# *3141-3155 EL CAMINO REAL CONSTRUCTION and ON-SITE COMMUNITY RISK ASSESSMENT*

## *Santa Clara, California*

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## Introduction

The purpose of this report is to address the potential community risk impacts associated with the construction of the proposed residential development located at 3141-3155 El Camino Real in Santa Clara, California. The air quality impacts from this project would be associated with demolition of the existing uses and construction of the new buildings. Air pollutant emissions associated with construction of the project were predicted using appropriate computer models. In addition, the potential project construction health risk impacts and the impact of existing toxic air contaminant (TAC) sources affecting the nearby and proposed sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

## Project Description

The 2.44-acre project site is currently developed with multiple commercial buildings and a car wash. The project proposes to demolish the existing uses and construct eight, two to three story residential buildings containing a total of 60 townhome units. The proposed project would feature integrated parking in each unit for the residents, totaling 110 parking spaces. The project is within the proposed El Camino Real Specific Plan; however, that plan is still under review and has not been adopted.

## Setting

The project is located in Santa Clara County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter ($PM_{10}$), and fine particulate matter ($PM_{2.5}$).

### Air Pollutants of Concern

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

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less ($PM_{10}$) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of $PM_{10}$ and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

[1] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

Toxic Air Contaminants

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

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, 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 closest sensitive receptors to the project site are in the adjacent single-family residences to the north of the site. Additional receptors in single- and multi-family housing are located around the site at further distances. The Vidyarambh Preschool is also near to the east the project site. This project would also introduce new sensitive receptors (i.e., residents) to the area.

**Regulatory Setting**

Federal Regulations

The United States Environmental Protection Agency (EPA) sets nationwide emission standards for mobile sources, which include on-road (highway) motor vehicles such trucks, buses, and automobiles, and non-road (off-road) vehicles and equipment used in construction, agricultural, industrial, and mining activities (such as bulldozers and loaders). The EPA also sets nationwide fuel standards. California also has the ability to set motor vehicle emission standards and standards for fuel used in California, as long as they are the same or more stringent than the federal standards.

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of $NO_X$ and particulate matter ($PM_{10}$ and $PM_{2.5}$) and because the EPA has identified DPM as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce particulate matter and $NO_X$ emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.[2]

In concert with the diesel engine emission standards, the EPA has also substantially reduced the amount of sulfur allowed in diesel fuels. The sulfur contained in diesel fuel is a significant contributor to the formation of particulate matter in diesel-fueled engine exhaust. The new standards reduced the amount of sulfur allowed by 97 percent for highway diesel fuel (from 500 parts per million by weight [ppmw] to 15 ppmw), and by 99 percent for off-highway diesel fuel (from about 3,000 ppmw to 15 ppmw). The low sulfur highway fuel (15 ppmw sulfur), also called ultra-low sulfur diesel (ULSD), is currently required for use by all vehicles in the U.S.

All of the above federal diesel engine and diesel fuel requirements have been adopted by California, in some cases with modifications making the requirements more stringent or the implementation dates sooner.

State Regulations

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.[3] In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet 2010 or later engine standards that have much lower DPM and $PM_{2.5}$ emissions. This regulation will substantially reduce these emissions between 2013 and 2023. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road or is retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads sooner.

[2] USEPA, 2000. *Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*. EPA420-F-00-057. December.

[3] California Air Resources Board, 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. October.

CARB has also adopted and implemented regulations to reduce DPM and $NO_X$ emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, 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 $NO_X$ exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with stringent federal off-road equipment engine emission limits for new vehicles, will significantly reduce emissions of DPM and $NO_X$.

Bay Area Air Quality Management District (BAAQMD)

BAAQMD has jurisdiction over an approximately 5,600-square mile area, commonly referred to as the San Francisco Bay Area (Bay Area). The District's boundary encompasses the nine San Francisco Bay Area counties, including Alameda County, Contra Costa County, Marin County, San Francisco County, San Mateo County, Santa Clara County, Napa County, southwestern Solano County, and southern Sonoma County.

BAAQMD is the lead agency in developing plans to address attainment and maintenance of the National Ambient Air Quality Standards and California Ambient Air Quality Standards. The District also has permit authority over most types of stationary equipment utilized for the proposed project. The BAAQMD is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

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 is being 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 will be 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. Overburdened communities are areas located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall CalEnviroScreen score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract.[5] The BAAQMD has identified six communities as impacted: Concord, Richmond/San Pablo, Western

[4] See BAAQMD: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program , accessed 2/18/2021.
[5] See BAAQMD: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722_01_appendixd_mapsofoverburdenedcommunities-pdf.pdf?la=en , accessed 10/1/2021.

Alameda County, San José, Redwood City/East Palo Alto, and Eastern San Francisco. The project site is not within a CARE area.

The BAAQMD California Environmental Quality Act (*CEQA) Air Quality Guidelines*[6] were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions. *Attachment 1* includes detailed community risk modeling methodology.

City of Santa Clara 2010 – 2035 General Plan.

On November 16, 2010, the City of Santa Clara adopted the *City of Santa Clara 2010 – 2035 General Plan.*[7] The 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 to the proposed project and this assessment:

*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-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 below 1990 levels by 2020.

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

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA and these significance thresholds were contained in the District's 2011 CEQA Air Quality Guidelines. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were challenged through a series of court challenges and were mostly upheld. BAAQMD updated the CEQA Air Quality Guidelines in 2017 to include the latest significance thresholds, which were used in this analysis and are summarized in Table 1. Impacts above these thresholds are considered potentially significant.

[6] Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*. May.
[7] City of Santa Clara, 2010. *City of Santa Clara 2010 – 2035 General Plan*. November. Web: https://www.santaclaraca.gov/home/showdocument?id=56139

**Table 1. BAAQMD Air Quality CEQA 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 | Not Applicable | |
| **Health Risks and Hazards** | **Single Sources Within 1,000-foot Zone of Influence** | **Combined Sources (Cumulative from all sources within 1000-foot zone of influence)** | |
| Excess Cancer Risk | 10 per one million | 100 per one million | |
| Hazard Index | 1.0 | 10.0 | |
| Incremental annual $PM_{2.5}$ | 0.3 $\mu g/m^3$ | 0.8 $\mu g/m^3$ | |

## Construction Community Risk Impacts and Mitigation Measures

Project impacts related to increased community risk can occur either by generating emissions of TACs and air pollutants and by introducing a new sensitive receptor in proximity to an existing source of TACs. Temporary project construction activity would generate emissions of DPM from equipment and trucks and also generate dust on a temporary basis that could affect nearby sensitive receptors. A construction community health risk assessment was prepared to address project construction impacts on the surrounding off-site sensitive receptors.

Additionally, the project could introduce new residents that are sensitive receptors, who would be exposed to existing sources of TACs and localized air pollutants in the vicinity of the project. Therefore, the impact of the existing sources of TAC upon the existing sensitive receptors and new incoming sensitive receptors was assessed.

Community risk impacts are addressed by predicting increased lifetime cancer risk, the increase in annual $PM_{2.5}$ concentrations, and computing the Hazard Index (HI) for non-cancer health risks. Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust emissions pose health risks for sensitive receptors such as surrounding residents. The primary community risk impact issues associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[8] This assessment included dispersion modeling to predict the offsite and onsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated. The methodology for computing community risks impacts is contained in *Attachment 1*.

### Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 was used to estimate emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types and size, and anticipated construction schedule were input to CalEEMod. The CARB EMission FACtors 2021 (EMFAC2021) model was used to predict emissions from construction traffic, which includes worker travel, vendor trucks, and haul trucks.[9] The CalEEMod model output along with construction inputs are included in *Attachment 2* and EMFAC2021 vehicle emissions modeling outputs are included in *Attachment 3*.

CalEEMod Modeling

*Land Use Inputs*

The proposed project land uses were entered into CalEEMod as described in Table 2.

[8] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.
[9] See CARB's EMFAC2021 Emissions Inventory at https://arb.ca.gov/emfac/emissions-inventory.

**Table 2. Summary of Project Land Use Inputs**

| Project Land Uses | Size | Units | Square Feet (sf) | Acreage |
|---|---|---|---|---|
| Condo/Townhouse | 60 | Dwelling Unit | 91,144 | 2.44 |
| Enclosed Parking Structure | 110 | Parking Spaces | 37,056 | |

*Construction Inputs*

CalEEMod computes annual emissions for construction that are based on the project type, size and acreage. The model provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. The construction build-out scenario for both phases, including equipment list and schedule, were based on information provided by the project applicant.

The construction equipment worksheets provided by the applicant included the schedule for each phase. Within each phase, the quantity of equipment to be used along with the average hours per day and total number of workdays was provided. Since different equipment would have different estimates of the working days per phase, the hours per day for each phase was computed by dividing the total number of hours that the equipment would be used by the total number of days in that phase. The construction schedule assumed that the earliest possible start date would be June 2022 and would be built out over a period of approximately 18 months, or 531 construction workdays. The earliest year of full operation was assumed to be 2024.

*Construction Truck Traffic Emissions*

Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on the estimate of demolition material to be exported, soil material imported and/or exported to the site and the estimate of cement and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for those were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for demolition and grading were estimated from the provided demolition and grading volumes by assuming each truck could carry 10 tons per load. The number of concrete and asphalt total round haul trips were provided for the project and converted to total one-way trips, assuming two trips per delivery.

The latest version of the CalEEMod model is based on the older version of the CARB EMFAC2017 motor vehicle emission factor model. This model has been superseded by the EMFAC2021 model; however, CalEEMod has not been updated to include EMFAC2021. Therefore, the construction traffic information was combined with EMFAC2021 motor vehicle emissions factors. EMFAC2021 provides aggregate emission rates in grams per mile for each vehicle type. The vehicle mix for this study was based on CalEEMod default assumptions, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1and LDT2). Vendor trips are comprised of delivery and large trucks (EMFAC category MHDT and HHDT) and haul trips, including cement trucks, are comprised of large trucks (EMFAC category HHDT). Travel distances are based on CalEEMod

default lengths, which are 10.8 miles for worker travel, 7.3 miles for vendor trips and 20 miles for hauling (soil import/export). Since CalEEMod does not address cement trucks, these were treated as vendor travel distances. Each trip was assumed to include an idle time of 5 minutes. Emissions associated with vehicle starts were also included. On road emissions in Santa Clara County for the years 2022-2023 were used in these calculations. Table 3 provides the traffic inputs that were combined with the EMFAC2021 emission database to compute vehicle emissions.

**Table 3. Construction Traffic Data Used for EMFAC2021 Model Runs**

| CalEEMod Run/Land Uses and Construction Phase | Trips by Trip Type | | | Notes |
|---|---|---|---|---|
| | Total Worker[1] | Total Vendor[1] | Total Haul[2] | |
| Vehicle mix[1] | 50% LDA<br>25% LDT1<br>25% LDT2 | 50% MHDT<br>50% HHDT | 100% HHDT | |
| Trip Length (miles) | 10.8 | 7.3 | 20.0 (Demo/Soil)<br>7.3 (Cement/Asphalt) | CalEEMod default distance with 5-min truck idle time. |
| Demolition | 810 | - | 553 | 106,286-sf existing building and 350 tons of pavement demolition. CalEEMod default worker trips. |
| Site Preparation | 390 | - | - | CalEEMod default worker trips. |
| Grading | 810 | - | 1,476 | 11,809-cy of export volume. CalEEMod default worker trips. |
| Trenching | 375 | - | - | CalEEMod default worker trips. |
| Building Construction | 10,080 | 2,160 | 60 | 30 cement truck round trips. CalEEMod default worker and vendor trips. |
| Architectural Coating | 1,440 | - | - | CalEEMod default worker trips. |
| Paving | 600 | - | 98 | 405-cy asphalt. CalEEMod default worker trips. |

Notes: [1] Based on Year 2022-2023 EMFAC2021 light-duty vehicle fleet mix for Santa Clara County.
[2] Includes demolition and grading trips estimated by CalEEMod based on amount of material to be removed. Cement and asphalt trips estimated based on data provided by the applicant.

Summary of Computed Construction Period Emissions

Average daily emissions were annualized for each year of construction by dividing the annual construction emissions by the number of active workdays during that year. Table 4 shows the annualized average daily construction emissions of ROG, $NO_X$, $PM_{10}$ exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 4, predicted annualized project construction emissions would not exceed the BAAQMD significance thresholds during any year of construction.

**Table 4. Construction Period Emissions**

| Year | ROG | NOx | $PM_{10}$ Exhaust | $PM_{2.5}$ Exhaust |
|---|---|---|---|---|
| *Construction Emissions Per Year (Tons)* | | | | |
| 2022 | 0.06 | 0.57 | 0.03 | 0.02 |
| 2023 | 0.71 | 0.53 | 0.03 | 0.02 |
| *Average Daily Construction Emissions Per Year (pounds/day)* | | | | |
| 2022 (214 construction workdays) | 0.56 | 5.29 | 0.27 | 0.23 |
| 2023 (317 construction workdays) | 4.50 | 3.32 | 0.18 | 0.15 |
| *BAAQMD Thresholds (pounds per day)* | *54* lbs./day | *54* lbs./day | *82* lbs./day | *54* lbs./day |
| **Exceed Threshold?** | No | No | No | No |

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 would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less-than-significant if best management practices are implemented to reduce these emissions. *Recommended Measure AQ-1 would implement BAAQMD-recommended best management practices*.

