86%	275	5.39E-06
								Total		32,000	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Lawrence Expressway
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
PM25_NB_LAW	Lawrence Expy Northbound	NB	4	477.1	0.30	20.6	68	1.3	50	32,000	9,843	105,947	6.504E-09	4.795E-09	2.6	1.21
PM25_SB_LAW	Lawrence Expy Southbound	SB	4	477.5	0.30	20.6	68	1.3	50	32,000	9,851	106,035	6.504E-09	4.795E-09	2.6	1.21
									Total	64,000						

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	50			
Emissions per Vehicle (g/VMT)	0.000583			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and PM2.5 Emissions - PM25_NB_LAW

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	367	1.76E-05	9	7.12%	2278	1.09E-04	17	7.40%	2367	1.14E-04
2	0.41%	132	6.34E-06	10	4.38%	1403	6.74E-05	18	8.19%	2620	1.26E-04
3	0.40%	127	6.09E-06	11	4.66%	1491	7.16E-05	19	5.70%	1825	8.76E-05
4	0.25%	79	3.80E-06	12	5.89%	1885	9.05E-05	20	4.28%	1369	6.57E-05
5	0.49%	157	7.54E-06	13	6.15%	1968	9.45E-05	21	3.26%	1042	5.00E-05
6	0.89%	286	1.37E-05	14	6.04%	1931	9.27E-05	22	3.30%	1056	5.07E-05
7	3.78%	1210	5.81E-05	15	7.02%	2247	1.08E-04	23	2.46%	788	3.79E-05
8	7.77%	2485	1.19E-04	16	7.15%	2287	1.10E-04	24	1.87%	598	2.87E-05
								Total		32,000	

2040 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM25_SB_LAW

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	367	1.76E-05	9	7.12%	2278	1.09E-04	17	7.40%	2367	1.14E-04
2	0.41%	132	6.35E-06	10	4.38%	1403	6.74E-05	18	8.19%	2620	1.26E-04
3	0.40%	127	6.09E-06	11	4.66%	1491	7.16E-05	19	5.70%	1825	8.77E-05
4	0.25%	79	3.80E-06	12	5.89%	1885	9.06E-05	20	4.28%	1369	6.58E-05
5	0.49%	157	7.55E-06	13	6.15%	1968	9.46E-05	21	3.26%	1042	5.01E-05
6	0.89%	286	1.37E-05	14	6.04%	1931	9.28E-05	22	3.30%	1056	5.07E-05
7	3.78%	1210	5.82E-05	15	7.02%	2247	1.08E-04	23	2.46%	788	3.79E-05
8	7.77%	2485	1.19E-04	16	7.15%	2287	1.10E-04	24	1.87%	598	2.87E-05
								Total		32,000	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Lawrence Expressway
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEXH_NB_LAW	Lawrence Expy Northbound	NB	4	477.1	0.30	20.6	68	1.3	50	32,000	9,843	105,947	8.215E-08	6.057E-08	2.6	1.21
TEXH_SB_LAW	Lawrence Expy Southbound	SB	4	477.5	0.30	20.6	68	1.3	50	32,000	9,851	106,035	8.215E-08	6.057E-08	2.6	1.21
									Total	64,000						

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	50			
Emissions per Vehicle (g/VMT)	0.00736			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_LAW

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	2278	1.38E-03	17	7.40%	2367	1.44E-03
2	0.00%	0	0.00E+00	10	4.38%	1403	8.51E-04	18	8.19%	2620	1.59E-03
3	0.40%	127	7.69E-05	11	4.66%	1491	9.04E-04	19	5.70%	1825	1.11E-03
4	0.25%	79	4.79E-05	12	5.89%	1885	1.14E-03	20	4.28%	1369	8.30E-04
5	0.49%	157	9.52E-05	13	6.15%	1968	1.19E-03	21	3.26%	1042	6.32E-04
6	0.89%	286	1.73E-04	14	6.04%	1931	1.17E-03	22	3.30%	1056	6.40E-04
7	3.78%	1210	7.34E-04	15	7.02%	2247	1.36E-03	23	2.46%	788	4.78E-04
8	7.77%	2485	1.51E-03	16	7.15%	2287	1.39E-03	24	1.87%	598	3.63E-04
								Total		31,501	

2040 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_LAW

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	2278	1.38E-03	17	7.40%	2367	1.44E-03
2	0.00%	0	0.00E+00	10	4.38%	1403	8.51E-04	18	8.19%	2620	1.59E-03
3	0.40%	127	7.70E-05	11	4.66%	1491	9.05E-04	19	5.70%	1825	1.11E-03
4	0.25%	79	4.80E-05	12	5.89%	1885	1.14E-03	20	4.28%	1369	8.31E-04
5	0.49%	157	9.53E-05	13	6.15%	1968	1.19E-03	21	3.26%	1042	6.32E-04
6	0.89%	286	1.74E-04	14	6.04%	1931	1.17E-03	22	3.30%	1056	6.41E-04
7	3.78%	1210	7.35E-04	15	7.02%	2247	1.36E-03	23	2.46%	788	4.79E-04
8	7.77%	2485	1.51E-03	16	7.15%	2287	1.39E-03	24	1.87%	598	3.63E-04
								Total		31,501	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Lawrence Expressway
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEVAP_NB_LAW	Lawrence Expy Northbound	NB	4	477.1	0.30	20.6	68	1.3	50	32,000	9,843	105,947	1.683E-07	1.241E-07	2.6	1.21
TEVAP_SB_LAW	Lawrence Expy Southbound	SB	4	477.5	0.30	20.6	68	1.3	50	32,000	9,851	106,035	1.683E-07	1.241E-07	2.6	1.21
									Total	64,000						

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	50			
Emissions per Vehicle per Hour (g/hour)	0.75436			
Emissions per Vehicle per Mile (g/VMT)	0.01509			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_LAW

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	2278	2.83E-03	17	7.40%	2367	2.94E-03
2	0.00%	0	0.00E+00	10	4.38%	1403	1.74E-03	18	8.19%	2620	3.26E-03
3	0.40%	127	1.58E-04	11	4.66%	1491	1.85E-03	19	5.70%	1825	2.27E-03
4	0.25%	79	9.82E-05	12	5.89%	1885	2.34E-03	20	4.28%	1369	1.70E-03
5	0.49%	157	1.95E-04	13	6.15%	1968	2.45E-03	21	3.26%	1042	1.29E-03
6	0.89%	286	3.55E-04	14	6.04%	1931	2.40E-03	22	3.30%	1056	1.31E-03
7	3.78%	1210	1.50E-03	15	7.02%	2247	2.79E-03	23	2.46%	788	9.80E-04
8	7.77%	2485	3.09E-03	16	7.15%	2287	2.84E-03	24	1.87%	598	7.43E-04
								Total		31,501	

2040 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_LAW

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	2278	2.83E-03	17	7.40%	2367	2.94E-03
2	0.00%	0	0.00E+00	10	4.38%	1403	1.74E-03	18	8.19%	2620	3.26E-03
3	0.40%	127	1.58E-04	11	4.66%	1491	1.85E-03	19	5.70%	1825	2.27E-03
4	0.25%	79	9.83E-05	12	5.89%	1885	2.34E-03	20	4.28%	1369	1.70E-03
5	0.49%	157	1.95E-04	13	6.15%	1968	2.45E-03	21	3.26%	1042	1.30E-03
6	0.89%	286	3.56E-04	14	6.04%	1931	2.40E-03	22	3.30%	1056	1.31E-03
7	3.78%	1210	1.50E-03	15	7.02%	2247	2.79E-03	23	2.46%	788	9.80E-04
8	7.77%	2485	3.09E-03	16	7.15%	2287	2.84E-03	24	1.87%	598	7.44E-04
								Total		31,501	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Lawrence Expressway
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
FUG_NB_LAW	Lawrence Expy Northbound	NB	4	477.1	0.30	20.6	68	1.3	50	32,000	9,843	105,947	2.275E-07	1.677E-07	2.6	1.21
FUG_SB_LAW	Lawrence Expy Southbound	SB	4	477.5	0.30	20.6	68	1.3	50	32,000	9,851	106,035	2.275E-07	1.677E-07	2.6	1.21
									Total	64,000						

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	50			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00210			
Brake Wear - Emissions per Vehicle (g/VMT)	0.00280			
Road Dust - Emissions per Vehicle (g/VMT)	0.01549			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02039			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_LAW

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	2278	3.82E-03	17	7.40%	2367	3.97E-03
2	0.00%	0	0.00E+00	10	4.38%	1403	2.36E-03	18	8.19%	2620	4.40E-03
3	0.40%	127	2.13E-04	11	4.66%	1491	2.50E-03	19	5.70%	1825	3.06E-03
4	0.25%	79	1.33E-04	12	5.89%	1885	3.17E-03	20	4.28%	1369	2.30E-03
5	0.49%	157	2.64E-04	13	6.15%	1968	3.31E-03	21	3.26%	1042	1.75E-03
6	0.89%	286	4.80E-04	14	6.04%	1931	3.24E-03	22	3.30%	1056	1.77E-03
7	3.78%	1210	2.03E-03	15	7.02%	2247	3.77E-03	23	2.46%	788	1.32E-03
8	7.77%	2485	4.17E-03	16	7.15%	2287	3.84E-03	24	1.87%	598	1.00E-03
								Total		31,501	

2040 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_LAW

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	2278	3.83E-03	17	7.40%	2367	3.98E-03
2	0.00%	0	0.00E+00	10	4.38%	1403	2.36E-03	18	8.19%	2620	4.40E-03
3	0.40%	127	2.13E-04	11	4.66%	1491	2.51E-03	19	5.70%	1825	3.07E-03
4	0.25%	79	1.33E-04	12	5.89%	1885	3.17E-03	20	4.28%	1369	2.30E-03
5	0.49%	157	2.64E-04	13	6.15%	1968	3.31E-03	21	3.26%	1042	1.75E-03
6	0.89%	286	4.81E-04	14	6.04%	1931	3.25E-03	22	3.30%	1056	1.77E-03
7	3.78%	1210	2.03E-03	15	7.02%	2247	3.78E-03	23	2.46%	788	1.33E-03
8	7.77%	2485	4.18E-03	16	7.15%	2287	3.84E-03	24	1.87%	598	1.00E-03
								Total		31,501	

El Camino Real Specific Plan, Santa Clara, CA - Lawrence Expressway Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
Off-Site 1st (1.5m) Floor Receptor Heights

Emission Year	2040
Receptor Information	Maximum Distance Off-Site Receptor
Number of Receptors	71
Receptor Height	1st (1.5m) Floors
Receptor Distances	152.6 meter line spacing

Meteorological Conditions

BAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Off-Site Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)			
	DPM	Exhaust TOG	Evaporative TOG	
2013-2017	0.0022	0.0860	0.1762	Eastside - 60.96 meters
2013-2017	0.0032	0.0991	0.2030	Westside - 15.24 meters

Off-Site PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)			
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5	
2013-2017	0.2450	0.2382	0.0068	Eastside - 60.96 meters
2013-2017	0.2823	0.2745	0.0079	Westside - 15.24 meters

El Camino Real Specific Plan, Santa Clara, CA - Lawrence Expressway Cancer Risk & PM2.5
Impacts at Off-Site 1st Floor Receptors - 1.5m receptor heights - Eastside 60.69m
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity 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: C_{air} = 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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age --> / Parameter	3rd Trimester	0 - 2	2 - 16	16 - 30
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2040	10	0.0022	0.0860	0.1762	0.030	0.007	0.0008	0.04
1	1	0 - 1	2040	10	0.0022	0.0860	0.1762	0.365	0.081	0.0097	0.46
2	1	1 - 2	2041	10	0.0022	0.0860	0.1762	0.365	0.081	0.0097	0.46
3	1	2 - 3	2042	3	0.0022	0.0860	0.1762	0.057	0.013	0.0015	0.07
4	1	3 - 4	2043	3	0.0022	0.0860	0.1762	0.057	0.013	0.0015	0.07
5	1	4 - 5	2044	3	0.0022	0.0860	0.1762	0.057	0.013	0.0015	0.07
6	1	5 - 6	2045	3	0.0022	0.0860	0.1762	0.057	0.013	0.0015	0.07
7	1	6 - 7	2046	3	0.0022	0.0860	0.1762	0.057	0.013	0.0015	0.07
8	1	7 - 8	2047	3	0.0022	0.0860	0.1762	0.057	0.013	0.0015	0.07
9	1	8 - 9	2048	3	0.0022	0.0860	0.1762	0.057	0.013	0.0015	0.07
10	1	9 - 10	2049	3	0.0022	0.0860	0.1762	0.057	0.013	0.0015	0.07
11	1	10 - 11	2050	3	0.0022	0.0860	0.1762	0.057	0.013	0.0015	0.07
12	1	11 - 12	2051	3	0.0022	0.0860	0.1762	0.057	0.013	0.0015	0.07
13	1	12 - 13	2052	3	0.0022	0.0860	0.1762	0.057	0.013	0.0015	0.07
14	1	13 - 14	2053	3	0.0022	0.0860	0.1762	0.057	0.013	0.0015	0.07
15	1	14 - 15	2054	3	0.0022	0.0860	0.1762	0.057	0.013	0.0015	0.07
16	1	15 - 16	2055	3	0.0022	0.0860	0.1762	0.057	0.013	0.0015	0.07
17	1	16-17	2056	1	0.0022	0.0860	0.1762	0.006	0.001	0.0002	0.01
18	1	17-18	2057	1	0.0022	0.0860	0.1762	0.006	0.001	0.0002	0.01
19	1	18-19	2058	1	0.0022	0.0860	0.1762	0.006	0.001	0.0002	0.01
20	1	19-20	2059	1	0.0022	0.0860	0.1762	0.006	0.001	0.0002	0.01
21	1	20-21	2060	1	0.0022	0.0860	0.1762	0.006	0.001	0.0002	0.01
22	1	21-22	2061	1	0.0022	0.0860	0.1762	0.006	0.001	0.0002	0.01
23	1	22-23	2062	1	0.0022	0.0860	0.1762	0.006	0.001	0.0002	0.01
24	1	23-24	2063	1	0.0022	0.0860	0.1762	0.006	0.001	0.0002	0.01
25	1	24-25	2064	1	0.0022	0.0860	0.1762	0.006	0.001	0.0002	0.01
26	1	25-26	2065	1	0.0022	0.0860	0.1762	0.006	0.001	0.0002	0.01
27	1	26-27	2066	1	0.0022	0.0860	0.1762	0.006	0.001	0.0002	0.01
28	1	27-28	2067	1	0.0022	0.0860	0.1762	0.006	0.001	0.0002	0.01
29	1	28-29	2068	1	0.0022	0.0860	0.1762	0.006	0.001	0.0002	0.01
30	1	29-30	2069	1	0.0022	0.0860	0.1762	0.006	0.001	0.0002	0.01
Total Increased Cancer Risk								1.65	0.366	0.044	**2.06**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0004	0.24	0.25