**Mitigation Measure AQ-1: Include measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. 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. Additional measures are identified to reduce construction equipment exhaust emissions. The contractor shall implement the following best management practices that are 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. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne

toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

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

8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

*Effectiveness of Recommended Measure AQ-1*

The measures above are consistent with BAAQMD-recommended basic control measures for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines.

**Community Risks from Project Operation**

Stationary equipment that could emit substantial TACs (e.g., emergency generators) are not planned for the project. Operation of the project would have long-term emissions from mobile sources (i.e., traffic). Per BAAQMD recommended risks and methodology, a road with less than 10,000 total vehicles per day is considered a low-impact source of TACs.[10] Based on CalEEMod default trip generation data, this project would generate 439 daily trips dispersed on the roadway system with a majority of the trips being from light-duty vehicles (i.e., passenger automobiles), which is a fraction of 10,000 daily vehicles. Therefore, operational emissions from project traffic are considered negligible and not included within this analysis.

**Community Health Risk from Project Construction**

Construction Emissions

The CalEEMod model and EMFAC2021 emissions provided total annual $PM_{10}$ exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total emissions from all construction stages as 0.05 tons (94 pounds). The on-road emissions are a result of haul truck travel during grading activities, worker travel, and vendor deliveries during construction. A trip length of half a mile was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod as 0.09 tons (179 pounds) for the overall construction period.

[10] Bay Area Air Quality Management District, 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ concentrations at sensitive receptors in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[11] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

*Construction Sources*

To represent the construction equipment exhaust emissions, an area source emission release height of 20 feet (6 meters) was used for the area sources.[12] The release height incorporates both the physical release height from the construction equipment (i.e., the height of the exhaust pipe) and plume rise after it leaves the exhaust pipe. Plume rise is due to both the high temperature of the exhaust and the high velocity of the exhaust gas. It should be noted that when modeling an area source, plume rise is not calculated by the AERMOD dispersion model as it would do for a point source (exhaust stack). Therefore, the release height from an area source used to represent emissions from sources with plume rise, such as construction equipment, should be based on the height the exhaust plume is expected to achieve, not just the height of the top of the exhaust pipe.

For modeling fugitive $PM_{2.5}$ emissions, an area source with a near-ground level release height of 7 feet (2 meters) was used. Fugitive dust emissions at construction sites come from a variety of sources, including truck and equipment travel, grading activities, truck loading (with loaders) and unloading (rear or bottom dumping), loaders and excavators moving and transferring soil and other materials, etc. All of these activities result in fugitive dust emissions at various heights at the point(s) of generation. Once generated, the dust plume will tend to rise as it moves downwind across the site and exit the site at a higher elevation than when it was generated. For all these reasons, a 7-foot release height was used as the average release height across the construction site. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources.

*AERMOD Inputs and Meteorological Data*

The modeling used a five-year data set (2013 - 2017) of hourly meteorological data from the San Jose Airport prepared for use with the AERMOD model by BAAQMD. Construction emissions were modeled as occurring daily between 7:00 a.m. to 4:00 p.m., when the majority of construction activity is expected to occur according to the project applicant. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2022-2023 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptors. Receptor heights of 5 feet (1.5 meters) and 15 feet (4.5 meters) were used to represent the breathing height

[11] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.
[12] California Air Resource Board, 2007. *Proposed Regulation for In-Use Off-Road Diesel Vehicles, Appendix D: Health Risk Methodology.* April. Web: https://ww3.arb.ca.gov/regact/2007/ordiesl07/ordiesl07.htm

on the first and second floors of nearby single- and multi-family residences.[13] A receptor height of 3 feet (1 meter) was used to represent the breathing height of children at the nearby preschool.

Summary of Construction Community Risk Impacts

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with the Office of Environmental Health Hazard Assessment (OEHHA) guidance for age sensitivity factors and exposure parameters as recommended by BAAQMD (see *Attachment 1)*. Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were also calculated and identified. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. Third trimester, infant, child, and adult exposures were assumed to occur at all residences during the entire construction period. Students at the preschool were assumed to be two years and older. The child cancer risk parameters (ages 2 through 16 years old) were used to calculate the increased cancer risk for the preschool students.

The maximum modeled annual $PM_{2.5}$ concentration was calculated based on combined exhaust and fugitive concentrations. The maximum computed HI value was based on the ratio of the maximum DPM concentration modeled and the chronic inhalation refence exposure level of 5 $\mu g/m^3$.

The maximum modeled annual DPM and $PM_{2.5}$ concentrations, which includes both the DPM and fugitive $PM_{2.5}$ concentrations, were identified at nearby sensitive receptors (as shown in Figure 1) to find the maximally exposed individuals (MEI). Results of this assessment indicated that the construction residential MEI was located on the first floor (5 feet above ground) at the adjacent single-family home north of the project site. Table 5 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities affecting the construction MEI. *Attachment 4* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

Additionally, modeling was conducted to predict the cancer risks, non-cancer health hazards, and maximum $PM_{2.5}$ concentrations associated with construction activities at the nearby preschool. The maximum increased cancer risks were adjusted using child exposure parameters. The uncontrolled cancer risk, $PM_{2.5}$ concentration, and HI at the nearby preschool do not exceed their respective BAAQMD single-source significance thresholds, as shown in Table 5.

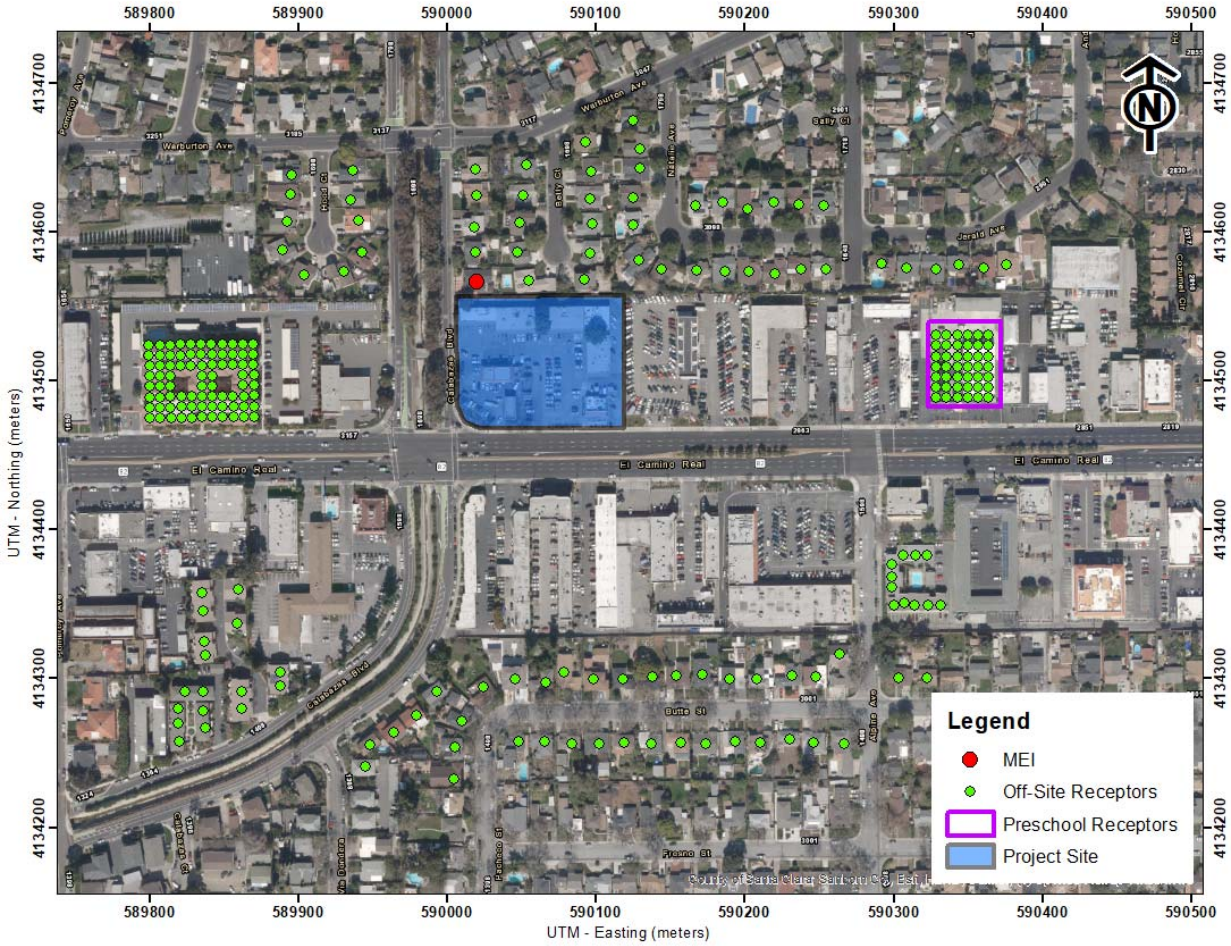
[13] Bay Area Air Quality Management District, 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0. May. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en

**Table 5. Construction Risk Impacts at the Off-Site MEI**

| Source | | Cancer Risk (per million) | Annual $PM_{2.5}$ ($\mu g/m^3$) | Hazard Index |
|---|---|---|---|---|
| **Project Impact** | | | | |
| Project Construction | Unmitigated | **16.40 (infant)** | **0.38** | 0.01 |
| | Mitigated* | 2.81 (infant) | 0.15 | <0.01 |
| ***BAAQMD Single-Source Threshold*** | | ***10*** | ***0.3*** | ***1.0*** |
| ***Exceed Threshold?*** | Unmitigated | ***Yes*** | ***Yes*** | *No* |
| | Mitigated* | *No* | *No* | *No* |
| Most Affected School Receptor – Vidyarambh Preschool | | | | |
| Project Construction | Uncontrolled | 0.59 (child) | 0.02 | <0.01 |
| ***BAAQMD Single-Source Threshold*** | | ***10.0*** | ***0.3*** | ***1.0*** |
| ***Exceed Threshold?*** | Uncontrolled | *No* | No | No |
| | | | | |

* Construction equipment with Tier 2 DPF 3 engines and Best Management Practices as Mitigation.

**Figure 1. Locations of Project Construction Site, Off-Site Sensitive Receptors, and Maximum TAC Impact**

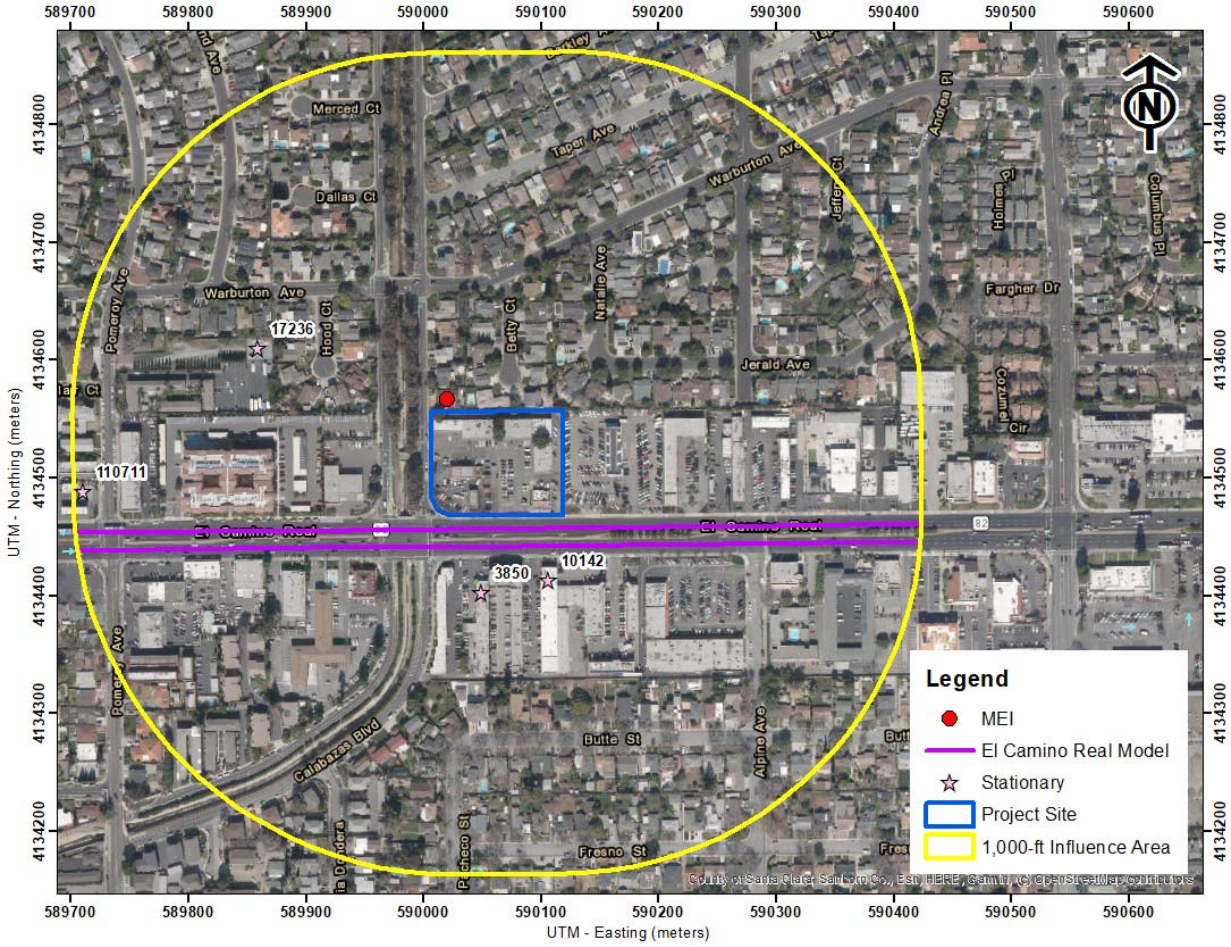


**Cumulative Community Risks of all TAC Sources at the Offsite Project MEI**

Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of a project site (i.e., influence area). These sources include rail lines, freeways or highways, busy surface streets, and stationary sources identified by BAAQMD.

A review of the project area based on provided traffic information indicated that traffic on El Camino Real would exceed 10,000 vehicles per day. Other nearby streets are assumed to have less than 10,000 vehicles per day. A review of BAAQMD's stationary source geographic information systems (GIS) map tool identified four stationary source with the potential to affect the project site and MEI. Figure 2 shows the location of the sources affecting the MEI. Community risk impacts from these sources upon the MEI reported in Table 6. Details of the modeling and community risk calculations are included in *Attachment 5.*

**Figure 2. Project Site and Nearby TAC and $PM_{2.5}$ Sources**



Local Roadways – El Camino Real

A refined analysis of potential health impacts from vehicle traffic on El Camino Real was conducted since the roadway was estimated to have average daily traffic (ADT) exceeding 10,000 vehicles. The refined analysis involved predicting 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. *Attachment 1* includes a description of how community risk impacts, including cancer risk are computed.

*Emission Rates*

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on the roadway using the Caltrans version of the EMFAC2017 emissions model, known as CT-EMFAC2017. CT-EMFAC2017 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 (e.g., 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 and 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-EMFAC2017 emissions data. Inputs to the model include region (Santa Clara County), type of road (major/collector), truck percentage for non-state highways in Santa Clara County (3.51 percent),[14] traffic mix assigned by CT-EMFAC2017 for the county, year of analysis (2022 – construction start year), and season (annual).

In order to estimate TAC and $PM_{2.5}$ emissions over the 30-year exposure period used for calculating the increased cancer risks for sensitive receptors at the MEI and project site, the CT-EMFAC2017 model was used to develop vehicle emission factors for the year 2022 (project construction 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 CT-EMFAC2017. Year 2022 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated since, as discussed above, overall vehicle emissions, and in particular diesel truck emissions, will decrease in the future.

The ADT for El Camino Real was calculated based on traffic data provided by the City of Santa Clara.[15] Assuming a 1 percent per year increase, the estimated ADT on El Camino Real was 36,080 vehicles. Average hourly traffic distributions for Santa Clara County roadways were developed

[14] BAAQMD, 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en

[15] Email correspondence with Patrick Kallas, Associate Project Manager, David J. Powers & Associates, Inc., September 17, 2021.

using the EMFAC model,[16] which were then applied to the ADT volumes to obtain estimated hourly traffic volumes and emissions for the roadway. For all hours of the day, other than during peak a.m. and p.m. periods, an average travel speed of 35 miles per hour (mph) on El Camino Real was used based on posted speed limit signs on the roadway. Traffic speeds during the peak a.m. and p.m. periods were assumed to be 10 miles per hour slower (i.e., 25 mph) to account for congestion and the amount of access in the area.

*Dispersion Modeling*

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the EPA AERMOD air quality dispersion model, which is recommended by the BAAQMD for this type of analysis.[17] TAC and $PM_{2.5}$ emissions from traffic on El Camino Real within 1,000 feet of the project site were evaluated. Vehicle traffic on the roadway was modeled using a series of adjacent volume sources along a line (line volume sources); with line segments used for the eastbound and westbound travel directions on the roadway. The same meteorological data and off-site sensitive receptors used in the previous dispersion modeling were used in the roadway modeling. Other inputs to the model included road geometry, hourly traffic emissions, and receptor locations. Annual TAC and $PM_{2.5}$ concentrations for 2022 from traffic on the roadway were calculated using the model. Concentrations were calculated at the project MEI with receptor heights of 5 feet (1.5 meters) to represent the breathing heights of residents in the single-family home.

Figure 2 shows the roadway segments modeled and residential receptor locations used in the modeling. Table 6 lists the risks and hazards from the roadway. The emission rates and roadway calculations used in the analysis are shown in *Attachment 5*.

<u>BAAQMD Permitted Stationary Sources</u>

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2018* GIS website,[18] which identifies the location of nearby stationary sources and their estimated risk and hazard impacts, including emissions and adjustments to account for new OEHHA guidance. Four sources were identified using this tool with two sources being auto body coating operations, one being a diesel generator, and one being a gas dispensing facility. A Stationary Source Information Form (SSIF) containing the identified sources was prepared and submitted to BAAQMD. BAAQMD provided updated emissions data and risk values.[19]

The screening level risks and hazards provided by BAAQMD for the stationary sources were adjusted for distance using BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines, Gasoline Dispending Facilities, and Generic Equipment*. Community risk impacts from the stationary sources upon the MEI are reported in Table 6.

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[16] The Burden output from EMFAC2007, a previous version of CARB's EMFAC model, was used for this since the current web-based version of EMFAC2014 does not include Burden type output with hour by hour traffic volume information.

[17] BAAQMD. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May 2012

[18] BAAQMD, https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65

[19] Correspondence with Matthew Hanson, Environmental Planner, BAAQMD, September 28, 2021.

Summary of Cumulative Health Risk Impact at Construction MEI

Table 6 reports both the project and cumulative community risk impacts at the sensitive receptors most affected by construction (i.e., the MEI). The project would have an exceedance with respect to community risk caused by project construction activities, since the unmitigated maximum cancer risk and annual $PM_{2.5}$ concentration exceed their respective BAAQMD single-source thresholds. With the implementation of *Mitigation Measure AQ-1 and AQ-2*, the project's cancer risks and $PM_{2.5}$ concentration would be lowered to levels below the single-source thresholds. The annual Hazard Index, unmitigated and mitigated, does not exceed its single-source threshold. The project's cancer risks, $PM_{2.5}$ concentration, and Hazard Index, unmitigated and mitigated, do not exceed their respective cumulative-source thresholds. According to BAAQMD, health risks would be less-than-significant if the risks from the project are reduced below the single-source thresholds.[20]

**Table 6. Cumulative Community Risk Impacts at the Location of the Project MEI**

| Source | | Cancer Risk (per million) | Annual $PM_{2.5}$ ($\mu g/m^3$) | Hazard Index |
|---|---|---|---|---|
| **Project Impacts** | | | | |
| Project Construction | Unmitigated | **16.40 (infant)** | **0.38** | 0.01 |
| | Mitigated | 2.81 (infant) | 0.15 | <0.01 |
| ***BAAQMD Single-Source Threshold*** | | ***10*** | ***0.3*** | ***1.0*** |
| *Exceed Threshold?* | Unmitigated | ***Yes*** | ***Yes*** | *No* |
| | Mitigated | *No* | *No* | *No* |
| **Cumulative Sources** | | | | |
| El Camino Real, ADT 36,080 | | 2.36 | 0.10 | <0.01 |
| El Camino Body Shop Inc (Facility ID #3850, Auto Body Coating), MEI at 485 feet | | - | - | <0.01 |
| F&S Auto Body Ltd Co (Facility ID #10142, Auto Body Coating), MEI at 500 feet | | - | - | <0.01 |
| City of Santa Clara - Well Site: Zone 1, 7 (Facility ID #17236, Generator), MEI at 450 feet | | 1.57 | <0.01 | <0.01 |
| El Camino Valero (Facility ID #110711, Gas Dispensing Facility), MEI at 950 feet | | 0.27 | - | <0.01 |
| *Combined Sources* | Unmitigated | 20.60 | <0.49 | <0.06 |
| | Mitigated | 7.01 | <0.26 | <0.06 |
| ***BAAQMD Cumulative Source Threshold*** | | ***100*** | ***0.8*** | ***10.0*** |
| **Exceed Threshold?** | Unmitigated | *No* | *No* | *No* |
| | Mitigated | *No* | *No* | *No* |

[20] Correspondence with Areana Flores, MSc, Environmental Planner, BAAQMD, February 23, 2021.

***Mitigation Measure AQ-2:*** **Use construction equipment that has low diesel particulate matter exhaust to minimize emissions**

A feasible plan to reduce emissions such that increased cancer risk and annual $PM_{2.5}$ concentrations from construction would be reduced below significance levels is as follows:

1. All construction equipment larger than 50 horsepower used at the site for more than two continuous days or 20 hours total shall meet U.S. EPA Tier 4 emission standards for particulate matter ($PM_{10}$ and $PM_{2.5}$). Alternatives to this include the following:

    a. Use of construction equipment with engines that meet U.S. EPA Tier 2 or 3 emission standards with CARB-certified Level 3 Diesel Particulate Filters (DPF)[21] or equivalent, otherwise,

    b. Use of electrical or non-diesel fueled equipment.

Alternatively, the applicant could develop a separate feasible plan that reduces on- and near-site construction diesel particulate matter emissions by 40 percent or greater. Such a plan would have to be reviewed and approved by the City.

*Effectiveness of Mitigation Measure AQ-1 and AQ-2*

CalEEMod was used to compute emissions associated with this mitigation measure assuming that all equipment met the less effective measure that requires U.S. EPA Tier 2 engines standards with Level 3 DPFs along with BAAQMD best management practices for construction were included. With this implemented, the project's construction cancer risk impact, assuming infant exposure, would be reduced by 83 percent to 2.81 chances per million. The project's annual $PM_{2.5}$ concentrations would be reduced by 61 percent to 0.15 $\mu g/m^3$. As a result, the project's construction cancer risk and $PM_{2.5}$ concentrations would be reduced below the BAAQMD single-source thresholds.

[21] See http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm

**On-Site Community Health Risk Impacts – New Project Residents**

In addition to evaluating health impact from project construction, a health risk assessment was completed to assess the impact existing TAC sources would have on the new proposed sensitive receptors (residents) that that project would introduce. The same TAC sources identified above were used in this health risk assessment.[22]

Local Roadways – El Camino Real

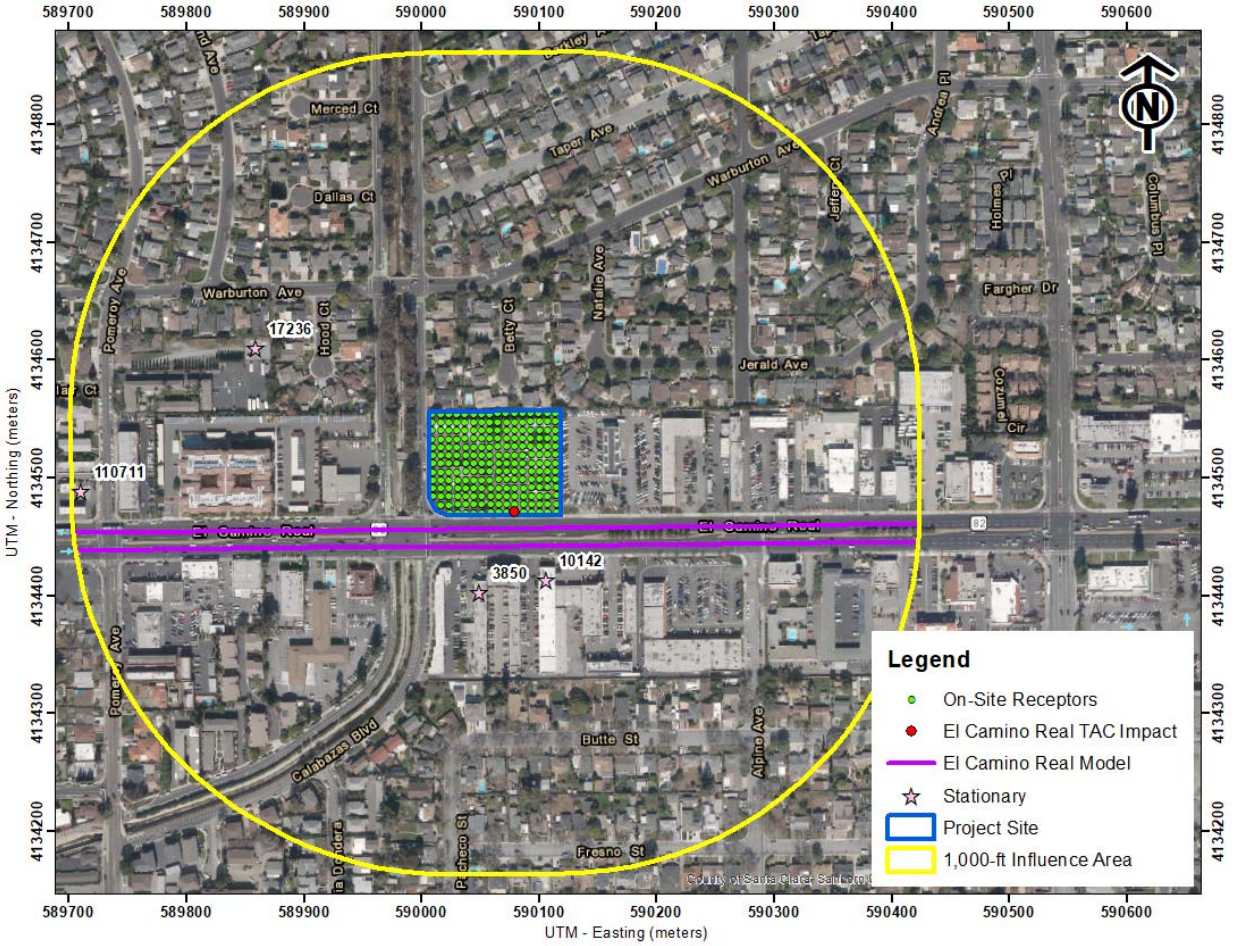
The roadway analysis for the project residents was conducted in the same manner as described above for the off-site MEI. The project set of receptors were placed throughout the project area and were spaced every 23 feet (7 meters). Roadway impacts were modeled at receptor heights of 5 feet (1.5 meters), 15 feet (4.5 meters), and 25 feet (7.6 meters) representing sensitive receptors on the first, second, and third floor of the future townhome buildings. The portions of El Camino Real included in the modeling are shown in Figure 3 along with the project site and receptor locations where impacts were modeled.