* Third trimester of pregnancy

El Camino Real Specific Plan, Santa Clara, CA - Lawrence Expressway Cancer Risk & PM2.5 Impacts at Off-Site 1st Floor Receptors - 1.5m receptor heights - Westside 15.24m
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity 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: C_{air} = 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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2040	10	0.0032	0.0991	0.2030	0.044	0.008	0.0009	0.05
1	1	0 - 1	2040	10	0.0032	0.0991	0.2030	0.531	0.093	0.0112	0.63
2	1	1 - 2	2041	10	0.0032	0.0991	0.2030	0.531	0.093	0.0112	0.63
3	1	2 - 3	2042	3	0.0032	0.0991	0.2030	0.084	0.015	0.0018	0.10
4	1	3 - 4	2043	3	0.0032	0.0991	0.2030	0.084	0.015	0.0018	0.10
5	1	4 - 5	2044	3	0.0032	0.0991	0.2030	0.084	0.015	0.0018	0.10
6	1	5 - 6	2045	3	0.0032	0.0991	0.2030	0.084	0.015	0.0018	0.10
7	1	6 - 7	2046	3	0.0032	0.0991	0.2030	0.084	0.015	0.0018	0.10
8	1	7 - 8	2047	3	0.0032	0.0991	0.2030	0.084	0.015	0.0018	0.10
9	1	8 - 9	2048	3	0.0032	0.0991	0.2030	0.084	0.015	0.0018	0.10
10	1	9 - 10	2049	3	0.0032	0.0991	0.2030	0.084	0.015	0.0018	0.10
11	1	10 - 11	2050	3	0.0032	0.0991	0.2030	0.084	0.015	0.0018	0.10
12	1	11 - 12	2051	3	0.0032	0.0991	0.2030	0.084	0.015	0.0018	0.10
13	1	12 - 13	2052	3	0.0032	0.0991	0.2030	0.084	0.015	0.0018	0.10
14	1	13 - 14	2053	3	0.0032	0.0991	0.2030	0.084	0.015	0.0018	0.10
15	1	14 - 15	2054	3	0.0032	0.0991	0.2030	0.084	0.015	0.0018	0.10
16	1	15 - 16	2055	3	0.0032	0.0991	0.2030	0.084	0.015	0.0018	0.10
17	1	16-17	2056	1	0.0032	0.0991	0.2030	0.009	0.002	0.0002	0.01
18	1	17-18	2057	1	0.0032	0.0991	0.2030	0.009	0.002	0.0002	0.01
19	1	18-19	2058	1	0.0032	0.0991	0.2030	0.009	0.002	0.0002	0.01
20	1	19-20	2059	1	0.0032	0.0991	0.2030	0.009	0.002	0.0002	0.01
21	1	20-21	2060	1	0.0032	0.0991	0.2030	0.009	0.002	0.0002	0.01
22	1	21-22	2061	1	0.0032	0.0991	0.2030	0.009	0.002	0.0002	0.01
23	1	22-23	2062	1	0.0032	0.0991	0.2030	0.009	0.002	0.0002	0.01
24	1	23-24	2063	1	0.0032	0.0991	0.2030	0.009	0.002	0.0002	0.01
25	1	24-25	2064	1	0.0032	0.0991	0.2030	0.009	0.002	0.0002	0.01
26	1	25-26	2065	1	0.0032	0.0991	0.2030	0.009	0.002	0.0002	0.01
27	1	26-27	2066	1	0.0032	0.0991	0.2030	0.009	0.002	0.0002	0.01
28	1	27-28	2067	1	0.0032	0.0991	0.2030	0.009	0.002	0.0002	0.01
29	1	28-29	2068	1	0.0032	0.0991	0.2030	0.009	0.002	0.0002	0.01
30	1	29-30	2069	1	0.0032	0.0991	0.2030	0.009	0.002	0.0002	0.01
Total Increased Cancer Risk								2.40	0.421	0.051	**2.88**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.001	0.27	0.28

* Third trimester of pregnancy

Kiely Blvd-Bowers Ave 2040 Traffic Emissions and Health Risk Calculations

Analysis Year = ***2040***

Vehicle Type	2040 Caltrans Vehicles (veh/day)	2040 Vehicles (veh/day)
Total	**19,000**	**19,000**

Increase From 2040	1.00
Vehicles/Direction	**9,500**
Avg Vehicles/Hour/Direction	396

Traffic Data Year = ***2040***

El Camino Real Specific Plan TIA 2019 & 2024	AADT Total	Total Truck	Trucks by Axle 2	3	4	5
ECR / Kiely Boulevard-Bowers Avenue	19,000	667	526	74	21	47
			78.81%	11.07%	3.10%	7.02%
Percent of Total Vehicles		3.51%	2.77%	0.39%	0.11%	0.25%

Traffic Increase per Year (%) = *1.00%*

667	Trucks	100%
2.8%	MDT	
0.7%	HDT	
3.5%	Total	
96.5%	Other	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Kiely Boulevard-Bowers Avenue
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
DPM_NB_KB	Kiely Blvd-Bowers Ave Northbound	NB	2	197.0	0.12	13.3	43.7	3.4	35	9,500	2,623	28,235	8.415E-10	6.205E-10	6.8	3.16
DPM_SB_KB	Kiely Blvd-Bowers Ave Southbound	SB	2	197.1	0.12	13.3	43.7	3.4	35	9,500	2,624	28,249	8.415E-10	6.205E-10	6.8	3.16
									Total	19,000						

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00016			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and DPM Emissions - DPM_NB_KB

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	4.08%	388	2.16E-06	9	6.55%	622	3.47E-06	17	5.64%	535	2.99E-06
2	2.74%	260	1.45E-06	10	7.51%	714	3.98E-06	18	3.17%	301	1.68E-06
3	2.90%	275	1.54E-06	11	6.44%	612	3.41E-06	19	2.20%	209	1.17E-06
4	3.11%	296	1.65E-06	12	6.98%	663	3.70E-06	20	0.86%	82	4.55E-07
5	2.09%	199	1.11E-06	13	6.28%	597	3.33E-06	21	2.95%	280	1.56E-06
6	3.22%	306	1.71E-06	14	6.17%	586	3.27E-06	22	4.19%	398	2.22E-06
7	6.01%	571	3.18E-06	15	5.26%	500	2.79E-06	23	2.68%	255	1.42E-06
8	4.35%	413	2.30E-06	16	3.76%	357	1.99E-06	24	0.86%	82	4.55E-07
								Total		9,500	

2040 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_KB

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	4.08%	388	2.16E-06	9	6.55%	622	3.47E-06	17	5.64%	535	2.99E-06
2	2.74%	260	1.45E-06	10	7.51%	714	3.98E-06	18	3.17%	301	1.68E-06
3	2.90%	275	1.54E-06	11	6.44%	612	3.41E-06	19	2.20%	209	1.17E-06
4	3.11%	296	1.65E-06	12	6.98%	663	3.70E-06	20	0.86%	82	4.55E-07
5	2.09%	199	1.11E-06	13	6.28%	597	3.33E-06	21	2.95%	280	1.56E-06
6	3.22%	306	1.71E-06	14	6.17%	586	3.27E-06	22	4.19%	398	2.22E-06
7	6.01%	571	3.19E-06	15	5.26%	500	2.79E-06	23	2.68%	255	1.42E-06
8	4.35%	413	2.30E-06	16	3.76%	357	1.99E-06	24	0.86%	82	4.55E-07
								Total		9,500	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Kiely Boulevard-Bowers Avenue
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
PM25_NB_KB	Kiely Blvd-Bowers Ave Northbound	NB	2	197.0	0.12	13.3	44	1.3	35	9,500	2,623	28,235	3.192E-09	2.353E-09	2.6	1.21
PM25_SB_KB	Kiely Blvd-Bowers Ave Southbound	SB	2	197.1	0.12	13.3	44	1.3	35	9,500	2,624	28,249	3.192E-09	2.353E-09	2.6	1.21
									Total	19,000						

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.000622			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and PM2.5 Emissions - PM25_NB_KB

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	109	2.31E-06	9	7.12%	676	1.43E-05	17	7.40%	703	1.49E-05
2	0.41%	39	8.30E-07	10	4.38%	416	8.81E-06	18	8.19%	778	1.65E-05
3	0.40%	38	7.96E-07	11	4.66%	443	9.36E-06	19	5.70%	542	1.15E-05
4	0.25%	23	4.96E-07	12	5.89%	560	1.18E-05	20	4.28%	407	8.60E-06
5	0.49%	47	9.86E-07	13	6.15%	584	1.24E-05	21	3.26%	309	6.54E-06
6	0.89%	85	1.80E-06	14	6.04%	573	1.21E-05	22	3.30%	313	6.63E-06
7	3.78%	359	7.60E-06	15	7.02%	667	1.41E-05	23	2.46%	234	4.95E-06
8	7.77%	738	1.56E-05	16	7.15%	679	1.44E-05	24	1.87%	178	3.75E-06
								Total		9,500	

2040 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM25_SB_KB

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	109	2.31E-06	9	7.12%	676	1.43E-05	17	7.40%	703	1.49E-05
2	0.41%	39	8.30E-07	10	4.38%	416	8.81E-06	18	8.19%	778	1.65E-05
3	0.40%	38	7.97E-07	11	4.66%	443	9.37E-06	19	5.70%	542	1.15E-05
4	0.25%	23	4.97E-07	12	5.89%	560	1.18E-05	20	4.28%	407	8.60E-06
5	0.49%	47	9.87E-07	13	6.15%	584	1.24E-05	21	3.26%	309	6.55E-06
6	0.89%	85	1.80E-06	14	6.04%	573	1.21E-05	22	3.30%	313	6.63E-06
7	3.78%	359	7.60E-06	15	7.02%	667	1.41E-05	23	2.46%	234	4.95E-06
8	7.77%	738	1.56E-05	16	7.15%	679	1.44E-05	24	1.87%	178	3.76E-06
								Total		9,500	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Kiely Boulevard-Bowers Avenue
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEXH_NB_KB	Kiely Blvd-Bowers Ave Northbound	NB	2	197.0	0.12	13.3	44	1.3	35	9,500	2,623	28,235	4.966E-08	3.662E-08	2.6	1.21
TEXH_SB_KB	Kiely Blvd-Bowers Ave Southbound	SB	2	197.1	0.12	13.3	44	1.3	35	9,500	2,624	28,249	4.966E-08	3.662E-08	2.6	1.21
									Total	19,000						

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00968			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_KB

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	676	2.23E-04	17	7.40%	703	2.31E-04
2	0.00%	0	0.00E+00	10	4.38%	416	1.37E-04	18	8.19%	778	2.56E-04
3	0.40%	38	1.24E-05	11	4.66%	443	1.46E-04	19	5.70%	542	1.78E-04
4	0.25%	23	7.72E-06	12	5.89%	560	1.84E-04	20	4.28%	407	1.34E-04
5	0.49%	47	1.53E-05	13	6.15%	584	1.92E-04	21	3.26%	309	1.02E-04
6	0.89%	85	2.79E-05	14	6.04%	573	1.89E-04	22	3.30%	313	1.03E-04
7	3.78%	359	1.18E-04	15	7.02%	667	2.19E-04	23	2.46%	234	7.70E-05
8	7.77%	738	2.43E-04	16	7.15%	679	2.23E-04	24	1.87%	178	5.84E-05
								Total		9,352	

2040 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_KB

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	676	2.23E-04	17	7.40%	703	2.31E-04
2	0.00%	0	0.00E+00	10	4.38%	416	1.37E-04	18	8.19%	778	2.56E-04
3	0.40%	38	1.24E-05	11	4.66%	443	1.46E-04	19	5.70%	542	1.78E-04
4	0.25%	23	7.73E-06	12	5.89%	560	1.84E-04	20	4.28%	407	1.34E-04
5	0.49%	47	1.54E-05	13	6.15%	584	1.92E-04	21	3.26%	309	1.02E-04
6	0.89%	85	2.80E-05	14	6.04%	573	1.89E-04	22	3.30%	313	1.03E-04
7	3.78%	359	1.18E-04	15	7.02%	667	2.20E-04	23	2.46%	234	7.71E-05
8	7.77%	738	2.43E-04	16	7.15%	679	2.24E-04	24	1.87%	178	5.85E-05
								Total		9,352	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Kiely Boulevard-Bowers Avenue
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEVAP_NB_KB	Kiely Blvd-Bowers Ave Northbound	NB	2	197.0	0.12	13.3	44	1.3	35	9,500	2,623	28,235	1.106E-07	8.154E-08	2.6	1.21
TEVAP_SB_KB	Kiely Blvd-Bowers Ave Southbound	SB	2	197.1	0.12	13.3	44	1.3	35	9,500	2,624	28,249	1.106E-07	8.154E-08	2.6	1.21
									Total	19,000						

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle per Hour (g/hour)	0.75436			
Emissions per Vehicle per Mile (g/VMT)	0.02155			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_KB

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	676	4.96E-04	17	7.40%	703	5.15E-04
2	0.00%	0	0.00E+00	10	4.38%	416	3.05E-04	18	8.19%	778	5.70E-04
3	0.40%	38	2.76E-05	11	4.66%	443	3.24E-04	19	5.70%	542	3.97E-04
4	0.25%	23	1.72E-05	12	5.89%	560	4.10E-04	20	4.28%	407	2.98E-04
5	0.49%	47	3.42E-05	13	6.15%	584	4.28E-04	21	3.26%	309	2.27E-04
6	0.89%	85	6.22E-05	14	6.04%	573	4.20E-04	22	3.30%	313	2.30E-04
7	3.78%	359	2.63E-04	15	7.02%	667	4.89E-04	23	2.46%	234	1.72E-04
8	7.77%	738	5.41E-04	16	7.15%	679	4.98E-04	24	1.87%	178	1.30E-04
								Total		9,352	

2040 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_KB

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	676	4.96E-04	17	7.40%	703	5.15E-04
2	0.00%	0	0.00E+00	10	4.38%	416	3.05E-04	18	8.19%	778	5.70E-04
3	0.40%	38	2.76E-05	11	4.66%	443	3.25E-04	19	5.70%	542	3.97E-04
4	0.25%	23	1.72E-05	12	5.89%	560	4.10E-04	20	4.28%	407	2.98E-04
5	0.49%	47	3.42E-05	13	6.15%	584	4.29E-04	21	3.26%	309	2.27E-04
6	0.89%	85	6.23E-05	14	6.04%	573	4.20E-04	22	3.30%	313	2.30E-04
7	3.78%	359	2.63E-04	15	7.02%	667	4.89E-04	23	2.46%	234	1.72E-04
8	7.77%	738	5.41E-04	16	7.15%	679	4.98E-04	24	1.87%	178	1.30E-04
								Total		9,352	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Kiely Boulevard-Bowers Avenue
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
FUG_NB_KB	Kiely Blvd-Bowers Ave Northbound	NB	2	197.0	0.12	13.3	44	1.3	35	9,500	2,623	28,235	1.176E-07	8.668E-08	2.6	1.21
FUG_SB_KB	Kiely Blvd-Bowers Ave Southbound	SB	2	197.1	0.12	13.3	44	1.3	35	9,500	2,624	28,249	1.176E-07	8.668E-08	2.6	1.21
									Total	19,000						

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00210			
Brake Wear - Emissions per Vehicle (g/VMT)	0.00532			
Road Dust - Emissions per Vehicle (g/VMT)	0.01549			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02291			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_KB

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	676	5.27E-04	17	7.40%	703	5.47E-04
2	0.00%	0	0.00E+00	10	4.38%	416	3.24E-04	18	8.19%	778	6.06E-04
3	0.40%	38	2.93E-05	11	4.66%	443	3.45E-04	19	5.70%	542	4.22E-04
4	0.25%	23	1.83E-05	12	5.89%	560	4.36E-04	20	4.28%	407	3.17E-04
5	0.49%	47	3.63E-05	13	6.15%	584	4.55E-04	21	3.26%	309	2.41E-04
6	0.89%	85	6.61E-05	14	6.04%	573	4.47E-04	22	3.30%	313	2.44E-04
7	3.78%	359	2.80E-04	15	7.02%	667	5.20E-04	23	2.46%	234	1.82E-04
8	7.77%	738	5.75E-04	16	7.15%	679	5.29E-04	24	1.87%	178	1.38E-04
								Total		9,352	