Maximum increased cancer risks were calculated for the residents at the project site using the maximum modeled TAC concentrations. A 30-year exposure period was used in calculating cancer risks assuming the residents would include third trimester pregnancy and infants/children and were assumed to be in the new housing areas for 24 hours per day for 350 days per year.

The highest impacts from El Camino Real occurred at a first-floor receptor along the southern boundary of the project site. Cancer risks and annual $PM_{2.5}$ concentrations associated with El Camino Real are greatest closest to the roadway and decrease with distance from the road. While cancer risk impacts from the roadway at the project site do not exceed its single-source threshold, the roadway $PM_{2.5}$ concentrations at ground-floor receptors within 90 feet of the closest roadway travel lane (Buildings 1 and 2) exceed its single-source threshold. The roadway community risk impacts at the project site are shown in Table 7. Details of the emission calculations, dispersion modeling, and cancer risk calculations are contained in *Attachment 5*.

[22] We note that to the extent this analysis considers *existing* air quality issues in relation to the impact on *future residents* of the Project, it does so for informational purposes only pursuant to the judicial decisions in *CBIA v. BAAQMD* (2015) 62 Cal.4th 369, 386 and *Ballona Wetlands Land Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 473, which confirm that the impacts of the environment on a project are excluded from CEQA unless the project itself "exacerbates" such impacts.

**Figure 3. Project Site, On-Site Residential Receptors, Roadway Segments Evaluated, and Locations of Maximum Roadway TAC Impacts**




Stationary Sources

The stationary source screening analysis for the new project sensitive receptors was conducted in the same manner as described above for the construction MEI. Table 7 shows the health risk screening results from the stationary sources.

Combined Community Health Risk at Project Site

Community risk impacts from the existing TAC sources upon the project site are reported in Table 7. The risks from the singular TAC sources are compared against the BAAQMD single-source threshold. The risks from all the sources are then combined and compared against the BAAQMD cumulative-source threshold. As shown, the cancer risk and HI from the nearby sources do not exceed their single-source or cumulative-source thresholds. The annual $PM_{2.5}$ concentrations are estimated to exceed the single-source threshold due to traffic emissions from El Camino Real.

**Table 7. Cumulative Community Risk Impacts Upon the On-site Sensitive Receptors**

| Source | | Cancer Risk (per million) | Annual $PM_{2.5}$ ($\mu g/m^3$) | Hazard Index |
|---|---|---|---|---|
| El Camino Real, ADT 36,080 | Without MERV13 | 2.63 to 8.27 | 0.12 to **0.46** | <0.01 |
| | With MERV13 | <3.99 | <0.14 | <0.01 |
| El Camino Body Shop Inc (Facility ID #3850, Auto Body Coating), Project Site at 180 feet | | - | - | <0.01 |
| F&S Auto Body Ltd Co (Facility ID #10142, Auto Body Coating), Project Site at 150 feet | | - | - | <0.01 |
| City of Santa Clara - Well Site: Zone 1, 7 (Facility ID #17236, Generator), Project Site at 465 feet | | 1.57 | <0.01 | <0.01 |
| El Camino Valero (Facility ID #110711, Gas Dispensing Facility), Project Site at 930 feet | | 0.28 | - | <0.01 |
| ***BAAQMD Single-Source Threshold*** | | ***>10.0*** | ***>0.3*** | ***>1.0*** |
| *Exceed Threshold?* | *Without MERV13* | *No* | ***Yes*** | *No* |
| | *With MERV13* | *No* | *No* | *No* |
| Cumulative Total | Without MERV13 | <10.12 | <0.47 | <0.05 |
| | With MERV13 | <5.84 | <0.15 | <0.05 |
| ***BAAQMD Cumulative Source Threshold*** | | ***>100*** | ***>0.8*** | ***>10.0*** |
| *Exceed Threshold?* | *Without MERV13* | *No* | *No* | *No* |
| | *With MERV13* | *No* | *No* | *No* |

**Recommended Design Features to Reduce Project Receptor Exposure**

Filtration in ventilation systems at the project site is recommended to reduce the level of harmful pollutants to below the significant thresholds. The significant exposure for new project receptors is judged by two effects: (1) increased cancer risk, and (2) annual $PM_{2.5}$ concentration. Exposure to annual $PM_{2.5}$ concentrations from El Camino Real are above the thresholds. These annual $PM_{2.5}$ concentrations are based on the exposure to $PM_{2.5}$ resulting from emissions attributable to truck and auto exhaust, the wearing of brakes and tires and re-entrainment of roadway dust from vehicles traveling over pavement. The modeled $PM_{2.5}$ exposure to future residents drives the requirements of this recommendation. Reducing particulate matter exposure would reduce both annual $PM_{2.5}$ exposures and cancer risk.

The project shall include the following measures to minimize long-term increased cancer risk and annual $PM_{2.5}$ exposure for new project occupants:

1. Install air filtration in residential units on the ground floor that are within 90 feet[23] of the closest El Camino Real travel lanes (Buildings 1 and 2). Air filtration devices shall be rated MERV13 or higher. To ensure adequate health protection to sensitive receptors (i.e., residents), this ventilation system, whether mechanical or passive, shall filter all fresh air that would be circulated into the dwelling units.

2. The ventilation system shall be designed to keep the building at positive pressure when doors and windows are closed to reduce the intrusion of unfiltered outside air into the building

[23] Note these are locations where modeled annual $PM_{2.5}$ concentrations from El Camino Real traffic are 0.3 $u g/m^3$ or higher.

3. As part of implementing this measure, an ongoing maintenance plan for the buildings' heating, ventilation, and air conditioning (HVAC) air filtration system shall be required that includes regular filter replacement.

4. Ensure that the use agreement and other property documents: (1) require cleaning, maintenance, and monitoring of the affected buildings for air flow leaks, (2) include assurance that new owners or 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.

*Effectiveness of Recommended Design Features*

A properly installed and operated ventilation system with MERV13 would achieve an 80-percent reduction for small particulates.[24] The overall effectiveness calculations take into account the amount of time spent outdoors and away from home. Assuming that the filtration system is 80-percent effective, and the individual is being exposed to 21 hours of indoor filtered air and three hours of outdoor unfiltered air, then the overall effectiveness of a MERV13 filtration system would be about 70-percent for $PM_{2.5}$ exposure. For El Camino Real, this would reduce the maximum annual $PM_{2.5}$ concentration to 0.14 $\mu g/m^3$. With this recommended design feature, impacts from El Camino Real would be below their respective single- and cumulative-source thresholds.

[24] Bay Area Air Quality Management District (2016). Appendix B: Best Practices to Reduce Exposure to Local Air Pollution, *Planning Healthy Places A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning* (p. 38). http://www.baaqmd.gov/~/media/files/planning-and-research/planning-healthy-places/php_may20_2016-pdf.pdf?la=en

## Supporting Documentation

*Attachment 1* is the methodology used to compute community risk impacts, including the methods to compute lifetime cancer risk from exposure to project emissions.

*Attachment 2* includes the CalEEMod output for project construction emissions. Also included are any modeling assumptions.

*Attachment 3* includes the EMFAC2021 emissions modeling. The input files for these calculations are voluminous and are available upon request in digital format.

*Attachment 4* is the construction health risk assessment. This includes the summary of the dispersion modeling and the cancer risk calculations for construction. AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format

*Attachment 5* includes the cumulative community risk calculations, modeling results, and health risk calculations from sources affecting the construction MEI and project site receptors.

## Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[25] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[26] This HRA used the 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.[27] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

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

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day) or liters per kilogram of body weight per 8-hour period for the case of worker or school child exposures. As recommended by the BAAQMD for residential exposures, 95$^{th}$ percentile breathing rates are used for the third trimester and infant exposures, and 80$^{th}$ percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95$^{th}$ percentile 8-hour breathing rates. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of

[25] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.
[26] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[27] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment ( HRA) Guidelines*. December 2016.

30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults, a 25-year exposure period is recommended by the BAAQMD. For school children a 9-year exposure period is recommended by the BAAQMD.

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the BAAQMD if there are no schools in the project vicinity have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

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

Cancer Risk (per million) = $CPF \times Inhalation\ Dose \times ASF \times ED/AT \times FAH \times 10^6$

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 = $C_{air} \times DBR^* \times A \times (EF/365) \times 10^{-6}$

Where:

$C_{air}$ = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
8HrBR = 8-hour breathing rate (L/kg body weight-8 hours)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
$10^{-6}$ = Conversion factor

The health risk parameters used in this evaluation are summarized as follows:

| Parameter | *Exposure Type* → | Infant | | Child | Adult |
|---|---|---|---|---|---|
| | *Age Range* → | 3rd Trimester | 0<2 | 2 < 16 | 16 - 30 |
| DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$ | | 1.10E+00 | 1.10E+00 | 1.10E+00 | 1.10E+00 |
| Daily Breathing Rate (L/kg-day) 80th Percentile Rate | | 273 | 758 | 572 | 261 |
| Daily Breathing Rate (L/kg-day) 95th Percentile Rate | | 361 | 1,090 | 745 | 335 |
| 8-hour Breathing Rate (L/kg-8 hours) 95th Percentile Rate | | - | 1,200 | 520 | 240 |
| Inhalation Absorption Factor | | 1 | 1 | 1 | 1 |
| Averaging Time (years) | | 70 | 70 | 70 | 70 |
| Exposure Duration (years) | | 0.25 | 2 | 14 | 14* |
| Exposure Frequency (days/year) | | 350 | 350 | 350 | 350* |
| Age Sensitivity Factor | | 10 | 10 | 3 | 1 |
| Fraction of Time at Home (FAH) | | 0.85-1.0 | 0.85-1.0 | 0.72-1.0 | 0.73* |
| * An 8-hour breathing rate (8HrBR) is used for worker and school child exposures. | | | | | |

Non-Cancer Hazards

Non-cancer health risk is usually determined by comparing the predicted level of exposure to a chemical to the level of exposure that is not expected to cause any adverse effects (reference exposure level), even to the most susceptible people. Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ($\mu g/m^3$).

Annual $PM_{2.5}$ Concentrations

While not a TAC, fine particulate matter ($PM_{2.5}$) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for $PM_{2.5}$ (project level and cumulative) are in terms of an increase in the annual average concentration. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

# Attachment 2: CalEEMod Modeling Inputs and Outputs

# Air Quality/Noise Construction Information Data Request

**Project Name: 3141 / 3155 El Camino Real, Santa Clara (Bowers Plaza)**

**Complete ALL Portions in Yellow**

See Equipment Type TAB for type, horsepower and load factor

**Project Size** 60 Dwelling Units; 2.44 total project acres disturbed

91144 s.f. residential

s.f. retail

s.f. office/commercial

s.f. other, specify:

37056 s.f. parking garage; 110 Attached spaces

s.f. parking lot; spaces

**Construction Hours** 7 am to 4 pm

**Pile Driving? Y/N? N**

**Project include on-site GENERATOR OR FIRE PUMP during project OPERATION? Y/N? N**

IF YES (if BOTH separate values) -->

Kilowatts/Horsepower: _____

Fuel Type: _____

Location in project (Plans Desired if Available):

DO NOT MULTIPLY EQUIPMENT HOURS/DAY BY THE QUANTITY OF EQUIPMENT

| Quantity | Description | HP | Load Factor | Hours/day | Total Work Days | Avg. Hours per day | HP Annual Hours | Comments |
|---|---|---|---|---|---|---|---|---|
| | **Demolition** | **Start Date:** | **6/1/2022** | **Total phase:** | **45** | | | **Overall Import/Export Volumes** |
| | | **End Date:** | **7/16/2022** | | | | | |
| 2 | Concrete/Industrial Saws | 81 | 0.73 | 6 | 15 | 2 | 10643 | **Demolition Volume** |
| 1 | Excavators | 158 | 0.38 | 6 | 10 | 1.33333333 | 3602 | Square footage of buildings to be demolished |
| 2 | Rubber-Tired Dozers | 247 | 0.4 | 6 | 10 | 1.33333333 | 11856 | (*or* total tons to be hauled) |
| 2 | Tractors/Loaders/Backhoes | 97 | 0.37 | 6 | 8 | 1.06666667 | 3445 | 106,286 square feet *or* |
| | *Other Equipment?* | | | | | | | ?_ Hauling volume (tons) |
| | | | | | | | | Any pavement demolished and hauled? _?_ t350 Tons |
| | **Site Preparation** | **Start Date:** | **7/17/2022** | **Total phase:** | **30** | | | |
| | | **End Date:** | **8/16/2022** | | | | | |
| 1 | Graders | 187 | 0.41 | 6 | 5 | 1 | 2300 | |
| 2 | Rubber Tired Dozers | 247 | 0.4 | 6 | 20 | 4 | 23712 | |
| 2 | Tractors/Loaders/Backhoes | 97 | 0.37 | 6 | 15 | 3 | 6460 | |
| | **Grading / Excavation** | **Start Date:** | **8/17/2022** | **Total phase:** | **45** | | | |
| | | **End Date:** | **10/1/2022** | | | | | **Soil Hauling Volume** |
| 2 | Excavators | 158 | 0.38 | 6 | 12 | 1.6 | 8646 | Export volume = _11,809_ cubic yards? |
| 0 | Graders | 187 | 0.41 | 6 | 12 | 1.6 | 0 | Import volume = _0_ cubic yards? |
| 2 | Rubber Tired Dozers | 247 | 0.4 | 6 | 12 | 1.6 | 14227 | |
| 2 | Concrete/Industrial Saws | 81 | 0.73 | 6 | 12 | 1.6 | 8515 | |
| 1 | Tractors/Loaders/Backhoes | 97 | 0.37 | 6 | 12 | 1.6 | 2584 | |
| | *Other Equipment?* | | | | | | | |
| | **Trenching/Foundation** | **Start Date:** | **10/2/2022** | **Total phase:** | **75** | | | |
| | | **End Date:** | **12/16/2022** | | | | | |
| 2 | Tractor/Loader/Backhoe | 97 | 0.37 | 6 | 40 | 3.2 | 17227 | |
| 0 | Excavators | 158 | 0.38 | 6 | 40 | 3.2 | 0 | |
| | *Other Equipment?* | | | | | | | |
| | **Building - Exterior** | **Start Date:** | **12/17/2022** | **Total phase:** | **180** | | | **Cement Trucks? _Y_20-30 Total Round-Trips** |
| | | **End Date:** | **6/15/2023** | | | | | |
| 0 | Cranes | 231 | 0.29 | 8 | 100 | 4.44444444 | 0 | Electric? (Y/N) _N_ Otherwise assumed diesel |
| 5 | Forklifts | 89 | 0.2 | 3.5 | 120 | 2.33333333 | 37380 | Liquid Propane (LPG)? (Y/N) _N_ Otherwise Assumed diesel |
| 2 | Generator Sets | 84 | 0.74 | 6 | 100 | 3.33333333 | 74592 | Or temporary line power? (Y/N) _Y_ |
| 2 | Tractors/Loaders/Backhoes | 97 | 0.37 | 6 | 60 | 2 | 25841 | |
| 3 | Welders | 46 | 0.45 | 6 | 10 | 0.33333333 | 3726 | |
| | *Other Equipment?* | | | | | | | |
| | **Building - Interior/Architectural Coating** | **Start Date:** | **6/16/2023** | **Total phase:** | **120** | | | |
| | | **End Date:** | **10/14/2023** | | | | | |
| 1 | Air Compressors | 78 | 0.48 | 6 | 60 | 3 | 13478 | |
| 0 | Aerial Lift | 62 | 0.31 | 8 | 90 | 6 | 0 | |
| | *Other Equipment?* | | | | | | | |
| | **Paving** | **Start Date:** | **10/15/2023** | **Total phase:** | **30** | | | |
| | | **End Date:** | **11/14/2023** | | | | | |
| 2 | Cement and Mortar Mixers | 9 | 0.56 | 5 | 5 | 0.83333333 | 252 | |
| 1 | Pavers | 130 | 0.42 | 5 | 5 | 0.83333333 | 1365 | **Asphalt? __405_ cubic yards or ____ round trips?** |
| 1 | Paving Equipment | 132 | 0.36 | 5 | 5 | 0.83333333 | 1188 | |
| 2 | Rollers | 80 | 0.38 | 5 | 5 | 0.83333333 | 1520 | |
| 2 | Tractors/Loaders/Backhoes | 97 | 0.37 | 5 | 5 | 0.83333333 | 1795 | |
| | *Other Equipment?* | | | | | | | |
| | **Additional Phases** | **Start Date:** | | **Total phase:** | | | | |
| | | **Start Date:** | | | | | | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |

**Equipment types listed in "Equipment Types" worksheet tab.**

Equipment listed in this sheet is to provide an example of inputs

It is assumed that water trucks would be used during grading

**Add or subtract phases and equipment, as appropriate**

**Modify horsepower or load factor, as appropriate**

6/1/2022

**Complete one sheet for each project component**

| Construction Criteria Air Pollutants | | | | | | |
|---|---|---|---|---|---|---|
| *Unmitigated* | ROG | NOX | PM10 Exhaust | PM2.5 Exhaust | **CO2e** | |
| Year | Tons | | | | MT | |
| Construction Equipment | | | | | | |
| 2022 | 0.05 | 0.49 | 0.02 | 0.02 | 61.90 | |
| 2023 | 0.70 | 0.43 | 0.02 | 0.02 | 78.19 | |
| *EMFAC* | | | | | | |
| 2022 | 0.01 | 0.08 | 0.005 | 0.002 | 60.19 | |
| 2023 | 0.01 | 0.10 | 0.01 | 0.003 | 87.71 | |
| *Total Construction Emissions by Year* | | | | | | |
| 2022 | 0.06 | 0.57 | 0.03 | 0.02 | 122.09 | |
| 2023 | 0.71 | 0.53 | 0.03 | 0.02 | 165.91 | |
| | *Total Construction Emissions* | | | | | |
| Tons | 0.77 | 1.09 | 0.06 | 0.05 | 288.00 | |
| Pounds/Workdays | *Average Daily Emissions* | | | | Workdays | |
| 2022 | 0.56 | 5.29 | 0.27 | 0.23 | | **214** |
| 2023 | 4.50 | 3.32 | 0.18 | 0.15 | | **317** |
| **Threshold - lbs/day** | **54.0** | **54.0** | **82.0** | **54.0** | | |
| | *Total Construction Emissions* | | | | | |
| Pounds | 5.06 | 8.61 | 0.45 | 0.38 | 0.00 | |
| Average | 2.91 | 4.11 | 0.22 | 0.18 | 0.00 | 531.00 |
| **Threshold - lbs/day** | **54.0** | **54.0** | **82.0** | **54.0** | | |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

# 3141-3155 El Camino Real, Santa Clara

**Santa Clara County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Condo/Townhouse | 60.00 | Dwelling Unit | 2.44 | 91,144.00 | 172 |
| Enclosed Parking Structure | 110.00 | Space | 0.00 | 37,056.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2024 |
| **Utility Company** | Silicon Valley Power | | | | |
| **CO2 Intensity (lb/MWhr)** | 307.98 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Provided land uses - plans & construction sheet

Construction Phase - Provided construction schedule

Off-road Equipment - Provided construction hours & equip

Off-road Equipment - Provided construction hours & equip

Off-road Equipment - Provided construction hours & equip

Off-road Equipment - Provided construction hours & equip

Off-road Equipment - Provided construction hours & equip

Off-road Equipment - Provided construction hours & equip

Off-road Equipment - Provided construction hours & equip

Grading - grading = 11,809-cy export

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Demolition - existing building demo = 106,286-sf

Trips and VMT - 0 Trips for EMFAC2021 adjustments, pavement demo = 350 tons, building const = 30 cement truck round trips, paving = 405-cy asphalt

Construction Off-road Equipment Mitigation - BMPs, Tier 2 DPF 3 mitigation

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 5.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 6.00 |

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| | | | |
|---|---|---|---|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 11.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 2 |
| tblConstEquipMitigation | Tier | No Change | Tier 2 |
| tblConstEquipMitigation | Tier | No Change | Tier 2 |
| tblConstEquipMitigation | Tier | No Change | Tier 2 |
| tblConstEquipMitigation | Tier | No Change | Tier 2 |
| tblConstEquipMitigation | Tier | No Change | Tier 2 |
| tblConstEquipMitigation | Tier | No Change | Tier 2 |
| tblConstEquipMitigation | Tier | No Change | Tier 2 |
| tblConstEquipMitigation | Tier | No Change | Tier 2 |
| tblConstEquipMitigation | Tier | No Change | Tier 2 |
| tblConstEquipMitigation | Tier | No Change | Tier 2 |
| tblConstEquipMitigation | Tier | No Change | Tier 2 |
| tblConstEquipMitigation | Tier | No Change | Tier 2 |
| tblConstEquipMitigation | Tier | No Change | Tier 2 |
| tblConstEquipMitigation | Tier | No Change | Tier 2 |
| tblConstructionPhase | NumDays | 10.00 | 120.00 |
| tblConstructionPhase | NumDays | 220.00 | 180.00 |
| tblConstructionPhase | NumDays | 20.00 | 45.00 |
| tblConstructionPhase | NumDays | 6.00 | 45.00 |
| tblConstructionPhase | NumDays | 10.00 | 30.00 |
| tblConstructionPhase | NumDays | 3.00 | 30.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 7.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 7.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 7.00 |

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| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDaysWeek | 5.00 | 7.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 7.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 7.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 7.00 |
| tblConstructionPhase | PhaseEndDate | 6/12/2023 | 10/13/2023 |
| tblConstructionPhase | PhaseEndDate | 5/15/2023 | 6/14/2023 |
| tblConstructionPhase | PhaseEndDate | 6/28/2022 | 7/15/2022 |
| tblConstructionPhase | PhaseEndDate | 7/11/2022 | 9/30/2022 |
| tblConstructionPhase | PhaseEndDate | 5/29/2023 | 11/13/2023 |
| tblConstructionPhase | PhaseEndDate | 7/1/2022 | 8/15/2022 |
| tblConstructionPhase | PhaseStartDate | 5/30/2023 | 6/16/2023 |
| tblConstructionPhase | PhaseStartDate | 7/12/2022 | 12/17/2022 |
| tblConstructionPhase | PhaseStartDate | 7/2/2022 | 8/17/2022 |
| tblConstructionPhase | PhaseStartDate | 5/16/2023 | 10/15/2023 |
| tblConstructionPhase | PhaseStartDate | 6/29/2022 | 7/17/2022 |
| tblGrading | MaterialExported | 0.00 | 11,809.00 |
| tblLandUse | LandUseSquareFeet | 60,000.00 | 91,144.00 |
| tblLandUse | LandUseSquareFeet | 44,000.00 | 37,056.00 |
| tblLandUse | LotAcreage | 3.75 | 2.44 |
| tblLandUse | LotAcreage | 0.99 | 0.00 |
| tblOffRoadEquipment | LoadFactor | 0.37 | 0.37 |
| tblOffRoadEquipment | OffRoadEquipmentType | | Excavators |
| tblOffRoadEquipment | OffRoadEquipmentType | | Rubber Tired Dozers |
| tblOffRoadEquipment | OffRoadEquipmentType | | Excavators |
| tblOffRoadEquipment | OffRoadEquipmentType | | Concrete/Industrial Saws |
| tblOffRoadEquipment | OffRoadEquipmentType | | Tractors/Loaders/Backhoes |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | |
|---|---|---|---|
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 5.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 3.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.80 |
| tblOffRoadEquipment | UsageHours | 8.00 | 2.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 2.30 |
| tblOffRoadEquipment | UsageHours | 8.00 | 3.30 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 1.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.80 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.80 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.80 |
| tblOffRoadEquipment | UsageHours | 8.00 | 1.30 |
| tblOffRoadEquipment | UsageHours | 8.00 | 1.60 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 2.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 1.10 |
| tblOffRoadEquipment | UsageHours | 7.00 | 1.60 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.80 |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | |
|---|---|---|---|
| tblOffRoadEquipment | UsageHours | 7.00 | 3.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.30 |
| tblTripsAndVMT | HaulingTripNumber | 483.00 | 0.00 |
| tblTripsAndVMT | HaulingTripNumber | 1,476.00 | 0.00 |
| tblTripsAndVMT | VendorTripNumber | 12.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 18.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 13.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 18.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 59.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 20.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 12.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 5.00 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2022 | 0.0495 | 0.4883 | 0.3918 | 7.0000e-004 | 0.2112 | 0.0242 | 0.2355 | 0.0890 | 0.0226 | 0.1116 | 0.0000 | 61.5011 | 61.5011 | 0.0160 | 0.0000 | 61.9003 |
| 2023 | 0.6983 | 0.4300 | 0.5688 | 9.0000e-004 | 0.0000 | 0.0223 | 0.0223 | 0.0000 | 0.0214 | 0.0214 | 0.0000 | 77.8937 | 77.8937 | 0.0120 | 0.0000 | 78.1942 |
| **Maximum** | **0.6983** | **0.4883** | **0.5688** | **9.0000e-004** | **0.2112** | **0.0242** | **0.2355** | **0.0890** | **0.0226** | **0.1116** | **0.0000** | **77.8937** | **77.8937** | **0.0160** | **0.0000** | **78.1942** |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2022 | 0.0248 | 0.6100 | 0.4452 | 7.0000e-004 | 0.0951 | 2.94E-03 | 0.0980 | 0.0400 | 2.9400e-003 | 0.0430 | 0.0000 | 61.5010 | 61.5010 | 0.0160 | 0.0000 | 61.9002 |
| 2023 | 0.6868 | 0.7695 | 0.6023 | 9.0000e-004 | 0.0000 | 4.70E-03 | 4.7000e-003 | 0.0000 | 4.7000e-003 | 4.7000e-003 | 0.0000 | 77.8936 | 77.8936 | 0.0120 | 0.0000 | 78.1941 |
| **Maximum** | **0.6868** | **0.7695** | **0.6023** | **9.0000e-004** | **0.0951** | **4.7000e-003** | **0.0980** | **0.0400** | **4.7000e-003** | **0.0430** | **0.0000** | **77.8936** | **77.8936** | **0.0160** | **0.0000** | **78.1941** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **4.84** | **-50.22** | **-9.05** | **0.00** | **55.00** | **83.58** | **60.16** | **55.00** | **82.66** | **64.17** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **6-1-2022** | **8-31-2022** | 0.3475 | 0.3636 |
| **2** | **9-1-2022** | **11-30-2022** | 0.1381 | 0.1883 |
| **3** | **12-1-2022** | **2-28-2023** | 0.2011 | 0.3344 |
| **4** | **3-1-2023** | **5-31-2023** | 0.2324 | 0.3924 |
| **5** | **6-1-2023** | **8-31-2023** | 0.4808 | 0.5238 |
| **6** | **9-1-2023** | **9-30-2023** | 0.1735 | 0.1808 |
| | | **Highest** | 0.4808 | 0.5238 |