2040 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_KB

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	676	5.27E-04	17	7.40%	703	5.48E-04
2	0.00%	0	0.00E+00	10	4.38%	416	3.25E-04	18	8.19%	778	6.06E-04
3	0.40%	38	2.93E-05	11	4.66%	443	3.45E-04	19	5.70%	542	4.22E-04
4	0.25%	23	1.83E-05	12	5.89%	560	4.36E-04	20	4.28%	407	3.17E-04
5	0.49%	47	3.63E-05	13	6.15%	584	4.55E-04	21	3.26%	309	2.41E-04
6	0.89%	85	6.62E-05	14	6.04%	573	4.47E-04	22	3.30%	313	2.44E-04
7	3.78%	359	2.80E-04	15	7.02%	667	5.20E-04	23	2.46%	234	1.82E-04
8	7.77%	738	5.75E-04	16	7.15%	679	5.29E-04	24	1.87%	178	1.38E-04
								Total		9,352	

El Camino Real Specific Plan, Santa Clara, CA - Kiely Blvd-Bowers Ave Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
Off-Site 1st (1.5m) Floor Receptor Heights

Emission Year	2040
Receptor Information	Maximum Distance Off-Site Receptor
Number of Receptors	48
Receptor Height	1st (1.5m) Floors
Receptor Distances	76.2 meter line spacing

Meteorological Conditions

BAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Off-Site Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)			
	DPM	Exhaust TOG	Evaporative TOG	
2013-2017	0.0009	0.0908	0.2023	Eastside - 7.62 meters
2013-2017	0.0008	0.0523	0.1164	Westside - 7.62 meters

Off-Site PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)			
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5	
2013-2017	0.2209	0.2151	0.0058	Eastside - 7.62 meters
2013-2017	0.1271	0.1238	0.0034	Westside - 7.62 meters

El Camino Real Specific Plan, Santa Clara, CA - Kiely Blvd-Bowers Ave Cancer Risk & PM2.5
Impacts at Off-Site 1st Floor Receptors - 1.5m receptor heights - Eastside 7.62m
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity 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: C_{air} = 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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2040	10	0.0009	0.0908	0.2023	0.012	0.007	0.0009	0.02
1	1	0 - 1	2040	10	0.0009	0.0908	0.2023	0.140	0.085	0.0112	0.24
2	1	1 - 2	2041	10	0.0009	0.0908	0.2023	0.140	0.085	0.0112	0.24
3	1	2 - 3	2042	3	0.0009	0.0908	0.2023	0.022	0.013	0.0018	0.04
4	1	3 - 4	2043	3	0.0009	0.0908	0.2023	0.022	0.013	0.0018	0.04
5	1	4 - 5	2044	3	0.0009	0.0908	0.2023	0.022	0.013	0.0018	0.04
6	1	5 - 6	2045	3	0.0009	0.0908	0.2023	0.022	0.013	0.0018	0.04
7	1	6 - 7	2046	3	0.0009	0.0908	0.2023	0.022	0.013	0.0018	0.04
8	1	7 - 8	2047	3	0.0009	0.0908	0.2023	0.022	0.013	0.0018	0.04
9	1	8 - 9	2048	3	0.0009	0.0908	0.2023	0.022	0.013	0.0018	0.04
10	1	9 - 10	2049	3	0.0009	0.0908	0.2023	0.022	0.013	0.0018	0.04
11	1	10 - 11	2050	3	0.0009	0.0908	0.2023	0.022	0.013	0.0018	0.04
12	1	11 - 12	2051	3	0.0009	0.0908	0.2023	0.022	0.013	0.0018	0.04
13	1	12 - 13	2052	3	0.0009	0.0908	0.2023	0.022	0.013	0.0018	0.04
14	1	13 - 14	2053	3	0.0009	0.0908	0.2023	0.022	0.013	0.0018	0.04
15	1	14 - 15	2054	3	0.0009	0.0908	0.2023	0.022	0.013	0.0018	0.04
16	1	15 - 16	2055	3	0.0009	0.0908	0.2023	0.022	0.013	0.0018	0.04
17	1	16-17	2056	1	0.0009	0.0908	0.2023	0.002	0.001	0.0002	0.00
18	1	17-18	2057	1	0.0009	0.0908	0.2023	0.002	0.001	0.0002	0.00
19	1	18-19	2058	1	0.0009	0.0908	0.2023	0.002	0.001	0.0002	0.00
20	1	19-20	2059	1	0.0009	0.0908	0.2023	0.002	0.001	0.0002	0.00
21	1	20-21	2060	1	0.0009	0.0908	0.2023	0.002	0.001	0.0002	0.00
22	1	21-22	2061	1	0.0009	0.0908	0.2023	0.002	0.001	0.0002	0.00
23	1	22-23	2062	1	0.0009	0.0908	0.2023	0.002	0.001	0.0002	0.00
24	1	23-24	2063	1	0.0009	0.0908	0.2023	0.002	0.001	0.0002	0.00
25	1	24-25	2064	1	0.0009	0.0908	0.2023	0.002	0.001	0.0002	0.00
26	1	25-26	2065	1	0.0009	0.0908	0.2023	0.002	0.001	0.0002	0.00
27	1	26-27	2066	1	0.0009	0.0908	0.2023	0.002	0.001	0.0002	0.00
28	1	27-28	2067	1	0.0009	0.0908	0.2023	0.002	0.001	0.0002	0.00
29	1	28-29	2068	1	0.0009	0.0908	0.2023	0.002	0.001	0.0002	0.00
30	1	29-30	2069	1	0.0009	0.0908	0.2023	0.002	0.001	0.0002	0.00
Total Increased Cancer Risk								0.63	0.386	0.051	**1.07**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0002	0.22	0.22

* Third trimester of pregnancy

El Camino Real Specific Plan, Santa Clara, CA - Kiely Blvd-Bowers Ave Cancer Risk & PM2.5
Impacts at Off-Site 1st Floor Receptors - 1.5m receptor heights - Westside 7.62m
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity 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: C_{air} = 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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2040	10	0.0008	0.0523	0.1164	0.010	0.004	0.0005	0.01
1	1	0 - 1	2040	10	0.0008	0.0523	0.1164	0.123	0.049	0.0064	0.18
2	1	1 - 2	2041	10	0.0008	0.0523	0.1164	0.123	0.049	0.0064	0.18
3	1	2 - 3	2042	3	0.0008	0.0523	0.1164	0.019	0.008	0.0010	0.03
4	1	3 - 4	2043	3	0.0008	0.0523	0.1164	0.019	0.008	0.0010	0.03
5	1	4 - 5	2044	3	0.0008	0.0523	0.1164	0.019	0.008	0.0010	0.03
6	1	5 - 6	2045	3	0.0008	0.0523	0.1164	0.019	0.008	0.0010	0.03
7	1	6 - 7	2046	3	0.0008	0.0523	0.1164	0.019	0.008	0.0010	0.03
8	1	7 - 8	2047	3	0.0008	0.0523	0.1164	0.019	0.008	0.0010	0.03
9	1	8 - 9	2048	3	0.0008	0.0523	0.1164	0.019	0.008	0.0010	0.03
10	1	9 - 10	2049	3	0.0008	0.0523	0.1164	0.019	0.008	0.0010	0.03
11	1	10 - 11	2050	3	0.0008	0.0523	0.1164	0.019	0.008	0.0010	0.03
12	1	11 - 12	2051	3	0.0008	0.0523	0.1164	0.019	0.008	0.0010	0.03
13	1	12 - 13	2052	3	0.0008	0.0523	0.1164	0.019	0.008	0.0010	0.03
14	1	13 - 14	2053	3	0.0008	0.0523	0.1164	0.019	0.008	0.0010	0.03
15	1	14 - 15	2054	3	0.0008	0.0523	0.1164	0.019	0.008	0.0010	0.03
16	1	15 - 16	2055	3	0.0008	0.0523	0.1164	0.019	0.008	0.0010	0.03
17	1	16-17	2056	1	0.0008	0.0523	0.1164	0.002	0.001	0.0001	0.00
18	1	17-18	2057	1	0.0008	0.0523	0.1164	0.002	0.001	0.0001	0.00
19	1	18-19	2058	1	0.0008	0.0523	0.1164	0.002	0.001	0.0001	0.00
20	1	19-20	2059	1	0.0008	0.0523	0.1164	0.002	0.001	0.0001	0.00
21	1	20-21	2060	1	0.0008	0.0523	0.1164	0.002	0.001	0.0001	0.00
22	1	21-22	2061	1	0.0008	0.0523	0.1164	0.002	0.001	0.0001	0.00
23	1	22-23	2062	1	0.0008	0.0523	0.1164	0.002	0.001	0.0001	0.00
24	1	23-24	2063	1	0.0008	0.0523	0.1164	0.002	0.001	0.0001	0.00
25	1	24-25	2064	1	0.0008	0.0523	0.1164	0.002	0.001	0.0001	0.00
26	1	25-26	2065	1	0.0008	0.0523	0.1164	0.002	0.001	0.0001	0.00
27	1	26-27	2066	1	0.0008	0.0523	0.1164	0.002	0.001	0.0001	0.00
28	1	27-28	2067	1	0.0008	0.0523	0.1164	0.002	0.001	0.0001	0.00
29	1	28-29	2068	1	0.0008	0.0523	0.1164	0.002	0.001	0.0001	0.00
30	1	29-30	2069	1	0.0008	0.0523	0.1164	0.002	0.001	0.0001	0.00
Total Increased Cancer Risk								0.56	0.222	0.029	**0.81**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.000	0.12	0.13

* Third trimester of pregnancy

San Tomas Expressway 2040 Traffic Emissions and Health Risk Calculations

Analysis Year = ***2040***

Vehicle Type	2040 Caltrans Vehicles (veh/day)	2040 Vehicles (veh/day)
Total	**71,000**	**71,000**

Increase From 2040	1.00
Vehicles/Direction	**35,500**
Avg Vehicles/Hour/Direction	1,479

Traffic Data Year = ***2040***

El Camino Real Specific Plan TIA 2019 & 2024	AADT Total	Total Truck	Trucks by Axle 2	3	4	5
ECR / San Tomas Expressway	71,000	2,492	1,964	276	77	175
			78.81%	11.07%	3.10%	7.02%
Percent of Total Vehicles		3.51%	2.77%	0.39%	0.11%	0.25%

Traffic Increase per Year (%) = *1.00%*

2,492	Trucks	100%
2.8%	MDT	
0.7%	HDT	
3.5%	Total	
96.5%	Other	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - San Tomas Expressway
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
DPM_NB_STE	San Tomas Expy Northbound	NB	4	144.6	0.09	20.6	67.7	3.4	45	35,500	2,983	32,110	2.463E-09	1.816E-09	6.8	3.16
DPM_SB_STE	San Tomas Expy Southbound	SB	4	144.6	0.09	20.6	67.7	3.4	45	35,500	2,983	32,110	2.463E-09	1.816E-09	6.8	3.16
									Total	71,000						

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	45			
Emissions per Vehicle (g/VMT)	0.00020			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and DPM Emissions - DPM_NB_STE

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	4.08%	1448	7.19E-06	9	6.55%	2325	1.15E-05	17	5.64%	2001	9.94E-06
2	2.74%	972	4.83E-06	10	7.51%	2668	1.32E-05	18	3.17%	1124	5.58E-06
3	2.90%	1029	5.11E-06	11	6.44%	2287	1.14E-05	19	2.20%	781	3.88E-06
4	3.11%	1105	5.49E-06	12	6.98%	2477	1.23E-05	20	0.86%	305	1.51E-06
5	2.09%	743	3.69E-06	13	6.28%	2229	1.11E-05	21	2.95%	1048	5.21E-06
6	3.22%	1143	5.68E-06	14	6.17%	2191	1.09E-05	22	4.19%	1486	7.38E-06
7	6.01%	2134	1.06E-05	15	5.26%	1867	9.27E-06	23	2.68%	953	4.73E-06
8	4.35%	1543	7.67E-06	16	3.76%	1334	6.62E-06	24	0.86%	305	1.51E-06
								Total		35,500	

2040 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_STE

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	4.08%	1448	7.19E-06	9	6.55%	2325	1.15E-05	17	5.64%	2001	9.94E-06
2	2.74%	972	4.83E-06	10	7.51%	2668	1.32E-05	18	3.17%	1124	5.58E-06
3	2.90%	1029	5.11E-06	11	6.44%	2287	1.14E-05	19	2.20%	781	3.88E-06
4	3.11%	1105	5.49E-06	12	6.98%	2477	1.23E-05	20	0.86%	305	1.51E-06
5	2.09%	743	3.69E-06	13	6.28%	2229	1.11E-05	21	2.95%	1048	5.21E-06
6	3.22%	1143	5.68E-06	14	6.17%	2191	1.09E-05	22	4.19%	1486	7.38E-06
7	6.01%	2134	1.06E-05	15	5.26%	1867	9.27E-06	23	2.68%	953	4.73E-06
8	4.35%	1543	7.67E-06	16	3.76%	1334	6.62E-06	24	0.86%	305	1.51E-06
								Total		35,500	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - San Tomas Expressway
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = **2040**

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
PM25_NB_STE	San Tomas Expy Northbound	NB	4	144.6	0.09	20.6	68	1.3	45	35,500	2,983	32,110	6.930E-09	5.110E-09	2.6	1.21
PM25_SB_STE	San Tomas Expy Southbound	SB	4	144.6	0.09	20.6	68	1.3	45	35,500	2,983	32,110	6.930E-09	5.110E-09	2.6	1.21
									Total	71,000						

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	45			
Emissions per Vehicle (g/VMT)	0.000560			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and PM2.5 Emissions - PM25_NB_STE

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	407	5.69E-06	9	7.12%	2527	3.53E-05	17	7.40%	2626	3.67E-05
2	0.41%	147	2.05E-06	10	4.38%	1556	2.18E-05	18	8.19%	2907	4.06E-05
3	0.40%	141	1.97E-06	11	4.66%	1654	2.31E-05	19	5.70%	2024	2.83E-05
4	0.25%	88	1.23E-06	12	5.89%	2091	2.92E-05	20	4.28%	1519	2.12E-05
5	0.49%	174	2.44E-06	13	6.15%	2184	3.05E-05	21	3.26%	1156	1.62E-05
6	0.89%	317	4.43E-06	14	6.04%	2143	2.99E-05	22	3.30%	1171	1.64E-05
7	3.78%	1343	1.88E-05	15	7.02%	2492	3.48E-05	23	2.46%	875	1.22E-05
8	7.77%	2757	3.85E-05	16	7.15%	2538	3.55E-05	24	1.87%	663	9.27E-06
								Total		35,500	

2040 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM25_SB_STE

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	407	5.69E-06	9	7.12%	2527	3.53E-05	17	7.40%	2626	3.67E-05
2	0.41%	147	2.05E-06	10	4.38%	1556	2.18E-05	18	8.19%	2907	4.06E-05
3	0.40%	141	1.97E-06	11	4.66%	1654	2.31E-05	19	5.70%	2024	2.83E-05
4	0.25%	88	1.23E-06	12	5.89%	2091	2.92E-05	20	4.28%	1519	2.12E-05
5	0.49%	174	2.44E-06	13	6.15%	2184	3.05E-05	21	3.26%	1156	1.62E-05
6	0.89%	317	4.43E-06	14	6.04%	2143	2.99E-05	22	3.30%	1171	1.64E-05
7	3.78%	1343	1.88E-05	15	7.02%	2492	3.48E-05	23	2.46%	875	1.22E-05
8	7.77%	2757	3.85E-05	16	7.15%	2538	3.55E-05	24	1.87%	663	9.27E-06
								Total		35,500	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - San Tomas Expressway
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEXH_NB_STE	San Tomas Expy Northbound	NB	4	144.6	0.09	20.6	68	1.3	45	35,500	2,983	32,110	9.517E-08	7.017E-08	2.6	1.21
TEXH_SB_STE	San Tomas Expy Southbound	SB	4	144.6	0.09	20.6	68	1.3	45	35,500	2,983	32,110	9.517E-08	7.017E-08	2.6	1.21
									Total	71,000						