## 2.2 Overall Operational

### Unmitigated Operational

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.5752 | 8.3300e-003 | 0.6370 | 4.0000e-004 | | 0.0297 | 0.0297 | | 0.0297 | 0.0297 | 2.7354 | 1.8533 | 4.5886 | 5.1000e-003 | 1.8000e-004 | 4.7696 |
| Energy | 5.5800e-003 | 0.0477 | 0.0203 | 3.0000e-004 | | 3.8600e-003 | 3.8600e-003 | | 3.8600e-003 | 3.8600e-003 | 0.0000 | 123.0787 | 123.0787 | 8.3300e-003 | 1.8900e-003 | 123.8513 |
| Mobile | 0.1699 | 0.1851 | 1.6098 | 3.3700e-003 | 0.3733 | 2.4000e-003 | 0.3756 | 0.0996 | 2.2300e-003 | 0.1019 | 0.0000 | 310.5935 | 310.5935 | 0.0200 | 0.0147 | 315.4689 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 5.6026 | 0.0000 | 5.6026 | 0.3311 | 0.0000 | 13.8801 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 1.2402 | 4.1600 | 5.4002 | 0.1278 | 3.0600e-003 | 9.5084 |
| **Total** | **0.7507** | **0.2412** | **2.2671** | **4.0700e-003** | **0.3733** | **0.0360** | **0.4092** | **0.0996** | **0.0358** | **0.1355** | **9.5782** | **439.6855** | **449.2637** | **0.4924** | **0.0198** | **467.4782** |

## Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.5752 | 8.3300e-003 | 0.6370 | 4.0000e-004 | | 0.0297 | 0.0297 | | 0.0297 | 0.0297 | 2.7354 | 1.8533 | 4.5886 | 5.1000e-003 | 1.8000e-004 | 4.7696 |
| Energy | 5.5800e-003 | 0.0477 | 0.0203 | 3.0000e-004 | | 3.8600e-003 | 3.8600e-003 | | 3.8600e-003 | 3.8600e-003 | 0.0000 | 123.0787 | 123.0787 | 8.3300e-003 | 1.8900e-003 | 123.8513 |
| Mobile | 0.1699 | 0.1851 | 1.6098 | 3.3700e-003 | 0.3733 | 2.4000e-003 | 0.3756 | 0.0996 | 2.2300e-003 | 0.1019 | 0.0000 | 310.5935 | 310.5935 | 0.0200 | 0.0147 | 315.4689 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 5.6026 | 0.0000 | 5.6026 | 0.3311 | 0.0000 | 13.8801 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 1.2402 | 4.1600 | 5.4002 | 0.1278 | 3.0600e-003 | 9.5084 |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | 0.7507 | 0.2412 | 2.2671 | 4.0700e-003 | 0.3733 | 0.0360 | 0.4092 | 0.0996 | 0.0358 | 0.1355 | 9.5782 | 439.6855 | 449.2637 | 0.4924 | 0.0198 | 467.4782 |

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

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 6/1/2022 | 7/15/2022 | 7 | 45 | |
| 2 | Site Preparation | Site Preparation | 7/17/2022 | 8/15/2022 | 7 | 30 | |
| 3 | Grading | Grading | 8/17/2022 | 9/30/2022 | 7 | 45 | |
| 4 | Building Construction | Building Construction | 12/17/2022 | 6/14/2023 | 7 | 180 | |
| 5 | Paving | Paving | 10/15/2023 | 11/13/2023 | 7 | 30 | |
| 6 | Architectural Coating | Architectural Coating | 6/16/2023 | 10/13/2023 | 7 | 120 | |
| 7 | Trenching | Trenching | 10/2/2022 | 12/15/2022 | 7 | 75 | |

**Acres of Grading (Site Preparation Phase): 16.88**

**Acres of Grading (Grading Phase): 9**

**Acres of Paving: 0**

**Residential Indoor: 184,567; Residential Outdoor: 61,522; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 2,223**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 3.00 | 78 | 0.48 |
| Paving | Cement and Mortar Mixers | 2 | 0.80 | 9 | 0.56 |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 2 | 2.00 | 81 | 0.73 |
| Building Construction | Cranes | 0 | 0.00 | 231 | 0.29 |
| Building Construction | Forklifts | 5 | 2.30 | 89 | 0.20 |
| Building Construction | Generator Sets | 2 | 3.30 | 84 | 0.74 |
| Grading | Graders | 0 | 0.00 | 187 | 0.41 |
| Site Preparation | Graders | 1 | 1.00 | 187 | 0.41 |
| Paving | Pavers | 1 | 0.80 | 130 | 0.42 |
| Paving | Paving Equipment | 1 | 0.80 | 132 | 0.36 |
| Paving | Rollers | 2 | 0.80 | 80 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 1.30 | 247 | 0.40 |
| Grading | Rubber Tired Dozers | 2 | 1.60 | 247 | 0.40 |
| Site Preparation | Scrapers | 0 | 0.00 | 367 | 0.48 |
| Building Construction | Tractors/Loaders/Backhoes | 2 | 2.00 | 97 | 0.37 |
| Demolition | Tractors/Loaders/Backhoes | 2 | 1.10 | 97 | 0.37 |
| Grading | Tractors/Loaders/Backhoes | 1 | 1.60 | 97 | 0.37 |
| Paving | Tractors/Loaders/Backhoes | 2 | 0.80 | 97 | 0.37 |
| Site Preparation | Tractors/Loaders/Backhoes | 2 | 3.00 | 97 | 0.37 |
| Building Construction | Welders | 3 | 0.30 | 46 | 0.45 |
| Demolition | Excavators | 1 | 1.30 | 158 | 0.38 |
| Site Preparation | Rubber Tired Dozers | 2 | 4.00 | 247 | 0.40 |
| Grading | Excavators | 2 | 1.60 | 158 | 0.38 |
| Grading | Concrete/Industrial Saws | 2 | 1.60 | 81 | 0.73 |
| Trenching | Tractors/Loaders/Backhoes | 2 | 3.20 | 97 | 0.37 |

## Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 7 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 5 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 7 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 12 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 8 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Trenching | 2 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

## 3.2 Demolition - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0523 | 0.0000 | 0.0523 | 7.9200e-003 | 0.0000 | 7.9200e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0119 | 0.1127 | 0.0932 | 1.7000e-004 | | 5.6100e-003 | 5.6100e-003 | | 5.3000e-003 | 5.3000e-003 | 0.0000 | 14.8844 | 14.8844 | 3.1900e-003 | 0.0000 | 14.9641 |
| **Total** | **0.0119** | **0.1127** | **0.0932** | **1.7000e-004** | **0.0523** | **5.6100e-003** | **0.0579** | **7.9200e-003** | **5.3000e-003** | **0.0132** | **0.0000** | **14.8844** | **14.8844** | **3.1900e-003** | **0.0000** | **14.9641** |

**Unmitigated Construction Off-Site**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0235 | 0.0000 | 0.0235 | 3.5600e-003 | 0.0000 | 3.5600e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.8600e-003 | 0.1434 | 0.1054 | 1.7000e-004 | | 6.9000e-004 | 6.9000e-004 | | 6.9000e-004 | 6.9000e-004 | 0.0000 | 14.8844 | 14.8844 | 3.1900e-003 | 0.0000 | 14.9641 |
| **Total** | **5.8600e-003** | **0.1434** | **0.1054** | **1.7000e-004** | **0.0235** | **6.9000e-004** | **0.0242** | **3.5600e-003** | **6.9000e-004** | **4.2500e-003** | **0.0000** | **14.8844** | **14.8844** | **3.1900e-003** | **0.0000** | **14.9641** |

**Mitigated Construction Off-Site**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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

## 3.3 Site Preparation - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0993 | 0.0000 | 0.0993 | 0.0506 | 0.0000 | 0.0506 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0152 | 0.1606 | 0.0821 | 1.8000e-004 | | 7.5900e-003 | 7.5900e-003 | | 6.9800e-003 | 6.9800e-003 | 0.0000 | 15.4193 | 15.4193 | 4.9900e-003 | 0.0000 | 15.5440 |
| **Total** | **0.0152** | **0.1606** | **0.0821** | **1.8000e-004** | **0.0993** | **7.5900e-003** | **0.1069** | **0.0506** | **6.9800e-003** | **0.0576** | **0.0000** | **15.4193** | **15.4193** | **4.9900e-003** | **0.0000** | **15.5440** |

### Unmitigated Construction Off-Site

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0447 | 0.0000 | 0.0447 | 0.0228 | 0.0000 | 0.0228 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.0800e-003 | 0.1528 | 0.1009 | 1.8000e-004 | | 5.8000e-004 | 5.8000e-004 | | 5.8000e-004 | 5.8000e-004 | 0.0000 | 15.4193 | 15.4193 | 4.9900e-003 | 0.0000 | 15.5440 |
| **Total** | **5.0800e-003** | **0.1528** | **0.1009** | **1.8000e-004** | **0.0447** | **5.8000e-004** | **0.0453** | **0.0228** | **5.8000e-004** | **0.0234** | **0.0000** | **15.4193** | **15.4193** | **4.9900e-003** | **0.0000** | **15.5440** |

## Mitigated Construction Off-Site

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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

## 3.4 Grading - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0596 | 0.0000 | 0.0596 | 0.0304 | 0.0000 | 0.0304 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0133 | 0.1279 | 0.1046 | 1.9000e-004 | | 6.2900e-003 | 6.2900e-003 | | 5.8900e-003 | 5.8900e-003 | 0.0000 | 16.9036 | 16.9036 | 4.1700e-003 | 0.0000 | 17.0077 |
| **Total** | **0.0133** | **0.1279** | **0.1046** | **1.9000e-004** | **0.0596** | **6.2900e-003** | **0.0659** | **0.0304** | **5.8900e-003** | **0.0363** | **0.0000** | **16.9036** | **16.9036** | **4.1700e-003** | **0.0000** | **17.0077** |

**Unmitigated Construction Off-Site**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0268 | 0.0000 | 0.0268 | 0.0137 | 0.0000 | 0.0137 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 6.5100e-003 | 0.1629 | 0.1213 | 1.9000e-004 | | 7.4000e-004 | 7.4000e-004 | | 7.4000e-004 | 7.4000e-004 | 0.0000 | 16.9036 | 16.9036 | 4.1700e-003 | 0.0000 | 17.0077 |
| **Total** | **6.5100e-003** | **0.1629** | **0.1213** | **1.9000e-004** | **0.0268** | **7.4000e-004** | **0.0276** | **0.0137** | **7.4000e-004** | **0.0144** | **0.0000** | **16.9036** | **16.9036** | **4.1700e-003** | **0.0000** | **17.0077** |

**Mitigated Construction Off-Site**

3141-3155 El Camino Real, Santa Clara - Santa Clara County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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