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	45			
Emissions per Vehicle (g/VMT)	0.00769			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_STE

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	2527	4.85E-04	17	7.40%	2626	5.04E-04
2	0.00%	0	0.00E+00	10	4.38%	1556	2.99E-04	18	8.19%	2907	5.58E-04
3	0.40%	141	2.70E-05	11	4.66%	1654	3.17E-04	19	5.70%	2024	3.89E-04
4	0.25%	88	1.68E-05	12	5.89%	2091	4.01E-04	20	4.28%	1519	2.92E-04
5	0.49%	174	3.34E-05	13	6.15%	2184	4.19E-04	21	3.26%	1156	2.22E-04
6	0.89%	317	6.09E-05	14	6.04%	2143	4.11E-04	22	3.30%	1171	2.25E-04
7	3.78%	1343	2.58E-04	15	7.02%	2492	4.78E-04	23	2.46%	875	1.68E-04
8	7.77%	2757	5.29E-04	16	7.15%	2538	4.87E-04	24	1.87%	663	1.27E-04
								Total		34,946	

2040 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_STE

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	2527	4.85E-04	17	7.40%	2626	5.04E-04
2	0.00%	0	0.00E+00	10	4.38%	1556	2.99E-04	18	8.19%	2907	5.58E-04
3	0.40%	141	2.70E-05	11	4.66%	1654	3.17E-04	19	5.70%	2024	3.89E-04
4	0.25%	88	1.68E-05	12	5.89%	2091	4.01E-04	20	4.28%	1519	2.92E-04
5	0.49%	174	3.34E-05	13	6.15%	2184	4.19E-04	21	3.26%	1156	2.22E-04
6	0.89%	317	6.09E-05	14	6.04%	2143	4.11E-04	22	3.30%	1171	2.25E-04
7	3.78%	1343	2.58E-04	15	7.02%	2492	4.78E-04	23	2.46%	875	1.68E-04
8	7.77%	2757	5.29E-04	16	7.15%	2538	4.87E-04	24	1.87%	663	1.27E-04
								Total		34,946	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - San Tomas Expressway
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEVAP_NB_STE	San Tomas Expy Northbound	NB	4	144.6	0.09	20.6	68	1.3	45	35,500	2,983	32,110	2.075E-07	1.530E-07	2.6	1.21
TEVAP_SB_STE	San Tomas Expy Southbound	SB	4	144.6	0.09	20.6	68	1.3	45	35,500	2,983	32,110	2.075E-07	1.530E-07	2.6	1.21
									Total	71,000						

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	45			
Emissions per Vehicle per Hour (g/hour)	0.75436			
Emissions per Vehicle per Mile (g/VMT)	0.01676			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_STE

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	2527	1.06E-03	17	7.40%	2626	1.10E-03
2	0.00%	0	0.00E+00	10	4.38%	1556	6.51E-04	18	8.19%	2907	1.22E-03
3	0.40%	141	5.89E-05	11	4.66%	1654	6.92E-04	19	5.70%	2024	8.47E-04
4	0.25%	88	3.67E-05	12	5.89%	2091	8.75E-04	20	4.28%	1519	6.36E-04
5	0.49%	174	7.29E-05	13	6.15%	2184	9.14E-04	21	3.26%	1156	4.84E-04
6	0.89%	317	1.33E-04	14	6.04%	2143	8.96E-04	22	3.30%	1171	4.90E-04
7	3.78%	1343	5.62E-04	15	7.02%	2492	1.04E-03	23	2.46%	875	3.66E-04
8	7.77%	2757	1.15E-03	16	7.15%	2538	1.06E-03	24	1.87%	663	2.78E-04
								Total		34,946	

2040 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_STE

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	2527	1.06E-03	17	7.40%	2626	1.10E-03
2	0.00%	0	0.00E+00	10	4.38%	1556	6.51E-04	18	8.19%	2907	1.22E-03
3	0.40%	141	5.89E-05	11	4.66%	1654	6.92E-04	19	5.70%	2024	8.47E-04
4	0.25%	88	3.67E-05	12	5.89%	2091	8.75E-04	20	4.28%	1519	6.36E-04
5	0.49%	174	7.29E-05	13	6.15%	2184	9.14E-04	21	3.26%	1156	4.84E-04
6	0.89%	317	1.33E-04	14	6.04%	2143	8.96E-04	22	3.30%	1171	4.90E-04
7	3.78%	1343	5.62E-04	15	7.02%	2492	1.04E-03	23	2.46%	875	3.66E-04
8	7.77%	2757	1.15E-03	16	7.15%	2538	1.06E-03	24	1.87%	663	2.78E-04
								Total		34,946	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - San Tomas Expressway
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
FUG_NB_STE	San Tomas Expy Northbound	NB	4	144.6	0.09	20.6	68	1.3	45	35,500	2,983	32,110	2.648E-07	1.952E-07	2.6	1.21
FUG_SB_STE	San Tomas Expy Southbound	SB	4	144.6	0.09	20.6	68	1.3	45	35,500	2,983	32,110	2.648E-07	1.952E-07	2.6	1.21
									Total	71,000						

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	45			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00210			
Brake Wear - Emissions per Vehicle (g/VMT)	0.00380			
Road Dust - Emissions per Vehicle (g/VMT)	0.01549			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02140			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_STE

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	2527	1.35E-03	17	7.40%	2626	1.40E-03
2	0.00%	0	0.00E+00	10	4.38%	1556	8.31E-04	18	8.19%	2907	1.55E-03
3	0.40%	141	7.51E-05	11	4.66%	1654	8.83E-04	19	5.70%	2024	1.08E-03
4	0.25%	88	4.68E-05	12	5.89%	2091	1.12E-03	20	4.28%	1519	8.11E-04
5	0.49%	174	9.30E-05	13	6.15%	2184	1.17E-03	21	3.26%	1156	6.17E-04
6	0.89%	317	1.69E-04	14	6.04%	2143	1.14E-03	22	3.30%	1171	6.26E-04
7	3.78%	1343	7.17E-04	15	7.02%	2492	1.33E-03	23	2.46%	875	4.67E-04
8	7.77%	2757	1.47E-03	16	7.15%	2538	1.36E-03	24	1.87%	663	3.54E-04
								Total		34,946	

2040 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_STE

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	2527	1.35E-03	17	7.40%	2626	1.40E-03
2	0.00%	0	0.00E+00	10	4.38%	1556	8.31E-04	18	8.19%	2907	1.55E-03
3	0.40%	141	7.51E-05	11	4.66%	1654	8.83E-04	19	5.70%	2024	1.08E-03
4	0.25%	88	4.68E-05	12	5.89%	2091	1.12E-03	20	4.28%	1519	8.11E-04
5	0.49%	174	9.30E-05	13	6.15%	2184	1.17E-03	21	3.26%	1156	6.17E-04
6	0.89%	317	1.69E-04	14	6.04%	2143	1.14E-03	22	3.30%	1171	6.26E-04
7	3.78%	1343	7.17E-04	15	7.02%	2492	1.33E-03	23	2.46%	875	4.67E-04
8	7.77%	2757	1.47E-03	16	7.15%	2538	1.36E-03	24	1.87%	663	3.54E-04
								Total		34,946	

El Camino Real Specific Plan, Santa Clara, CA - San Tomas Expressway Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
Off-Site 1st (1.5m) Floor Receptor Heights

Emission Year	2040
Receptor Information	Maximum Distance Off-Site Receptor
Number of Receptors	48
Receptor Height	1st (1.5m) Floors
Receptor Distances	53.34 meter line spacing

Meteorological Conditions

BAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Off-Site Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3) DPM	Exhaust TOG	Evaporative TOG	
2013-2017	0.0014	0.0734	0.1600	Eastside - 60.96 meters
2013-2017	0.0023	0.0924	0.2015	Westside - 15.24 meters

Off-Site PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3) Total PM2.5	Fugitive PM2.5	Vehicle PM2.5	
2013-2017	0.2097	0.2041	0.0056	Eastside - 60.96 meters
2013-2017	0.2639	0.2572	0.0067	Westside - 15.24 meters

El Camino Real Specific Plan, Santa Clara, CA - San Tomas Expressway Cancer Risk & PM2.5
Impacts at Off-Site 1st Floor Receptors - 1.5m receptor heights - Eastside 60.69m
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity 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: C_{air} = 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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2040	10	0.0014	0.0734	0.1600	0.018	0.006	0.0007	0.02
1	1	0 - 1	2040	10	0.0014	0.0734	0.1600	0.223	0.069	0.0088	0.30
2	1	1 - 2	2041	10	0.0014	0.0734	0.1600	0.223	0.069	0.0088	0.30
3	1	2 - 3	2042	3	0.0014	0.0734	0.1600	0.035	0.011	0.0014	0.05
4	1	3 - 4	2043	3	0.0014	0.0734	0.1600	0.035	0.011	0.0014	0.05
5	1	4 - 5	2044	3	0.0014	0.0734	0.1600	0.035	0.011	0.0014	0.05
6	1	5 - 6	2045	3	0.0014	0.0734	0.1600	0.035	0.011	0.0014	0.05
7	1	6 - 7	2046	3	0.0014	0.0734	0.1600	0.035	0.011	0.0014	0.05
8	1	7 - 8	2047	3	0.0014	0.0734	0.1600	0.035	0.011	0.0014	0.05
9	1	8 - 9	2048	3	0.0014	0.0734	0.1600	0.035	0.011	0.0014	0.05
10	1	9 - 10	2049	3	0.0014	0.0734	0.1600	0.035	0.011	0.0014	0.05
11	1	10 - 11	2050	3	0.0014	0.0734	0.1600	0.035	0.011	0.0014	0.05
12	1	11 - 12	2051	3	0.0014	0.0734	0.1600	0.035	0.011	0.0014	0.05
13	1	12 - 13	2052	3	0.0014	0.0734	0.1600	0.035	0.011	0.0014	0.05
14	1	13 - 14	2053	3	0.0014	0.0734	0.1600	0.035	0.011	0.0014	0.05
15	1	14 - 15	2054	3	0.0014	0.0734	0.1600	0.035	0.011	0.0014	0.05
16	1	15 - 16	2055	3	0.0014	0.0734	0.1600	0.035	0.011	0.0014	0.05
17	1	16-17	2056	1	0.0014	0.0734	0.1600	0.004	0.001	0.0002	0.01
18	1	17-18	2057	1	0.0014	0.0734	0.1600	0.004	0.001	0.0002	0.01
19	1	18-19	2058	1	0.0014	0.0734	0.1600	0.004	0.001	0.0002	0.01
20	1	19-20	2059	1	0.0014	0.0734	0.1600	0.004	0.001	0.0002	0.01
21	1	20-21	2060	1	0.0014	0.0734	0.1600	0.004	0.001	0.0002	0.01
22	1	21-22	2061	1	0.0014	0.0734	0.1600	0.004	0.001	0.0002	0.01
23	1	22-23	2062	1	0.0014	0.0734	0.1600	0.004	0.001	0.0002	0.01
24	1	23-24	2063	1	0.0014	0.0734	0.1600	0.004	0.001	0.0002	0.01
25	1	24-25	2064	1	0.0014	0.0734	0.1600	0.004	0.001	0.0002	0.01
26	1	25-26	2065	1	0.0014	0.0734	0.1600	0.004	0.001	0.0002	0.01
27	1	26-27	2066	1	0.0014	0.0734	0.1600	0.004	0.001	0.0002	0.01
28	1	27-28	2067	1	0.0014	0.0734	0.1600	0.004	0.001	0.0002	0.01
29	1	28-29	2068	1	0.0014	0.0734	0.1600	0.004	0.001	0.0002	0.01
30	1	29-30	2069	1	0.0014	0.0734	0.1600	0.004	0.001	0.0002	0.01
Total Increased Cancer Risk								1.01	0.312	0.040	**1.36**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0003	0.20	0.21

* Third trimester of pregnancy

El Camino Real Specific Plan, Santa Clara, CA - San Tomas Expressway Cancer Risk & PM2.5
Impacts at Off-Site 1st Floor Receptors - 1.5m receptor heights - Westside 15.24m
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity 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: C_{air} = 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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2040	10	0.0023	0.0924	0.2015	0.031	0.007	0.0009	0.04
1	1	0 - 1	2040	10	0.0023	0.0924	0.2015	0.378	0.087	0.0111	0.48
2	1	1 - 2	2041	10	0.0023	0.0924	0.2015	0.378	0.087	0.0111	0.48
3	1	2 - 3	2042	3	0.0023	0.0924	0.2015	0.059	0.014	0.0018	0.07
4	1	3 - 4	2043	3	0.0023	0.0924	0.2015	0.059	0.014	0.0018	0.07
5	1	4 - 5	2044	3	0.0023	0.0924	0.2015	0.059	0.014	0.0018	0.07
6	1	5 - 6	2045	3	0.0023	0.0924	0.2015	0.059	0.014	0.0018	0.07
7	1	6 - 7	2046	3	0.0023	0.0924	0.2015	0.059	0.014	0.0018	0.07
8	1	7 - 8	2047	3	0.0023	0.0924	0.2015	0.059	0.014	0.0018	0.07
9	1	8 - 9	2048	3	0.0023	0.0924	0.2015	0.059	0.014	0.0018	0.07
10	1	9 - 10	2049	3	0.0023	0.0924	0.2015	0.059	0.014	0.0018	0.07
11	1	10 - 11	2050	3	0.0023	0.0924	0.2015	0.059	0.014	0.0018	0.07
12	1	11 - 12	2051	3	0.0023	0.0924	0.2015	0.059	0.014	0.0018	0.07
13	1	12 - 13	2052	3	0.0023	0.0924	0.2015	0.059	0.014	0.0018	0.07
14	1	13 - 14	2053	3	0.0023	0.0924	0.2015	0.059	0.014	0.0018	0.07
15	1	14 - 15	2054	3	0.0023	0.0924	0.2015	0.059	0.014	0.0018	0.07
16	1	15 - 16	2055	3	0.0023	0.0924	0.2015	0.059	0.014	0.0018	0.07
17	1	16-17	2056	1	0.0023	0.0924	0.2015	0.007	0.002	0.0002	0.01
18	1	17-18	2057	1	0.0023	0.0924	0.2015	0.007	0.002	0.0002	0.01
19	1	18-19	2058	1	0.0023	0.0924	0.2015	0.007	0.002	0.0002	0.01
20	1	19-20	2059	1	0.0023	0.0924	0.2015	0.007	0.002	0.0002	0.01
21	1	20-21	2060	1	0.0023	0.0924	0.2015	0.007	0.002	0.0002	0.01
22	1	21-22	2061	1	0.0023	0.0924	0.2015	0.007	0.002	0.0002	0.01
23	1	22-23	2062	1	0.0023	0.0924	0.2015	0.007	0.002	0.0002	0.01
24	1	23-24	2063	1	0.0023	0.0924	0.2015	0.007	0.002	0.0002	0.01
25	1	24-25	2064	1	0.0023	0.0924	0.2015	0.007	0.002	0.0002	0.01
26	1	25-26	2065	1	0.0023	0.0924	0.2015	0.007	0.002	0.0002	0.01
27	1	26-27	2066	1	0.0023	0.0924	0.2015	0.007	0.002	0.0002	0.01
28	1	27-28	2067	1	0.0023	0.0924	0.2015	0.007	0.002	0.0002	0.01
29	1	28-29	2068	1	0.0023	0.0924	0.2015	0.007	0.002	0.0002	0.01
30	1	29-30	2069	1	0.0023	0.0924	0.2015	0.007	0.002	0.0002	0.01
Total Increased Cancer Risk								1.71	0.393	0.050	**2.16**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0005	0.26	0.26

* Third trimester of pregnancy

Scott Blvd 2040 Traffic Emissions and Health Risk Calculations

Analysis Year = ***2040***

Vehicle Type	2040 Caltrans Vehicles (veh/day)	2040 Vehicles (veh/day)
Total	**20,000**	**20,000**

Increase From 2040	1.00
Vehicles/Direction	**10,000**
Avg Vehicles/Hour/Direction	417

Traffic Data Year = ***2040***

El Camino Real Specific Plan TIA 2019 & 2024	AADT Total	Total Truck	Trucks by Axle 2	3	4	5
ECR / Scott Boulevard	20,000	702	553	78	22	49
			78.81%	11.07%	3.10%	7.02%
Percent of Total Vehicles		3.51%	2.77%	0.39%	0.11%	0.25%

Traffic Increase per Year (%) = *1.00%*

702	Trucks	100%
2.8%	MDT	
0.7%	HDT	
3.5%	Total	
96.5%	Other	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Scott Boulevard
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
DPM_NB_SCO	Scott Blvd Northbound	NB	2	145.9	0.09	13.3	43.7	3.4	35	10,000	1,943	20,911	8.858E-10	6.531E-10	6.8	3.16
DPM_SB_SCO	Scott Blvd Southbound	SB	2	146.1	0.09	13.3	43.7	3.4	35	10,000	1,945	20,940	8.858E-10	6.531E-10	6.8	3.16
									Total	20,000						

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00016			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and DPM Emissions - DPM_NB_SCO

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	4.08%	408	1.68E-06	9	6.55%	655	2.70E-06	17	5.64%	564	2.33E-06
2	2.74%	274	1.13E-06	10	7.51%	751	3.10E-06	18	3.17%	317	1.31E-06
3	2.90%	290	1.20E-06	11	6.44%	644	2.66E-06	19	2.20%	220	9.09E-07
4	3.11%	311	1.29E-06	12	6.98%	698	2.88E-06	20	0.86%	86	3.55E-07
5	2.09%	209	8.65E-07	13	6.28%	628	2.59E-06	21	2.95%	295	1.22E-06
6	3.22%	322	1.33E-06	14	6.17%	617	2.55E-06	22	4.19%	419	1.73E-06
7	6.01%	601	2.48E-06	15	5.26%	526	2.17E-06	23	2.68%	268	1.11E-06
8	4.35%	435	1.80E-06	16	3.76%	376	1.55E-06	24	0.86%	86	3.55E-07
								Total		10,000	

2040 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_SCO

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	4.08%	408	1.69E-06	9	6.55%	655	2.71E-06	17	5.64%	564	2.33E-06
2	2.74%	274	1.13E-06	10	7.51%	751	3.11E-06	18	3.17%	317	1.31E-06
3	2.90%	290	1.20E-06	11	6.44%	644	2.66E-06	19	2.20%	220	9.10E-07
4	3.11%	311	1.29E-06	12	6.98%	698	2.89E-06	20	0.86%	86	3.55E-07
5	2.09%	209	8.66E-07	13	6.28%	628	2.60E-06	21	2.95%	295	1.22E-06
6	3.22%	322	1.33E-06	14	6.17%	617	2.55E-06	22	4.19%	419	1.73E-06
7	6.01%	601	2.49E-06	15	5.26%	526	2.18E-06	23	2.68%	268	1.11E-06
8	4.35%	435	1.80E-06	16	3.76%	376	1.55E-06	24	0.86%	86	3.55E-07
								Total		10,000	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Scott Boulevard
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
PM25_NB_SCO	Scott Blvd Northbound	NB	2	145.9	0.09	13.3	44	1.3	35	10,000	1,943	20,911	3.360E-09	2.477E-09	2.6	1.21
PM25_SB_SCO	Scott Blvd Southbound	SB	2	146.1	0.09	13.3	44	1.3	35	10,000	1,945	20,940	3.360E-09	2.477E-09	2.6	1.21
									Total	20,000						

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.000622			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and PM2.5 Emissions - PM25_NB_SCO

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	115	1.80E-06	9	7.12%	712	1.11E-05	17	7.40%	740	1.16E-05
2	0.41%	41	6.47E-07	10	4.38%	438	6.87E-06	18	8.19%	819	1.28E-05
3	0.40%	40	6.21E-07	11	4.66%	466	7.30E-06	19	5.70%	570	8.93E-06
4	0.25%	25	3.87E-07	12	5.89%	589	9.23E-06	20	4.28%	428	6.70E-06
5	0.49%	49	7.69E-07	13	6.15%	615	9.64E-06	21	3.26%	326	5.10E-06
6	0.89%	89	1.40E-06	14	6.04%	604	9.45E-06	22	3.30%	330	5.17E-06
7	3.78%	378	5.92E-06	15	7.02%	702	1.10E-05	23	2.46%	246	3.86E-06
8	7.77%	777	1.22E-05	16	7.15%	715	1.12E-05	24	1.87%	187	2.93E-06
								Total		10,000	

2040 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM25_SB_SCO

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	115	1.80E-06	9	7.12%	712	1.12E-05	17	7.40%	740	1.16E-05
2	0.41%	41	6.48E-07	10	4.38%	438	6.88E-06	18	8.19%	819	1.28E-05
3	0.40%	40	6.22E-07	11	4.66%	466	7.31E-06	19	5.70%	570	8.94E-06
4	0.25%	25	3.88E-07	12	5.89%	589	9.24E-06	20	4.28%	428	6.71E-06
5	0.49%	49	7.70E-07	13	6.15%	615	9.65E-06	21	3.26%	326	5.11E-06
6	0.89%	89	1.40E-06	14	6.04%	604	9.47E-06	22	3.30%	330	5.18E-06
7	3.78%	378	5.93E-06	15	7.02%	702	1.10E-05	23	2.46%	246	3.86E-06
8	7.77%	777	1.22E-05	16	7.15%	715	1.12E-05	24	1.87%	187	2.93E-06
								Total		10,000	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Scott Boulevard
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEXH_NB_SCO	Scott Blvd Northbound	NB	2	145.9	0.09	13.3	44	1.3	35	10,000	1,943	20,911	5.228E-08	3.855E-08	2.6	1.21
TEXH_SB_SCO	Scott Blvd Southbound	SB	2	146.1	0.09	13.3	44	1.3	35	10,000	1,945	20,940	5.228E-08	3.855E-08	2.6	1.21
									Total	20,000						

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00968			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_SCO

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	712	1.74E-04	17	7.40%	740	1.80E-04
2	0.00%	0	0.00E+00	10	4.38%	438	1.07E-04	18	8.19%	819	2.00E-04
3	0.40%	40	9.66E-06	11	4.66%	466	1.14E-04	19	5.70%	570	1.39E-04
4	0.25%	25	6.02E-06	12	5.89%	589	1.44E-04	20	4.28%	428	1.04E-04
5	0.49%	49	1.20E-05	13	6.15%	615	1.50E-04	21	3.26%	326	7.94E-05
6	0.89%	89	2.18E-05	14	6.04%	604	1.47E-04	22	3.30%	330	8.04E-05
7	3.78%	378	9.22E-05	15	7.02%	702	1.71E-04	23	2.46%	246	6.01E-05
8	7.77%	777	1.89E-04	16	7.15%	715	1.74E-04	24	1.87%	187	4.55E-05
								Total		9,844	

2040 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_SCO

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	712	1.74E-04	17	7.40%	740	1.81E-04
2	0.00%	0	0.00E+00	10	4.38%	438	1.07E-04	18	8.19%	819	2.00E-04
3	0.40%	40	9.67E-06	11	4.66%	466	1.14E-04	19	5.70%	570	1.39E-04
4	0.25%	25	6.03E-06	12	5.89%	589	1.44E-04	20	4.28%	428	1.04E-04
5	0.49%	49	1.20E-05	13	6.15%	615	1.50E-04	21	3.26%	326	7.95E-05
6	0.89%	89	2.18E-05	14	6.04%	604	1.47E-04	22	3.30%	330	8.05E-05
7	3.78%	378	9.23E-05	15	7.02%	702	1.71E-04	23	2.46%	246	6.01E-05
8	7.77%	777	1.90E-04	16	7.15%	715	1.74E-04	24	1.87%	187	4.56E-05
								Total		9,844	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Scott Boulevard
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEVAP_NB_SCO	Scott Blvd Northbound	NB	2	145.9	0.09	13.3	44	1.3	35	10,000	1,943	20,911	1.164E-07	8.583E-08	2.6	1.21
TEVAP_SB_SCO	Scott Blvd Southbound	SB	2	146.1	0.09	13.3	44	1.3	35	10,000	1,945	20,940	1.164E-07	8.583E-08	2.6	1.21
									Total	20,000						

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle per Hour (g/hour)	0.75436			
Emissions per Vehicle per Mile (g/VMT)	0.02155			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_SCO

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	712	3.86E-04	17	7.40%	740	4.01E-04
2	0.00%	0	0.00E+00	10	4.38%	438	2.38E-04	18	8.19%	819	4.44E-04
3	0.40%	40	2.15E-05	11	4.66%	466	2.53E-04	19	5.70%	570	3.09E-04
4	0.25%	25	1.34E-05	12	5.89%	589	3.20E-04	20	4.28%	428	2.32E-04
5	0.49%	49	2.66E-05	13	6.15%	615	3.34E-04	21	3.26%	326	1.77E-04
6	0.89%	89	4.85E-05	14	6.04%	604	3.28E-04	22	3.30%	330	1.79E-04
7	3.78%	378	2.05E-04	15	7.02%	702	3.81E-04	23	2.46%	246	1.34E-04
8	7.77%	777	4.22E-04	16	7.15%	715	3.88E-04	24	1.87%	187	1.01E-04
								Total		9,844	

2040 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_SCO

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	712	3.87E-04	17	7.40%	740	4.02E-04
2	0.00%	0	0.00E+00	10	4.38%	438	2.38E-04	18	8.19%	819	4.45E-04
3	0.40%	40	2.15E-05	11	4.66%	466	2.53E-04	19	5.70%	570	3.10E-04
4	0.25%	25	1.34E-05	12	5.89%	589	3.20E-04	20	4.28%	428	2.33E-04
5	0.49%	49	2.67E-05	13	6.15%	615	3.34E-04	21	3.26%	326	1.77E-04
6	0.89%	89	4.86E-05	14	6.04%	604	3.28E-04	22	3.30%	330	1.79E-04
7	3.78%	378	2.06E-04	15	7.02%	702	3.82E-04	23	2.46%	246	1.34E-04
8	7.77%	777	4.22E-04	16	7.15%	715	3.89E-04	24	1.87%	187	1.02E-04
								Total		9,844	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Scott Boulevard
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
FUG_NB_SCO	Scott Blvd Northbound	NB	2	145.9	0.09	13.3	44	1.3	35	10,000	1,943	20,911	1.237E-07	9.124E-08	2.6	1.21
FUG_SB_SCO	Scott Blvd Southbound	SB	2	146.1	0.09	13.3	44	1.3	35	10,000	1,945	20,940	1.237E-07	9.124E-08	2.6	1.21
									Total	20,000						

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00210			
Brake Wear - Emissions per Vehicle (g/VMT)	0.00532			
Road Dust - Emissions per Vehicle (g/VMT)	0.01549			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02291			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_SCO

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	712	4.11E-04	17	7.40%	740	4.27E-04
2	0.00%	0	0.00E+00	10	4.38%	438	2.53E-04	18	8.19%	819	4.72E-04
3	0.40%	40	2.29E-05	11	4.66%	466	2.69E-04	19	5.70%	570	3.29E-04
4	0.25%	25	1.43E-05	12	5.89%	589	3.40E-04	20	4.28%	428	2.47E-04
5	0.49%	49	2.83E-05	13	6.15%	615	3.55E-04	21	3.26%	326	1.88E-04
6	0.89%	89	5.16E-05	14	6.04%	604	3.48E-04	22	3.30%	330	1.90E-04
7	3.78%	378	2.18E-04	15	7.02%	702	4.05E-04	23	2.46%	246	1.42E-04
8	7.77%	777	4.48E-04	16	7.15%	715	4.12E-04	24	1.87%	187	1.08E-04
								Total		9,844	

2040 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_SCO

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	712	4.11E-04	17	7.40%	740	4.27E-04
2	0.00%	0	0.00E+00	10	4.38%	438	2.53E-04	18	8.19%	819	4.73E-04
3	0.40%	40	2.29E-05	11	4.66%	466	2.69E-04	19	5.70%	570	3.29E-04
4	0.25%	25	1.43E-05	12	5.89%	589	3.40E-04	20	4.28%	428	2.47E-04
5	0.49%	49	2.84E-05	13	6.15%	615	3.55E-04	21	3.26%	326	1.88E-04
6	0.89%	89	5.16E-05	14	6.04%	604	3.49E-04	22	3.30%	330	1.91E-04
7	3.78%	378	2.19E-04	15	7.02%	702	4.06E-04	23	2.46%	246	1.42E-04
8	7.77%	777	4.49E-04	16	7.15%	715	4.13E-04	24	1.87%	187	1.08E-04
								Total		9,844	

El Camino Real Specific Plan, Santa Clara, CA - Scott Blvd Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
Off-Site 1st (1.5m) Floor Receptor Heights

Emission Year	2040
Receptor Information	Maximum Distance Off-Site Receptor
Number of Receptors	48
Receptor Height	1st (1.5m) Floors
Receptor Distances	76.2 meter line spacing

Meteorological Conditions

BAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Off-Site Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)			
	DPM	Exhaust TOG	Evaporative TOG	
2013-2017	0.0009	0.0928	0.2065	Eastside - 7.62 meters
2013-2017	0.0007	0.0515	0.1148	Westside - 7.62 meters

Off-Site PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)			
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5	
2013-2017	0.2254	0.2195	0.0060	Eastside - 7.62 meters
2013-2017	0.1253	0.1219	0.0033	Westside - 7.62 meters

El Camino Real Specific Plan, Santa Clara, CA - Scott Blvd Cancer Risk & PM2.5
Impacts at Off-Site 1st Floor Receptors - 1.5m receptor heights - Eastside 7.62m
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity 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: C_{air} = 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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2040	10	0.0009	0.0928	0.2065	0.012	0.007	0.0009	0.02
1	1	0 - 1	2040	10	0.0009	0.0928	0.2065	0.141	0.087	0.0114	0.24
2	1	1 - 2	2041	10	0.0009	0.0928	0.2065	0.141	0.087	0.0114	0.24
3	1	2 - 3	2042	3	0.0009	0.0928	0.2065	0.022	0.014	0.0018	0.04
4	1	3 - 4	2043	3	0.0009	0.0928	0.2065	0.022	0.014	0.0018	0.04
5	1	4 - 5	2044	3	0.0009	0.0928	0.2065	0.022	0.014	0.0018	0.04
6	1	5 - 6	2045	3	0.0009	0.0928	0.2065	0.022	0.014	0.0018	0.04
7	1	6 - 7	2046	3	0.0009	0.0928	0.2065	0.022	0.014	0.0018	0.04
8	1	7 - 8	2047	3	0.0009	0.0928	0.2065	0.022	0.014	0.0018	0.04
9	1	8 - 9	2048	3	0.0009	0.0928	0.2065	0.022	0.014	0.0018	0.04
10	1	9 - 10	2049	3	0.0009	0.0928	0.2065	0.022	0.014	0.0018	0.04
11	1	10 - 11	2050	3	0.0009	0.0928	0.2065	0.022	0.014	0.0018	0.04
12	1	11 - 12	2051	3	0.0009	0.0928	0.2065	0.022	0.014	0.0018	0.04
13	1	12 - 13	2052	3	0.0009	0.0928	0.2065	0.022	0.014	0.0018	0.04
14	1	13 - 14	2053	3	0.0009	0.0928	0.2065	0.022	0.014	0.0018	0.04
15	1	14 - 15	2054	3	0.0009	0.0928	0.2065	0.022	0.014	0.0018	0.04
16	1	15 - 16	2055	3	0.0009	0.0928	0.2065	0.022	0.014	0.0018	0.04
17	1	16-17	2056	1	0.0009	0.0928	0.2065	0.002	0.002	0.0002	0.00
18	1	17-18	2057	1	0.0009	0.0928	0.2065	0.002	0.002	0.0002	0.00
19	1	18-19	2058	1	0.0009	0.0928	0.2065	0.002	0.002	0.0002	0.00
20	1	19-20	2059	1	0.0009	0.0928	0.2065	0.002	0.002	0.0002	0.00
21	1	20-21	2060	1	0.0009	0.0928	0.2065	0.002	0.002	0.0002	0.00
22	1	21-22	2061	1	0.0009	0.0928	0.2065	0.002	0.002	0.0002	0.00
23	1	22-23	2062	1	0.0009	0.0928	0.2065	0.002	0.002	0.0002	0.00
24	1	23-24	2063	1	0.0009	0.0928	0.2065	0.002	0.002	0.0002	0.00
25	1	24-25	2064	1	0.0009	0.0928	0.2065	0.002	0.002	0.0002	0.00
26	1	25-26	2065	1	0.0009	0.0928	0.2065	0.002	0.002	0.0002	0.00
27	1	26-27	2066	1	0.0009	0.0928	0.2065	0.002	0.002	0.0002	0.00
28	1	27-28	2067	1	0.0009	0.0928	0.2065	0.002	0.002	0.0002	0.00
29	1	28-29	2068	1	0.0009	0.0928	0.2065	0.002	0.002	0.0002	0.00
30	1	29-30	2069	1	0.0009	0.0928	0.2065	0.002	0.002	0.0002	0.00
Total Increased Cancer Risk								0.64	0.394	0.052	**1.09**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0002	0.22	0.23