## 3.5 Building Construction - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 4.1200e-003 | 0.0370 | 0.0450 | 7.0000e-005 | | 2.0500e-003 | 2.0500e-003 | | 1.9700e-003 | 1.9700e-003 | 0.0000 | 6.1287 | 6.1287 | 9.8000e-004 | 0.0000 | 6.1533 |
| **Total** | **4.1200e-003** | **0.0370** | **0.0450** | **7.0000e-005** | | **2.0500e-003** | **2.0500e-003** | | **1.9700e-003** | **1.9700e-003** | **0.0000** | **6.1287** | **6.1287** | **9.8000e-004** | **0.0000** | **6.1533** |

**Unmitigated Construction Off-Site**

3141-3155 El Camino Real, Santa Clara - Santa Clara County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

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

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 2.9700e-003 | 0.0610 | 0.0477 | 7.0000e-005 | | 3.7000e-004 | 3.7000e-004 | | 3.7000e-004 | 3.7000e-004 | 0.0000 | 6.1287 | 6.1287 | 9.8000e-004 | 0.0000 | 6.1533 |
| **Total** | **2.9700e-003** | **0.0610** | **0.0477** | **7.0000e-005** | | **3.7000e-004** | **3.7000e-004** | | **3.7000e-004** | **3.7000e-004** | **0.0000** | **6.1287** | **6.1287** | **9.8000e-004** | **0.0000** | **6.1533** |

## Mitigated Construction Off-Site

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

3141-3155 El Camino Real, Santa Clara - Santa Clara County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 3.5 Building Construction - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0416 | 0.3752 | 0.4931 | 7.8000e-004 | | 0.0194 | 0.0194 | | 0.0186 | 0.0186 | 0.0000 | 67.4279 | 67.4279 | 0.0107 | 0.0000 | 67.6950 |
| **Total** | **0.0416** | **0.3752** | **0.4931** | **7.8000e-004** | | **0.0194** | **0.0194** | | **0.0186** | **0.0186** | **0.0000** | **67.4279** | **67.4279** | **0.0107** | **0.0000** | **67.6950** |

### Unmitigated Construction Off-Site

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

3141-3155 El Camino Real, Santa Clara - Santa Clara County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0327 | 0.6710 | 0.5243 | 7.8000e-004 | | 4.1200e-003 | 4.1200e-003 | | 4.1200e-003 | 4.1200e-003 | 0.0000 | 67.4278 | 67.4278 | 0.0107 | 0.0000 | 67.6949 |
| **Total** | **0.0327** | **0.6710** | **0.5243** | **7.8000e-004** | | **4.1200e-003** | **4.1200e-003** | | **4.1200e-003** | **4.1200e-003** | **0.0000** | **67.4278** | **67.4278** | **0.0107** | **0.0000** | **67.6949** |

## Mitigated Construction Off-Site

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

3141-3155 El Camino Real, Santa Clara - Santa Clara County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 3.6 Paving - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 1.6400e-003 | 0.0158 | 0.0213 | 3.0000e-005 | | 7.9000e-004 | 7.9000e-004 | | 7.3000e-004 | 7.3000e-004 | 0.0000 | 2.8060 | 2.8060 | 8.8000e-004 | 0.0000 | 2.8280 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **1.6400e-003** | **0.0158** | **0.0213** | **3.0000e-005** | | **7.9000e-004** | **7.9000e-004** | | **7.3000e-004** | **7.3000e-004** | **0.0000** | **2.8060** | **2.8060** | **8.8000e-004** | **0.0000** | **2.8280** |

### Unmitigated Construction Off-Site

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

3141-3155 El Camino Real, Santa Clara - Santa Clara County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 1.3200e-003 | 0.0279 | 0.0230 | 3.0000e-005 | | 1.5000e-004 | 1.5000e-004 | | 1.5000e-004 | 1.5000e-004 | 0.0000 | 2.8060 | 2.8060 | 8.8000e-004 | 0.0000 | 2.8280 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **1.3200e-003** | **0.0279** | **0.0230** | **3.0000e-005** | | **1.5000e-004** | **1.5000e-004** | | **1.5000e-004** | **1.5000e-004** | **0.0000** | **2.8060** | **2.8060** | **8.8000e-004** | **0.0000** | **2.8280** |

## Mitigated Construction Off-Site

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

3141-3155 El Camino Real, Santa Clara - Santa Clara County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 3.7 Architectural Coating - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.6493 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.7500e-003 | 0.0391 | 0.0543 | 9.0000e-005 | | 2.1200e-003 | 2.1200e-003 | | 2.1200e-003 | 2.1200e-003 | 0.0000 | 7.6598 | 7.6598 | 4.6000e-004 | 0.0000 | 7.6712 |
| **Total** | **0.6551** | **0.0391** | **0.0543** | **9.0000e-005** | | **2.1200e-003** | **2.1200e-003** | | **2.1200e-003** | **2.1200e-003** | **0.0000** | **7.6598** | **7.6598** | **4.6000e-004** | **0.0000** | **7.6712** |

### Unmitigated Construction Off-Site

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

3141-3155 El Camino Real, Santa Clara - Santa Clara County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.6493 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.4200e-003 | 0.0706 | 0.0550 | 9.0000e-005 | | 4.3000e-004 | 4.3000e-004 | | 4.3000e-004 | 4.3000e-004 | 0.0000 | 7.6598 | 7.6598 | 4.6000e-004 | 0.0000 | 7.6712 |
| **Total** | **0.6528** | **0.0706** | **0.0550** | **9.0000e-005** | | **4.3000e-004** | **4.3000e-004** | | **4.3000e-004** | **4.3000e-004** | **0.0000** | **7.6598** | **7.6598** | **4.6000e-004** | **0.0000** | **7.6712** |

## Mitigated Construction Off-Site

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

3141-3155 El Camino Real, Santa Clara - Santa Clara County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 3.8 Trenching - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 4.9200e-003 | 0.0501 | 0.0669 | 9.0000e-005 | | 2.6900e-003 | 2.6900e-003 | | 2.4800e-003 | 2.4800e-003 | 0.0000 | 8.1651 | 8.1651 | 2.6400e-003 | 0.0000 | 8.2312 |
| **Total** | **4.9200e-003** | **0.0501** | **0.0669** | **9.0000e-005** | | **2.6900e-003** | **2.6900e-003** | | **2.4800e-003** | **2.4800e-003** | **0.0000** | **8.1651** | **8.1651** | **2.6400e-003** | **0.0000** | **8.2312** |

### Unmitigated Construction Off-Site

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

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 4.3500e-003 | 0.0898 | 0.0700 | 9.0000e-005 | | 5.4000e-004 | 5.4000e-004 | | 5.4000e-004 | 5.4000e-004 | 0.0000 | 8.1651 | 8.1651 | 2.6400e-003 | 0.0000 | 8.2312 |
| **Total** | **4.3500e-003** | **0.0898** | **0.0700** | **9.0000e-005** | | **5.4000e-004** | **5.4000e-004** | | **5.4000e-004** | **5.4000e-004** | **0.0000** | **8.1651** | **8.1651** | **2.6400e-003** | **0.0000** | **8.2312** |

## Mitigated Construction Off-Site

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

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.1699 | 0.1851 | 1.6098 | 3.3700e-003 | 0.3733 | 2.4000e-003 | 0.3756 | 0.0996 | 2.2300e-003 | 0.1019 | 0.0000 | 310.5935 | 310.5935 | 0.0200 | 0.0147 | 315.4689 |
| Unmitigated | 0.1699 | 0.1851 | 1.6098 | 3.3700e-003 | 0.3733 | 2.4000e-003 | 0.3756 | 0.0996 | 2.2300e-003 | 0.1019 | 0.0000 | 310.5935 | 310.5935 | 0.0200 | 0.0147 | 315.4689 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Condo/Townhouse | 439.20 | 488.40 | 376.80 | 1,010,024 | 1,010,024 |
| Enclosed Parking Structure | 0.00 | 0.00 | 0.00 | | |
| Total | 439.20 | 488.40 | 376.80 | 1,010,024 | 1,010,024 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Condo/Townhouse | 10.80 | 4.80 | 5.70 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |
| Enclosed Parking Structure | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Condo/Townhouse | 0.572464 | 0.055653 | 0.187060 | 0.115672 | 0.020329 | 0.005102 | 0.007934 | 0.006404 | 0.000900 | 0.000380 | 0.024412 | 0.000914 | 0.002776 |
| Enclosed Parking Structure | 0.572464 | 0.055653 | 0.187060 | 0.115672 | 0.020329 | 0.005102 | 0.007934 | 0.006404 | 0.000900 | 0.000380 | 0.024412 | 0.000914 | 0.002776 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 67.8164 | 67.8164 | 7.2700e-003 | 8.8000e-004 | 68.2605 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 67.8164 | 67.8164 | 7.2700e-003 | 8.8000e-004 | 68.2605 |
| NaturalGas Mitigated | 5.5800e-003 | 0.0477 | 0.0203 | 3.0000e-004 | | 3.8600e-003 | 3.8600e-003 | | 3.8600e-003 | 3.8600e-003 | 0.0000 | 55.2623 | 55.2623 | 1.0600e-003 | 1.0100e-003 | 55.5907 |
| NaturalGas Unmitigated | 5.5800e-003 | 0.0477 | 0.0203 | 3.0000e-004 | | 3.8600e-003 | 3.8600e-003 | | 3.8600e-003 | 3.8600e-003 | 0.0000 | 55.2623 | 55.2623 | 1.0600e-003 | 1.0100e-003 | 55.5907 |

### 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Condo/Townhouse | 1.03558e+006 | 5.5800e-003 | 0.0477 | 0.0203 | 3.0000e-004 | | 3.8600e-003 | 3.8600e-003 | | 3.8600e-003 | 3.8600e-003 | 0.0000 | 55.2623 | 55.2623 | 1.0600e-003 | 1.0100e-003 | 55.5907 |
| Enclosed Parking Structure | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **5.5800e-003** | **0.0477** | **0.0203** | **3.0000e-004** | | **3.8600e-003** | **3.8600e-003** | | **3.8600e-003** | **3.8600e-003** | **0.0000** | **55.2623** | **55.2623** | **1.0600e-003** | **1.0100e-003** | **55.5907** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Condo/Townhouse | 1.03558e+006 | 5.5800e-003 | 0.0477 | 0.0203 | 3.0000e-004 | | 3.8600e-003 | 3.8600e-003 | | 3.8600e-003 | 3.8600e-003 | 0.0000 | 55.2623 | 55.2623 | 1.0600e-003 | 1.0100e-003 | 55.5907 |
| Enclosed Parking Structure | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **5.5800e-003** | **0.0477** | **0.0203** | **3.0000e-004** | | **3.8600e-003** | **3.8600e-003** | | **3.8600e-003** | **3.8600e-003** | **0.0000** | **55.2623** | **55.2623** | **1.0600e-003** | **1.0100e-003** | **55.5907** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Condo/Townhouse | 290908 | 40.6391 | 4.3500e-003 | 5.3000e-004 | 40.9053 |
| Enclosed Parking Structure | 194544 | 27.1773 | 2.9100e-003 | 3.5000e-004 | 27.3553 |
| **Total** | | **67.8164** | **7.2600e-003** | **8.8000e-004** | **68.2605** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Condo/Townhouse | 290908 | 40.6391 | 4.3500e-003 | 5.3000e-004 | 40.9053 |
| Enclosed Parking Structure | 194544 | 27.1773 | 2.9100e-003 | 3.5000e-004 | 27.3553 |
| **Total** | | **67.8164** | **7.2600e-003** | **8.8000e-004** | **68.2605** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.5752 | 8.3300e-003 | 0.6370 | 4.0000e-004 | | 0.0297 | 0.0297 | | 0.0297 | 0.0297 | 2.7354 | 1.8533 | 4.5886 | 5.1000e-003 | 1.8000e-004 | 4.7696 |
| Unmitigated | 0.5752 | 8.3300e-003 | 0.6370 | 4.0000e-004 | | 0.0297 | 0.0297 | | 0.0297 | 0.0297 | 2.7354 | 1.8533 | 4.5886 | 5.1000e-003 | 1.8000e-004 | 4.7696 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0649 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.3584 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.1384 | 3.1900e-003 | 0.1906 | 3.8000e-004 | | 0.0273 | 0.0273 | | 0.0273 | 0.0273 | 2.7354 | 1.1236 | 3.8589 | 4.4000e-003 | 1.8000e-004 | 4.0223 |
| Landscaping | 0.0135 | 5.1400e-003 | 0.4463 | 2.0000e-005 | | 2.4700e-003 | 2.4700e-003 | | 2.4700e-003 | 2.4700e-003 | 0.0000 | 0.7297 | 0.7297 | 7.0000e-004 | 0.0000 | 0.7473 |
| **Total** | **0.5752** | **8.3300e-003** | **0.6370** | **4.0000e-004** | | **0.0297** | **0.0297** | | **0.0297** | **0.0297** | **2.7354** | **1.8532** | **4.5886** | **5.1000e-003** | **1.8000e-004** | **4.7696** |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0649 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.3584 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.1384 | 3.1900e-003 | 0.1906 | 3.8000e-004 | | 0.0273 | 0.0273 | | 0.0273 | 0.0273 | 2.7354 | 1.1236 | 3.8589 | 4.4000e-003 | 1.8000e-004 | 4.0223 |
| Landscaping | 0.0135 | 5.1400e-003 | 0.4463 | 2.0000e-005 | | 2.4700e-003 | 2.4700e-003 | | 2.4700e-003 | 2.4700e-003 | 0.0000 | 0.7297 | 0.7297 | 7.0000e-004 | 0.0000 | 0.7473 |
| **Total** | **0.5752** | **8.3300e-003** | **0.6370** | **4.0000e-004** | | **0.0297** | **0.0297** | | **0.0297** | **0.0297** | **2.7354** | **1.8532** | **4.5886** | **5.1000e-003** | **1.8000e-004** | **4.7696** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 5.4002 | 0.1278 | 3.0600e-003 | 9.5084 |
| Unmitigated | 5.4002 | 0.1278 | 3.0600e-003 | 9.5084 |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