* Third trimester of pregnancy

El Camino Real Specific Plan, Santa Clara, CA - Scott Blvd Cancer Risk & PM2.5 Impacts at Off-Site 1st Floor Receptors - 1.5m receptor heights - Westside 7.62m 30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity 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: C_{air} = 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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2040	10	0.0007	0.0515	0.1148	0.010	0.004	0.0005	0.01
1	1	0 - 1	2040	10	0.0007	0.0515	0.1148	0.122	0.048	0.0063	0.18
2	1	1 - 2	2041	10	0.0007	0.0515	0.1148	0.122	0.048	0.0063	0.18
3	1	2 - 3	2042	3	0.0007	0.0515	0.1148	0.019	0.008	0.0010	0.03
4	1	3 - 4	2043	3	0.0007	0.0515	0.1148	0.019	0.008	0.0010	0.03
5	1	4 - 5	2044	3	0.0007	0.0515	0.1148	0.019	0.008	0.0010	0.03
6	1	5 - 6	2045	3	0.0007	0.0515	0.1148	0.019	0.008	0.0010	0.03
7	1	6 - 7	2046	3	0.0007	0.0515	0.1148	0.019	0.008	0.0010	0.03
8	1	7 - 8	2047	3	0.0007	0.0515	0.1148	0.019	0.008	0.0010	0.03
9	1	8 - 9	2048	3	0.0007	0.0515	0.1148	0.019	0.008	0.0010	0.03
10	1	9 - 10	2049	3	0.0007	0.0515	0.1148	0.019	0.008	0.0010	0.03
11	1	10 - 11	2050	3	0.0007	0.0515	0.1148	0.019	0.008	0.0010	0.03
12	1	11 - 12	2051	3	0.0007	0.0515	0.1148	0.019	0.008	0.0010	0.03
13	1	12 - 13	2052	3	0.0007	0.0515	0.1148	0.019	0.008	0.0010	0.03
14	1	13 - 14	2053	3	0.0007	0.0515	0.1148	0.019	0.008	0.0010	0.03
15	1	14 - 15	2054	3	0.0007	0.0515	0.1148	0.019	0.008	0.0010	0.03
16	1	15 - 16	2055	3	0.0007	0.0515	0.1148	0.019	0.008	0.0010	0.03
17	1	16-17	2056	1	0.0007	0.0515	0.1148	0.002	0.001	0.0001	0.00
18	1	17-18	2057	1	0.0007	0.0515	0.1148	0.002	0.001	0.0001	0.00
19	1	18-19	2058	1	0.0007	0.0515	0.1148	0.002	0.001	0.0001	0.00
20	1	19-20	2059	1	0.0007	0.0515	0.1148	0.002	0.001	0.0001	0.00
21	1	20-21	2060	1	0.0007	0.0515	0.1148	0.002	0.001	0.0001	0.00
22	1	21-22	2061	1	0.0007	0.0515	0.1148	0.002	0.001	0.0001	0.00
23	1	22-23	2062	1	0.0007	0.0515	0.1148	0.002	0.001	0.0001	0.00
24	1	23-24	2063	1	0.0007	0.0515	0.1148	0.002	0.001	0.0001	0.00
25	1	24-25	2064	1	0.0007	0.0515	0.1148	0.002	0.001	0.0001	0.00
26	1	25-26	2065	1	0.0007	0.0515	0.1148	0.002	0.001	0.0001	0.00
27	1	26-27	2066	1	0.0007	0.0515	0.1148	0.002	0.001	0.0001	0.00
28	1	27-28	2067	1	0.0007	0.0515	0.1148	0.002	0.001	0.0001	0.00
29	1	28-29	2068	1	0.0007	0.0515	0.1148	0.002	0.001	0.0001	0.00
30	1	29-30	2069	1	0.0007	0.0515	0.1148	0.002	0.001	0.0001	0.00
Total Increased Cancer Risk								0.55	0.219	0.029	**0.80**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.000	0.12	0.13

* Third trimester of pregnancy

Lafayette Street 2040 Traffic Emissions and Health Risk Calculations

Analysis Year = ***2040***

Vehicle Type	2040 Caltrans Vehicles (veh/day)	2040 Vehicles (veh/day)
Total	**25,000**	**25,000**

Increase From 2040	1.00
Vehicles/Direction	**12,500**
Avg Vehicles/Hour/Direction	521

Traffic Data Year = ***2040***

El Camino Real Specific Plan TIA 2019 & 2024	AADT Total	Total Truck	Trucks by Axle 2	3	4	5
ECR / Lafayette Street	25,000	878	692	97	27	62
			78.81%	11.07%	3.10%	7.02%
Percent of Total Vehicles		3.51%	2.77%	0.39%	0.11%	0.25%

Traffic Increase per Year (%) = *1.00%*

878	Trucks	100%
2.8%	MDT	
0.7%	HDT	
3.5%	Total	
96.5%	Other	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Lafayette Street
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
DPM_NB_LAF	Lafayette Street Northbound	NB	2	202.6	0.13	13.3	43.7	3.4	30	12,500	2,698	29,037	1.134E-09	8.363E-10	6.8	3.16
DPM_SB_LAF	Lafayette Street Southbound	SB	2	203.6	0.13	13.3	43.7	3.4	30	12,500	2,711	29,181	1.134E-09	8.363E-10	6.8	3.16
									Total	25,000						

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.00017			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and DPM Emissions - DPM_NB_LAF

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	4.08%	510	3.00E-06	9	6.55%	819	4.81E-06	17	5.64%	705	4.14E-06
2	2.74%	342	2.01E-06	10	7.51%	939	5.52E-06	18	3.17%	396	2.33E-06
3	2.90%	362	2.13E-06	11	6.44%	805	4.73E-06	19	2.20%	275	1.62E-06
4	3.11%	389	2.29E-06	12	6.98%	872	5.12E-06	20	0.86%	107	6.31E-07
5	2.09%	262	1.54E-06	13	6.28%	785	4.61E-06	21	2.95%	369	2.17E-06
6	3.22%	403	2.37E-06	14	6.17%	772	4.53E-06	22	4.19%	523	3.07E-06
7	6.01%	751	4.41E-06	15	5.26%	658	3.86E-06	23	2.68%	335	1.97E-06
8	4.35%	543	3.19E-06	16	3.76%	470	2.76E-06	24	0.86%	107	6.31E-07
								Total		12,500	

2040 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_LAF

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	4.08%	510	3.01E-06	9	6.55%	819	4.83E-06	17	5.64%	705	4.16E-06
2	2.74%	342	2.02E-06	10	7.51%	939	5.55E-06	18	3.17%	396	2.34E-06
3	2.90%	362	2.14E-06	11	6.44%	805	4.75E-06	19	2.20%	275	1.62E-06
4	3.11%	389	2.30E-06	12	6.98%	872	5.15E-06	20	0.86%	107	6.34E-07
5	2.09%	262	1.54E-06	13	6.28%	785	4.63E-06	21	2.95%	369	2.18E-06
6	3.22%	403	2.38E-06	14	6.17%	772	4.56E-06	22	4.19%	523	3.09E-06
7	6.01%	751	4.44E-06	15	5.26%	658	3.88E-06	23	2.68%	335	1.98E-06
8	4.35%	543	3.21E-06	16	3.76%	470	2.77E-06	24	0.86%	107	6.34E-07
								Total		12,500	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Lafayette Street
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = **2040**

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
PM25_NB_LAF	Lafayette Street Northbound	NB	2	202.6	0.13	13.3	44	1.3	30	12,500	2,698	29,037	4.895E-09	3.609E-09	2.6	1.21
PM25_SB_LAF	Lafayette Street Southbound	SB	2	203.6	0.13	13.3	44	1.3	30	12,500	2,711	29,181	4.895E-09	3.609E-09	2.6	1.21
									Total	25,000						

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.000725			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and PM2.5 Emissions - PM25_NB_LAF

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	143	3.64E-06	9	7.12%	890	2.26E-05	17	7.40%	925	2.34E-05
2	0.41%	52	1.31E-06	10	4.38%	548	1.39E-05	18	8.19%	1023	2.59E-05
3	0.40%	50	1.26E-06	11	4.66%	582	1.48E-05	19	5.70%	713	1.81E-05
4	0.25%	31	7.83E-07	12	5.89%	736	1.87E-05	20	4.28%	535	1.36E-05
5	0.49%	61	1.56E-06	13	6.15%	769	1.95E-05	21	3.26%	407	1.03E-05
6	0.89%	112	2.83E-06	14	6.04%	754	1.91E-05	22	3.30%	412	1.05E-05
7	3.78%	473	1.20E-05	15	7.02%	878	2.22E-05	23	2.46%	308	7.81E-06
8	7.77%	971	2.46E-05	16	7.15%	894	2.27E-05	24	1.87%	234	5.92E-06
								Total		12,500	

2040 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM25_SB_LAF

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	143	3.65E-06	9	7.12%	890	2.27E-05	17	7.40%	925	2.36E-05
2	0.41%	52	1.31E-06	10	4.38%	548	1.40E-05	18	8.19%	1023	2.61E-05
3	0.40%	50	1.26E-06	11	4.66%	582	1.48E-05	19	5.70%	713	1.82E-05
4	0.25%	31	7.87E-07	12	5.89%	736	1.88E-05	20	4.28%	535	1.36E-05
5	0.49%	61	1.56E-06	13	6.15%	769	1.96E-05	21	3.26%	407	1.04E-05
6	0.89%	112	2.85E-06	14	6.04%	754	1.92E-05	22	3.30%	412	1.05E-05
7	3.78%	473	1.20E-05	15	7.02%	878	2.24E-05	23	2.46%	308	7.85E-06
8	7.77%	971	2.47E-05	16	7.15%	894	2.28E-05	24	1.87%	234	5.95E-06
								Total		12,500	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Lafayette Street
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEXH_NB_LAF	Lafayette Street Northbound	NB	2	202.6	0.13	13.3	44	1.3	30	12,500	2,698	29,037	7.872E-08	5.804E-08	2.6	1.21
TEXH_SB_LAF	Lafayette Street Southbound	SB	2	203.6	0.13	13.3	44	1.3	30	12,500	2,711	29,181	7.872E-08	5.804E-08	2.6	1.21
									Total	25,000						

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.01166			

2040 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_LAF

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	890	3.63E-04	17	7.40%	925	3.77E-04
2	0.41%	52	2.10E-05	10	4.38%	548	2.23E-04	18	8.19%	1023	4.17E-04
3	0.40%	50	2.02E-05	11	4.66%	582	2.37E-04	19	5.70%	713	2.91E-04
4	0.25%	31	1.26E-05	12	5.89%	736	3.00E-04	20	4.28%	535	2.18E-04
5	0.49%	61	2.50E-05	13	6.15%	769	3.14E-04	21	3.26%	407	1.66E-04
6	0.89%	112	4.55E-05	14	6.04%	754	3.08E-04	22	3.30%	412	1.68E-04
7	3.78%	473	1.93E-04	15	7.02%	878	3.58E-04	23	2.46%	308	1.26E-04
8	7.77%	971	3.96E-04	16	7.15%	894	3.64E-04	24	1.87%	234	9.52E-05
								Total		12,357	

2040 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_LAF

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	890	3.65E-04	17	7.40%	925	3.79E-04
2	0.41%	52	2.11E-05	10	4.38%	548	2.25E-04	18	8.19%	1023	4.19E-04
3	0.40%	50	2.03E-05	11	4.66%	582	2.39E-04	19	5.70%	713	2.92E-04
4	0.25%	31	1.27E-05	12	5.89%	736	3.02E-04	20	4.28%	535	2.19E-04
5	0.49%	61	2.51E-05	13	6.15%	769	3.15E-04	21	3.26%	407	1.67E-04
6	0.89%	112	4.58E-05	14	6.04%	754	3.09E-04	22	3.30%	412	1.69E-04
7	3.78%	473	1.94E-04	15	7.02%	878	3.60E-04	23	2.46%	308	1.26E-04
8	7.77%	971	3.98E-04	16	7.15%	894	3.66E-04	24	1.87%	234	9.57E-05
								Total		12,357	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Lafayette Street
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2040

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEVAP_NB_LAF	Lafayette Street Northbound	NB	2	202.6	0.13	13.3	44	1.3	30	12,500	2,698	29,037	1.698E-07	1.252E-07	2.6	1.21
TEVAP_SB_LAF	Lafayette Street Southbound	SB	2	203.6	0.13	13.3	44	1.3	30	12,500	2,711	29,181	1.698E-07	1.252E-07	2.6	1.21
									Total	25,000						

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle per Hour (g/hour)	0.75436			
Emissions per Vehicle per Mile (g/VMT)	0.02515			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_LAF

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	890	7.82E-04	17	7.40%	925	8.13E-04
2	0.41%	52	4.54E-05	10	4.38%	548	4.82E-04	18	8.19%	1023	9.00E-04
3	0.40%	50	4.36E-05	11	4.66%	582	5.12E-04	19	5.70%	713	6.27E-04
4	0.25%	31	2.72E-05	12	5.89%	736	6.48E-04	20	4.28%	535	4.70E-04
5	0.49%	61	5.39E-05	13	6.15%	769	6.76E-04	21	3.26%	407	3.58E-04
6	0.89%	112	9.82E-05	14	6.04%	754	6.63E-04	22	3.30%	412	3.63E-04
7	3.78%	473	4.16E-04	15	7.02%	878	7.72E-04	23	2.46%	308	2.71E-04
8	7.77%	971	8.54E-04	16	7.15%	894	7.86E-04	24	1.87%	234	2.05E-04
								Total		12,357	

2040 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_LAF

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	890	7.86E-04	17	7.40%	925	8.17E-04
2	0.41%	52	4.56E-05	10	4.38%	548	4.84E-04	18	8.19%	1023	9.04E-04
3	0.40%	50	4.38E-05	11	4.66%	582	5.15E-04	19	5.70%	713	6.30E-04
4	0.25%	31	2.73E-05	12	5.89%	736	6.51E-04	20	4.28%	535	4.73E-04
5	0.49%	61	5.42E-05	13	6.15%	769	6.79E-04	21	3.26%	407	3.60E-04
6	0.89%	112	9.87E-05	14	6.04%	754	6.67E-04	22	3.30%	412	3.64E-04
7	3.78%	473	4.18E-04	15	7.02%	878	7.75E-04	23	2.46%	308	2.72E-04
8	7.77%	971	8.58E-04	16	7.15%	894	7.90E-04	24	1.87%	234	2.06E-04
								Total		12,357	

El Camino Real Specific Plan, Santa Clara, CA - Off-Site Residential
Cumulative Traffic - Lafayette Street
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = **2040**

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
FUG_NB_LAF	Lafayette Street Northbound	NB	2	202.6	0.13	13.3	44	1.3	30	12,500	2,698	29,037	1.546E-07	1.140E-07	2.6	1.21
FUG_SB_LAF	Lafayette Street Southbound	SB	2	203.6	0.13	13.3	44	1.3	30	12,500	2,711	29,181	1.546E-07	1.140E-07	2.6	1.21
									Total	25,000						

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00210			
Brake Wear - Emissions per Vehicle (g/VMT)	0.00530			
Road Dust - Emissions per Vehicle (g/VMT)	0.01549			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02290			

Emisson Factors from CT-EMFAC2021

2040 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_LAF

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	7.12%	890	7.13E-04	17	7.40%	925	7.40E-04
2	0.41%	52	4.13E-05	10	4.38%	548	4.39E-04	18	8.19%	1023	8.20E-04
3	0.40%	50	3.97E-05	11	4.66%	582	4.66E-04	19	5.70%	713	5.71E-04
4	0.25%	31	2.47E-05	12	5.89%	736	5.90E-04	20	4.28%	535	4.28E-04
5	0.49%	61	4.91E-05	13	6.15%	769	6.16E-04	21	3.26%	407	3.26E-04
6	0.89%	112	8.95E-05	14	6.04%	754	6.04E-04	22	3.30%	412	3.30E-04
7	3.78%	473	3.79E-04	15	7.02%	878	7.03E-04	23	2.46%	308	2.47E-04
8	7.77%	971	7.77E-04	16	7.15%	894	7.15E-04	24	1.87%	234	1.87E-04
								Total		12,357	

2040 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_LAF

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	7.12%	890	7.16E-04	17	7.40%	925	7.44E-04
2	0.41%	52	4.15E-05	10	4.38%	548	4.41E-04	18	8.19%	1023	8.24E-04
3	0.40%	50	3.99E-05	11	4.66%	582	4.69E-04	19	5.70%	713	5.74E-04
4	0.25%	31	2.49E-05	12	5.89%	736	5.93E-04	20	4.28%	535	4.30E-04
5	0.49%	61	4.94E-05	13	6.15%	769	6.19E-04	21	3.26%	407	3.28E-04
6	0.89%	112	8.99E-05	14	6.04%	754	6.07E-04	22	3.30%	412	3.32E-04
7	3.78%	473	3.80E-04	15	7.02%	878	7.06E-04	23	2.46%	308	2.48E-04
8	7.77%	971	7.81E-04	16	7.15%	894	7.19E-04	24	1.87%	234	1.88E-04
								Total		12,357	

El Camino Real Specific Plan, Santa Clara, CA - Lafayette Street Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
Off-Site 1st (1.5m) Floor Receptor Heights

Emission Year	2040
Receptor Information	Maximum Distance Off-Site Receptor
Number of Receptors	48
Receptor Height	1st (1.5m) Floors
Receptor Distances	106.68 meter line spacing

Meteorological Conditions	
BAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Off-Site Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)			
	DPM	Exhaust TOG	Evaporative TOG	
2013-2017	0.0011	0.1306	0.2818	Eastside - 15.24 meters
2013-2017	0.0011	0.0853	0.1839	Westside - 7.62 meters

Off-Site PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)			
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5	
2013-2017	0.2647	0.2566	0.0081	Eastside - 15.24 meters
2013-2017	0.1727	0.1674	0.0053	Westside - 7.62 meters

El Camino Real Specific Plan, Santa Clara, CA - Lafayette Street Cancer Risk & PM2.5
Impacts at Off-Site 1st Floor Receptors - 1.5m receptor heights - Eastside 15.24m
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity 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: C_{air} = 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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2040	10	0.0011	0.1306	0.2818	0.015	0.010	0.0013	0.03
1	1	0 - 1	2040	10	0.0011	0.1306	0.2818	0.186	0.123	0.0156	0.32
2	1	1 - 2	2041	10	0.0011	0.1306	0.2818	0.186	0.123	0.0156	0.32
3	1	2 - 3	2042	3	0.0011	0.1306	0.2818	0.029	0.019	0.0025	0.05
4	1	3 - 4	2043	3	0.0011	0.1306	0.2818	0.029	0.019	0.0025	0.05
5	1	4 - 5	2044	3	0.0011	0.1306	0.2818	0.029	0.019	0.0025	0.05
6	1	5 - 6	2045	3	0.0011	0.1306	0.2818	0.029	0.019	0.0025	0.05
7	1	6 - 7	2046	3	0.0011	0.1306	0.2818	0.029	0.019	0.0025	0.05
8	1	7 - 8	2047	3	0.0011	0.1306	0.2818	0.029	0.019	0.0025	0.05
9	1	8 - 9	2048	3	0.0011	0.1306	0.2818	0.029	0.019	0.0025	0.05
10	1	9 - 10	2049	3	0.0011	0.1306	0.2818	0.029	0.019	0.0025	0.05
11	1	10 - 11	2050	3	0.0011	0.1306	0.2818	0.029	0.019	0.0025	0.05
12	1	11 - 12	2051	3	0.0011	0.1306	0.2818	0.029	0.019	0.0025	0.05
13	1	12 - 13	2052	3	0.0011	0.1306	0.2818	0.029	0.019	0.0025	0.05
14	1	13 - 14	2053	3	0.0011	0.1306	0.2818	0.029	0.019	0.0025	0.05
15	1	14 - 15	2054	3	0.0011	0.1306	0.2818	0.029	0.019	0.0025	0.05
16	1	15 - 16	2055	3	0.0011	0.1306	0.2818	0.029	0.019	0.0025	0.05
17	1	16-17	2056	1	0.0011	0.1306	0.2818	0.003	0.002	0.0003	0.01
18	1	17-18	2057	1	0.0011	0.1306	0.2818	0.003	0.002	0.0003	0.01
19	1	18-19	2058	1	0.0011	0.1306	0.2818	0.003	0.002	0.0003	0.01
20	1	19-20	2059	1	0.0011	0.1306	0.2818	0.003	0.002	0.0003	0.01
21	1	20-21	2060	1	0.0011	0.1306	0.2818	0.003	0.002	0.0003	0.01
22	1	21-22	2061	1	0.0011	0.1306	0.2818	0.003	0.002	0.0003	0.01
23	1	22-23	2062	1	0.0011	0.1306	0.2818	0.003	0.002	0.0003	0.01
24	1	23-24	2063	1	0.0011	0.1306	0.2818	0.003	0.002	0.0003	0.01
25	1	24-25	2064	1	0.0011	0.1306	0.2818	0.003	0.002	0.0003	0.01
26	1	25-26	2065	1	0.0011	0.1306	0.2818	0.003	0.002	0.0003	0.01
27	1	26-27	2066	1	0.0011	0.1306	0.2818	0.003	0.002	0.0003	0.01
28	1	27-28	2067	1	0.0011	0.1306	0.2818	0.003	0.002	0.0003	0.01
29	1	28-29	2068	1	0.0011	0.1306	0.2818	0.003	0.002	0.0003	0.01
30	1	29-30	2069	1	0.0011	0.1306	0.2818	0.003	0.002	0.0003	0.01
Total Increased Cancer Risk								0.84	0.555	0.071	**1.47**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0002	0.26	0.26

* Third trimester of pregnancy

El Camino Real Specific Plan, Santa Clara, CA - Lafayette Street Cancer Risk & PM2.5
Impacts at Off-Site 1st Floor Receptors - 1.5m receptor heights - Westside 7.62m
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity 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: C_{air} = 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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2040	10	0.0011	0.0853	0.1839	0.015	0.007	0.0008	0.02
1	1	0 - 1	2040	10	0.0011	0.0853	0.1839	0.177	0.080	0.0102	0.27
2	1	1 - 2	2041	10	0.0011	0.0853	0.1839	0.177	0.080	0.0102	0.27
3	1	2 - 3	2042	3	0.0011	0.0853	0.1839	0.028	0.013	0.0016	0.04
4	1	3 - 4	2043	3	0.0011	0.0853	0.1839	0.028	0.013	0.0016	0.04
5	1	4 - 5	2044	3	0.0011	0.0853	0.1839	0.028	0.013	0.0016	0.04
6	1	5 - 6	2045	3	0.0011	0.0853	0.1839	0.028	0.013	0.0016	0.04
7	1	6 - 7	2046	3	0.0011	0.0853	0.1839	0.028	0.013	0.0016	0.04
8	1	7 - 8	2047	3	0.0011	0.0853	0.1839	0.028	0.013	0.0016	0.04
9	1	8 - 9	2048	3	0.0011	0.0853	0.1839	0.028	0.013	0.0016	0.04
10	1	9 - 10	2049	3	0.0011	0.0853	0.1839	0.028	0.013	0.0016	0.04
11	1	10 - 11	2050	3	0.0011	0.0853	0.1839	0.028	0.013	0.0016	0.04
12	1	11 - 12	2051	3	0.0011	0.0853	0.1839	0.028	0.013	0.0016	0.04
13	1	12 - 13	2052	3	0.0011	0.0853	0.1839	0.028	0.013	0.0016	0.04
14	1	13 - 14	2053	3	0.0011	0.0853	0.1839	0.028	0.013	0.0016	0.04
15	1	14 - 15	2054	3	0.0011	0.0853	0.1839	0.028	0.013	0.0016	0.04
16	1	15 - 16	2055	3	0.0011	0.0853	0.1839	0.028	0.013	0.0016	0.04
17	1	16-17	2056	1	0.0011	0.0853	0.1839	0.003	0.001	0.0002	0.00
18	1	17-18	2057	1	0.0011	0.0853	0.1839	0.003	0.001	0.0002	0.00
19	1	18-19	2058	1	0.0011	0.0853	0.1839	0.003	0.001	0.0002	0.00
20	1	19-20	2059	1	0.0011	0.0853	0.1839	0.003	0.001	0.0002	0.00
21	1	20-21	2060	1	0.0011	0.0853	0.1839	0.003	0.001	0.0002	0.00
22	1	21-22	2061	1	0.0011	0.0853	0.1839	0.003	0.001	0.0002	0.00
23	1	22-23	2062	1	0.0011	0.0853	0.1839	0.003	0.001	0.0002	0.00
24	1	23-24	2063	1	0.0011	0.0853	0.1839	0.003	0.001	0.0002	0.00
25	1	24-25	2064	1	0.0011	0.0853	0.1839	0.003	0.001	0.0002	0.00
26	1	25-26	2065	1	0.0011	0.0853	0.1839	0.003	0.001	0.0002	0.00
27	1	26-27	2066	1	0.0011	0.0853	0.1839	0.003	0.001	0.0002	0.00
28	1	27-28	2067	1	0.0011	0.0853	0.1839	0.003	0.001	0.0002	0.00
29	1	28-29	2068	1	0.0011	0.0853	0.1839	0.003	0.001	0.0002	0.00
30	1	29-30	2069	1	0.0011	0.0853	0.1839	0.003	0.001	0.0002	0.00
Total Increased Cancer Risk								0.80	0.362	0.046	**1.21**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.000	0.17	0.17

* Third trimester of pregnancy

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD

This form is to be used with the BAAQMD's Google Earth stationary source screening tables.

Click here for guidance on coducting risk & hazard screening, including roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart.

Click here for District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.

Table A: Requester Contact Information

Date of Request	**12/10/2024**
Contact Name	Jordyn Bauer
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x106
Email	jbauer@illingworthrodkin.com
Project Name	El Camino Real Specific Plan
Address	El Camino Real
City	Santa Clara
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	Specific Plan
Project Size (# of units or building square feet)	

Comments:

For Air District assistance, the following steps must be completed:

1. Complete all the contact and project information requested in **Table A** ncomplete forms will not be processed. Please include a project site map.

2. Download and install the free program Google Earth, **http://www.google.com/earth/download/ge/,** and then download the county specific Google Earth stationary source application files from the District's website, **http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.** The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.

3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.

4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.

5. List the stationary source information in **Table B** blue section only.

6. Note that a small percentage of the stationa ve Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name ght). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.

7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.

Submit forms, maps, and questions to Matthew Hanson at 415-749-8733, or mhanson@baaqmd.gov

Table B: Google Earth data

Distance from Receptor (feet) or MEI[1]	Plant No.	Facility Name	Address	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
	9892	Custom Paint Finish	1849 Grant St	--	--	--		Auto Body		2022 Dataset	1.00	#VALUE!	#VALUE!	#VALUE!
	10142	F&S Auto Body Ltd Co	3100 El Camino Real Ste J	--	--	--		Auto Body		2022 Dataset	1.00	#VALUE!	#VALUE!	#VALUE!
	11294	International Auto Center Inc	1499 Lincoln St	--	--	--		Auto Body		2022 Dataset	1.00	#VALUE!	#VALUE!	#VALUE!
	11700	SRS Coatings LLC	1597 Grant Street	0.01	--	0.27		Metal Coating		2022 Dataset	1.00	0.01	#VALUE!	0.27
	3280	Santa Clara Plating Co	1773 Grant Street	0.01	--	--		Electroplating		2022 Dataset	1.00	0.01	#VALUE!	#VALUE!
	3850	El Camino Body Shop Inc	3160 EL CAMINO REAL	--	--	--		Auto Body		2022 Dataset	1.00	#VALUE!	#VALUE!	#VALUE!
	5825	Works Auto Body	1640 Grant St	--	--	--		Auto Body		2022 Dataset	1.00	#VALUE!	#VALUE!	#VALUE!
	16266	City of Santa Clara	1500 Warburton Avenue IT	1.79	--	--		Generator		2022 Dataset	1.00	1.79	#VALUE!	#VALUE!
	18311	Lucky #773	3705 El Camino Real	0.01	--	--		Generator		2022 Dataset	1.00	0.01	#VALUE!	#VALUE!
	20515	Santa Clara Unified School District	1889 Lawrence Road	0.61	--	--		Generator		2022 Dataset	1.00	0.61	#VALUE!	#VALUE!
	17089	Verizon Wireless (San Tomas)	2336 El Camino Real	2.10	--	--		Generator		2022 Dataset	1.00	2.10	#VALUE!	#VALUE!
	17236	City of Santa Clara - Well Site: Zone 1 7	1693 Pomeroy Avenue	8.95	--	0.01		Generator		2022 Dataset	1.00	8.95	#VALUE!	0.01
	19760	BRE Properties Inc	3595 Granada Avenue	0.66	--	--		Generator		2022 Dataset	1.00	0.66	#VALUE!	#VALUE!
	22266	Target Store T2830	2004 El Camino Real	0.01	--	--		Generator		2022 Dataset	1.00	0.01	#VALUE!	#VALUE!
	20988	Hyatt Hotel	75 Headquarters Dr	1.67	--	--		Generator		2022 Dataset	1.00	1.67	#VALUE!	#VALUE!
	17390	Owen Properties	1601 Civic Center Drive	4.14	--	0.01		Generator		2022 Dataset	1.00	4.14	#VALUE!	0.01
	19905	Moonlite Associates LLC	2640 El Camino Real	1.27	--	--		Remediation Services		2022 Dataset	1.00	1.27	#VALUE!	#VALUE!
	106245-1	Santa Clara Unified School District	1889 Lawrence Rd	0.33	--	--		Gas Dispensing Facility		2022 Dataset	1.00	0.33	#VALUE!	#VALUE!
	200723	Precise Collision	2517 EL CAMINO REAL	--	--	--		Auto Body		2022 Dataset	1.00	#VALUE!	#VALUE!	#VALUE!
	200153	Belgcars Auto Body	620 REED ST	--	--	--		Auto Body		2022 Dataset	1.00	#VALUE!	#VALUE!	#VALUE!
	23391	One Stop Collision Center	1486 Jefferson Street	--	--	--		Auto Body		2022 Dataset	1.00	#VALUE!	#VALUE!	#VALUE!
	112335-1	Chevron Gas Station	3740 El Camino Real	5.63	0.02	--		Gas Dispensing Facility		2022 Dataset	1.00	5.63	0.02	#VALUE!
100	110589-1	Mobil	3725 El Camino Real	12.63	0.06	--		Gas Dispensing Facility		2022 Dataset	0.56	7.06	0.03	#VALUE!
100	110711-1	El Camino Valero	3305 El Camino Real	13.59	0.06	--		Gas Dispensing Facility		2022 Dataset	0.56	7.60	0.03	#VALUE!
	112589-1	BW Jackson INC	2025 El Camino Real	7.48	0.03	--		Gas Dispensing Facility		2022 Dataset	1.00	7.48	0.03	#VALUE!
100	15397-REM	Santa Clara University	500 El Camino Real	1.26	--	0.35		Educational Services		2022 Dataset	0.77	0.98	#VALUE!	0.27
	111625-1	ARCO Facility #02082 - Capitol Petroleum	1995 Warburton Ave	4.28	0.02	--		Gas Dispensing Facility		2022 Dataset	1.00	4.28	0.02	#VALUE!
	111847-1	ARCO Facility #00606	2320 El Camino Real	7.88	0.03	--		Gas Dispensing Facility		2022 Dataset	1.00	7.88	0.03	#VALUE!

Footnotes:

1. Maximally exposed individual
2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.
3. Each plant may have multiple permits and sources.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. Fuel codes: 98 = diesel, 189 = Natural Gas.
6. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.
7. The date that the HRSA was completed.
8. Engineer who completed the HRSA. For District purposes only.
9. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
10. The HRSA "Chronic Health" number represents the Hazard Index.
11. Further information about common sources:
    a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
    b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of 0.003 or

c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010.
Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but instead should reflect
e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
g. This spray booth is considered to be insignificant.

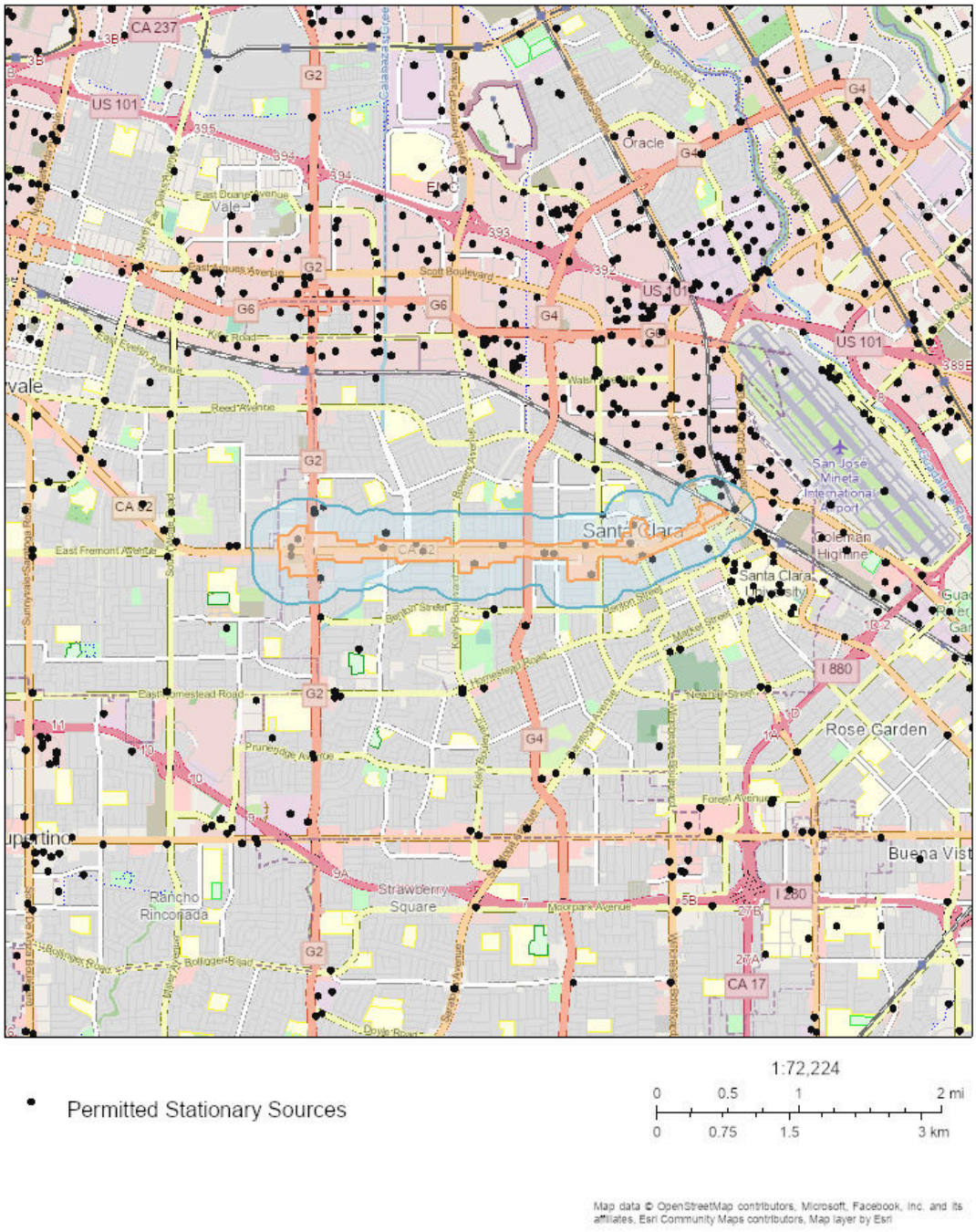
Date last updated:
03/13/2018

Screening Report

Area of Interest (AOI) Information

Area : 57,328,685.18 ft²

Dec 10 2024 10:36:37 Pacific Standard Time



Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Stationary Sources	28	N/A	N/A

Permitted Stationary Sources

#	Address	Cancer_Ris	Chronic_Ha	City	County
1	1849 Grant St	0.00	0.00	Santa Clara	Santa Clara
2	3100 El Camino Real Ste J	0.00	0.00	Santa Clara	Santa Clara
3	1499 Lincoln St	0.00	0.00	Santa Clara	Santa Clara
4	1597 Grant Street	0.01	0.00	Santa Clara	Santa Clara
5	1773 Grant Street	0.01	0.00	Santa Clara	Santa Clara
6	3160 EL CAMINO REAL	0.00	0.00	Santa Clara	Santa Clara
7	1640 Grant St	0.00	0.00	Santa Clara	Santa Clara
8	1500 Warburton Avenue IT	1.79	0.00	Santa Clara	Santa Clara
9	3705 El Camino Real	0.01	0.00	Santa Clara	Santa Clara
10	1889 Lawrence Road	0.61	0.00	Santa Clara	Santa Clara
11	2336 El Camino Real	2.10	0.00	Santa Clara	Santa Clara
12	1693 Pomeroy Avenue	8.95	0.00	Santa Clara	Santa Clara
13	3595 Granada Avenue	0.66	0.00	Santa Clara	Santa Clara
14	2004 El Camino Real	0.01	0.00	Santa Clara	Santa Clara
15	75 Headquarters Dr	1.67	0.00	San Jose	Santa Clara
16	1601 Civic Center Drive	4.14	0.00	Santa Clara	Santa Clara
17	2640 El Camino Real	1.27	0.00	Santa Clara	Santa Clara
18	1889 Lawrence Rd	0.33	0.00	Santa Clara	Santa Clara
19	2517 EL CAMINO REAL	0.00	0.00	Santa Clara	Santa Clara
20	620 REED ST	0.00	0.00	Santa Clara	Santa Clara
21	1486 Jefferson Street	0.00	0.00	Santa Clara	Santa Clara
22	3740 El Camino Real	5.63	0.02	Santa Clara	Santa Clara
23	3725 El Camino Real	12.63	0.06	Santa Clara	Santa Clara
24	3305 El Camino Real	13.59	0.06	Santa Clara	Santa Clara
25	2025 El Camino Real	7.48	0.03	Santa Clara	Santa Clara
26	500 El Camino Real	1.26	0.00	Santa Clara	Santa Clara
27	1995 Warburton Ave	4.28	0.02	Santa Clara	Santa Clara
28	2320 El Camino Real	7.88	0.03	Santa Clara	Santa Clara

#	Details	Facility_I	Facility_N	Latitude	Longitude
1	*No Data*	9892	Custom Paint Finish	37.36	-121.94
2	*No Data*	10142	F&S Auto Body Ltd Co	37.35	-121.98
3	*No Data*	11294	International Auto Center Inc	37.35	-121.95
4	*No Data*	11700	SRS Coatings LLC	37.36	-121.94
5	*No Data*	3280	Santa Clara Plating Co	37.36	-121.94
6	*No Data*	3850	El Camino Body Shop Inc	37.35	-121.98
7	*No Data*	5825	Works Auto Body	37.36	-121.94
8	Generator	16266	City of Santa Clara	37.35	-121.96
9	Generator	18311	Lucky #773	37.35	-122.00
10	Generator	20515	Santa Clara Unified School District	37.36	-122.00
11	Generator	17089	Verizon Wireless (San Tomas)	37.35	-121.97
12	Generator	17236	City of Santa Clara - Well Site: Zone 1 7	37.35	-121.99
13	Generator	19760	BRE Properties Inc	37.35	-122.00
14	Generator	22266	Target Store T2830	37.35	-121.96
15	Generator	20988	Hyatt Hotel	37.36	-121.99
16	Generator	17390	Owen Properties	37.35	-121.96
17	*No Data*	19905	Moonlite Associates LLC	37.35	-121.98
18	Gas Dispensing Facility	106245-1	Santa Clara Unified School District	37.36	-122.00
19	*No Data*	200723	Precise Collision	37.35	-121.97
20	*No Data*	200153	Belgcars Auto Body	37.36	-121.94
21	*No Data*	23391	One Stop Collision Center	37.35	-121.95
22	Gas Dispensing Facility	112335-1	Chevron Gas Station	37.35	-122.00
23	Gas Dispensing Facility	110589-1	Mobil	37.35	-122.00
24	Gas Dispensing Facility	110711-1	El Camino Valero	37.35	-121.99
25	Gas Dispensing Facility	112589-1	BW Jackson INC	37.35	-121.96
26	*No Data*	15397-REM	Santa Clara University	37.35	-121.95
27	Gas Dispensing Facility	111625-1	ARCO Facility #02082 - Capitol Petroleum	37.36	-121.96
28	Gas Dispensing Facility	111847-1	ARCO Facility #00606	37.35	-121.97

#	NAICS	NAICS_Indu	NAICS_Sect	NAICS_Subs	PM25
1	811121	Automotive Body, Paint, and Interior Repair and Maintenance	Other Services (except Public Administration)	Repair and Maintenance	0.00
2	811121	Automotive Body, Paint, and Interior Repair and Maintenance	Other Services (except Public Administration)	Repair and Maintenance	0.00
3	811121	Automotive Body, Paint, and Interior Repair and Maintenance	Other Services (except Public Administration)	Repair and Maintenance	0.00
4	332812	Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	Manufacturing	Fabricated Metal Product Manufacturing	0.27
5	332813	Electroplating, Plating, Polishing, Anodizing, and Coloring	Manufacturing	Fabricated Metal Product Manufacturing	0.00
6	811121	Automotive Body, Paint, and Interior Repair and Maintenance	Other Services (except Public Administration)	Repair and Maintenance	0.00
7	811121	Automotive Body, Paint, and Interior Repair and Maintenance	Other Services (except Public Administration)	Repair and Maintenance	0.00
8	921190	Other General Government Support	Public Administration	Executive, Legislative, and Other General Government Support	0.00
9	445110	Supermarkets and Other Grocery (except Convenience) Stores	Retail Trade	Food and Beverage Stores	0.00
10	611110	Elementary and Secondary Schools	Educational Services	Educational Services	0.00
11	517210	Wireless Telecommunications Carriers (except Satellite)	Information	Telecommunications	0.00
12	922190	Other Justice, Public Order, and Safety Activities	Public Administration	Justice, Public Order, and Safety Activities	0.01
13	531110	Lessors of Residential Buildings and Dwellings	Real Estate and Rental and Leasing	Real Estate	0.00
14	452112	Discount Department Stores	Retail Trade	General Merchandise Stores	0.00
15	721110	Hotels (except Casino Hotels) and Motels	Accommodation and Food Services	Accommodation	0.00
16	531312	Nonresidential Property Managers	Real Estate and Rental and Leasing	Real Estate	0.01
17	562910	Remediation Services	Administrative and Support and Waste Management and Remediation Services	Waste Management and Remediation Services	0.00
18	611110	Elementary and Secondary Schools	Educational Services	Educational Services	0.00
19	811121	Automotive Body, Paint, and Interior Repair and Maintenance	Other Services (except Public Administration)	Repair and Maintenance	0.00
20	811121	Automotive Body, Paint, and Interior Repair and Maintenance	Other Services (except Public Administration)	Repair and Maintenance	0.00

21	811121	Automotive Body, Paint, and Interior Repair and Maintenance	Other Services (except Public Administration)	Repair and Maintenance	0.00
22	447110	Gasoline Stations with Convenience Stores	Retail Trade	Gasoline Stations	0.00
23	447110	Gasoline Stations with Convenience Stores	Retail Trade	Gasoline Stations	0.00
24	447110	Gasoline Stations with Convenience Stores	Retail Trade	Gasoline Stations	0.00
25	447110	Gasoline Stations with Convenience Stores	Retail Trade	Gasoline Stations	0.00
26	611310	Colleges, Universities, and Professional Schools	Educational Services	Educational Services	0.35
27	447110	Gasoline Stations with Convenience Stores	Retail Trade	Gasoline Stations	0.00
28	447110	Gasoline Stations with Convenience Stores	Retail Trade	Gasoline Stations	0.00

#	State	Zip	Count
1	CA	95050	1
2	CA	95051	1
3	CA	95050	1
4	CA	95050	1
5	CA	95050	1
6	CA	95051	1
7	CA	95050	1
8	CA	95050	1
9	CA	95051	1
10	CA	95051	1
11	CA	95051	1
12	CA	95051	1
13	CA	95051	1
14	CA	95050	1
15	CA	95134	1
16	CA	95050	1
17	CA	95051	1
18	CA	95051	1
19	CA	95051	1
20	CA	95050	1
21	CA	95050	1
22	CA	95051	1
23	CA	95051	1
24	CA	95051	1
25	CA	95050	1
26	CA	95053	1
27	CA	95050	1
28	CA	95050	1

NOTE: A larger buffer than 1,000 may be warranted depending on proximity to significant sources.

BAAQMD GIS Screening Data – Railway Cancer Risk Impacts in the ECR Specific Plan Area



BAAQMD GIS Screening Data – Railway $PM_{2.5}$ Concentration Impacts in the ECR Specific Plan Area



BAAQMD GIS Screening Data – Railway Hazard Index Impacts in the ECR Specific Plan Area