## 7.2 Water by Land Use

### Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Condo/Townhouse | 3.90924 / 2.46452 | 5.4002 | 0.1278 | 3.0600e-003 | 9.5084 |
| Enclosed Parking Structure | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **5.4002** | **0.1278** | **3.0600e-003** | **9.5084** |

### Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Condo/Townhouse | 3.90924 / 2.46452 | 5.4002 | 0.1278 | 3.0600e-003 | 9.5084 |
| Enclosed Parking Structure | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **5.4002** | **0.1278** | **3.0600e-003** | **9.5084** |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 5.6026 | 0.3311 | 0.0000 | 13.8801 |
| Unmitigated | 5.6026 | 0.3311 | 0.0000 | 13.8801 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Condo/Townhouse | 27.6 | 5.6026 | 0.3311 | 0.0000 | 13.8801 |
| Enclosed Parking Structure | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **5.6026** | **0.3311** | **0.0000** | **13.8801** |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Condo/Townhouse | 27.6 | 5.6026 | 0.3311 | 0.0000 | 13.8801 |
| Enclosed Parking Structure | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **5.6026** | **0.3311** | **0.0000** | **13.8801** |

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

Date: 10/6/2021 3:59 PM

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

# Attachment 3:  EMFAC2021 Calculations

## CalEEMod Construction Inputs

| Phase | CalEEMod WORKER TRIPS | CalEEMod VENDOR TRIPS | Total Worker Trips | Total Vendor Trips | CalEEMod HAULING TRIPS | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class | *Worker VMT* | *Vendor VMT* | *Hauling VMT* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 18 | 0 | 810 | 0 | 553 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 8748 | 0 | 11060 |
| Site Preparation | 13 | 0 | 390 | 0 | 0 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 4212 | 0 | 0 |
| Grading | 18 | 0 | 810 | 0 | 1476 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 8748 | 0 | 29520 |
| Trenching | 5 | 0 | 375 | 0 | 0 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 4050 | 0 | 0 |
| Building Construction | 56 | 12 | 10080 | 2160 | 60 | 10.8 | 7.3 | 7.3 | LD_Mix | HDT_Mix | HHDT | 108864 | 15768 | 438 |
| Architectural Coating | 12 | 0 | 1440 | 0 | 0 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 15552 | 0 | 0 |
| Paving | 20 | 0 | 600 | 0 | 98 | 10.8 | 7.3 | 7.3 | LD_Mix | HDT_Mix | HHDT | 6480 | 0 | 715.4 |

| **Number of Days Per Year** | | | | | |
|---|---|---|---|---|---|
| 2022 | 6/1/22 | 12/31/22 | 214 | 214 | |
| 2023 | 1/1/23 | 11/13/23 | 317 | 317 | |
| | | | 531 | **531** | ***Total Workdays*** |

| Phase | Start Date | End Date | Days/Week | Workdays |
|---|---|---|---|---|
| Demolition | 6/1/2022 | 7/15/2022 | 7 | 45 |
| Site Preparation | 7/17/2022 | 8/15/2022 | 7 | 30 |
| Grading | 8/17/2022 | 9/30/2022 | 7 | 45 |
| Trenching | 10/2/2022 | 12/15/2022 | 7 | 75 |
| Building Construction | 12/17/2022 | 6/14/2023 | 7 | 180 |
| Architectural Coating | 6/16/2023 | 10/13/2023 | 7 | 120 |
| Paving | 10/15/2023 | 11/13/2023 | 7 | 30 |

## Summary of Construction Traffic Emissions (EMFAC2021)

| Pollutants<br>YEAR | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | NBio- CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | *Tons* | | | | | | | *Metric Tons* | | |
| **Criteria Pollutants** | | | | | | | | | | | | | | |
| *2022* | 0.0107 | 0.0776 | 0.1271 | 0.0006 | 0.0284 | 0.0047 | 0.0332 | 0.0043 | 0.0020 | 0.0063 | 58.1142 | 0.0036 | 0.0067 | 60.1941 |
| *2023* | 0.0145 | 0.0966 | 0.1767 | 0.0009 | 0.0421 | 0.0069 | 0.0490 | 0.0063 | 0.0029 | 0.0092 | 84.6879 | 0.0053 | 0.0097 | 87.7136 |
| **Toxic Air Contaminants (0.5 Mile Trip Length)** | | | | | | | | | | | | | | |
| *2022* | 0.0087 | 0.0157 | 0.0393 | 0.0000 | 0.0013 | 0.0002 | 0.0015 | 0.0002 | 0.0001 | 0.0003 | 3.9501 | 0.0009 | 0.0006 | 4.1638 |
| *2023* | 0.0122 | 0.0222 | 0.0555 | 0.0001 | 0.0019 | 0.0003 | 0.0021 | 0.0003 | 0.0001 | 0.0004 | 5.7228 | 0.0013 | 0.0009 | 6.0319 |

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN

| Region | Calendar Y | Vehicle Cat | Model Yea | Speed | Fuel | Population | Total VMT | CVMT | EVMT | Trips | Energy Con | NOx_RUNEX | NOx_IDLEX | NOx_STREX | PM2.5_RU | PM2.5_IDL | PM2.5_STR | PM2.5_PM | PM2.5_PM | PM10_RUN | PM10_IDLE | PM10_STR | PM10_PM | PM10_PMI | CO2_RUNEX | CO2_IDLEX | CO2_STREX | CH4_RUNEX | CH4_IDLEX | CH4_STREX | N2O_RUNEX | N2O_IDLEX | N2O_STREX | ROG_RUNI | ROG_IDLEX | ROG_STREX | ROG_HOTS | ROG_RUNI | ROG_DIUR | TOG_RUNEX | TOG_IDLEX | TOG_STREX | TOG_HOTS | TOG_RUNI | TOG_DIUR | NH3_RUNEX | CO_RUNEX | CO_IDLEX | CO_STREX | SOx_RUNE | SOx_IDLEX | SOx_STREX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Santa Clara | 2022 | HHDT | Aggregate | Aggregate | Gasoline | 3.827367 | 105.1913 | 105.1913 | 0 | 76.57795 | 0 | 9.246272 | 0 | 1.235102 | 0.00578 | 0 | 0.001696 | 0.005 | 0.036521 | 0.006286 | 0 | 0.001845 | 0.02 | 0.104346 | 2407.176 | 0 | 49.64979 | 0.419155 | 0 | 0.000162 | 0.231899 | 0 | 0.038678 | 2.628217 | 0 | 0.000881 | 0.16301 | 1.46846 | 10.96573 | 3.835087 | 0 | 0.000965 | 0.16301 | 1.46846 | 10.96573 | 0.039703 | 94.77398 | 0 | 0.712144 | 0.023797 | 0 | 0.000491 |
| Santa Clara | 2022 | HHDT | Aggregate | Aggregate | Diesel | 8126.63 | 984491.3 | 984491.3 | 0 | 118998.6 | 0 | 2.444518 | 67.79787 | 2.544846 | 0.027272 | 0.034513 | 0 | 0.008769 | 0.027987 | 0.028505 | 0.036074 | 0 | 0.035077 | 0.079962 | 1677.544 | 12677.87 | 0 | 0.001458 | 0.236832 | 0 | 0.264298 | 1.997403 | 0 | 0.031398 | 5.098937 | 0 | 0 | 0 | 0 | 0.035744 | 5.804752 | 0 | 0 | 0 | 0 | 0 | 0.203666 | 0.125232 | 70.47019 | 0 | 0.015885 | 0.120052 | 0 |
| Santa Clara | 2022 | HHDT | Aggregate | Natural Ga | Aggregate | 660.7756 | 47681.36 | 47681.36 | 0 | 5809.397 | 0 | 1.356717 | 13.62116 | 0 | 0.001899 | 0.022358 | 0 | 0.009 | 0.047596 | 0.002065 | 0.024316 | 0 | 0.036 | 0.135989 | 1429.3 | 10316.77 | 0 | 2.688526 | 36.13158 | 0 | 0.291372 | 2.10314 | 0 | 0.062535 | 0.56302 | 0 | 0 | 0 | 0 | 2.77132 | 36.92822 | 0 | 0 | 0 | 0 | 0 | 0.851705 | 14.53027 | 73.87982 | 0 | 0 | 0 | 0 |
| Santa Clara | 2022 | LDA | Aggregate | Aggregate | Gasoline | 604047.8 | 22374250 | 22374250 | 0 | 2805661 | 0 | 0.053791 | 0 | 0.287921 | 0.00126 | 0 | 0.002062 | 0.002 | 0.002656 | 0.00137 | 0 | 0.002242 | 0.008 | 0.007588 | 287.1374 | 0 | 73.33113 | 0.002925 | 0 | 0.081262 | 0.005394 | 0 | 0.035089 | 0.011654 | 0 | 0.381731 | 0.098272 | 0.249754 | 1.530333 | 0.017001 | 0 | 0.417946 | 0.098272 | 0.249754 | 1.530333 | 0.032827 | 0.847106 | 0 | 3.666246 | 0.002839 | 0 | 0.000725 |
| Santa Clara | 2022 | LDA | Aggregate | Aggregate | Diesel | 1988.847 | 60930.09 | 60930.09 | 0 | 8564.495 | 0 | 0.263546 | 0 | 0 | 0.019976 | 0 | 0 | 0.002 | 0.00269 | 0.020879 | 0 | 0 | 0.008 | 0.007686 | 236.272 | 0 | 0 | 0.00151 | 0 | 0 | 0.037225 | 0 | 0 | 0.032513 | 0 | 0 | 0 | 0 | 0 | 0.037014 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0031 | 0.352928 | 0 | 0 | 0.002239 | 0 | 0 |
| Santa Clara | 2022 | LDA | Aggregate | Electricity | Aggregate | 49768.56 | 2058456 | 0 | 2058456 | 294733.9 | 794733.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.001531 | 0 | 0 | 0 | 0.008 | 0.004374 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2022 | LDA | Aggregate | Aggregate | Plug-in Hyb | 14080.33 | 626833.5 | 326494.8 | 300338.7 | 58222.18 | 90711.24 | 0.003418 | 0 | 0.11551 | 0.000718 | 0 | 0.002292 | 0.002 | 0.001368 | 0.000781 | 0 | 0.002492 | 0.008 | 0.003908 | 145.2228 | 0 | 67.22203 | 0.000469 | 0 | 0.042745 | 0.000623 | 0 | 0.021047 | 0.001478 | 0 | 0.173285 | 0.039673 | 0.035067 | 0.451466 | 0.002157 | 0 | 0.189725 | 0.039673 | 0.035067 | 0.451466 | 0.019838 | 0.224082 | 0 | 1.339893 | 0.001436 | 0 | 0.000665 |
| Santa Clara | 2022 | LDT1 | Aggregate | Aggregate | Gasoline | 54974.08 | 1779154 | 1779154 | 0 | 245182.1 | 0 | 0.160037 | 0 | 0.042895 | 0.001971 | 0 | 0.003006 | 0.002 | 0.003236 | 0.002144 | 0 | 0.003269 | 0.008 | 0.009246 | 338.1243 | 0 | 90.32061 | 0.007798 | 0 | 0.120165 | 0.011179 | 0 | 0.040992 | 0.03517 | 0 | 0.630523 | 0.182138 | 0.532387 | 2.932213 | 0.035502 | 1.699209 | 0 | 6.111696 | 0.003343 | 0 | 0.000893 |
| Santa Clara | 2022 | LDT1 | Aggregate | Diesel | Aggregate | 28.88602 | 444.5778 | 444.5778 | 0 | 84.95747 | 0 | 1.664076 | 0 | 0 | 0.241157 | 0 | 0 | 0.002 | 0.003731 | 0.252061 | 0 | 0 | 0.008 | 0.01066 | 415.6618 | 0 | 0 | 0.013984 | 0 | 0 | 0.065488 | 0 | 0 | 0.301058 | 0 | 0 | 0 | 0 | 0 | 0.342735 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0031 | 1.609282 | 0 | 0 | 0.003939 | 0 | 0 |
| Santa Clara | 2022 | LDT1 | Aggregate | Aggregate | Electricity | 182.9928 | 6367.047 | 0 | 6367.047 | 860.9347 | 2458.206 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.001541 | 0 | 0 | 0 | 0.008 | 0.004403 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2022 | LDT1 | Aggregate | Aggregate | Plug-in Hyb | 24.31577 | 1158.953 | 555.2268 | 603.7259 | 100.5457 | 182.3432 | 0.003144 | 0 | 0.11551 | 0.00042 | 0 | 0.001472 | 0.002 | 0.001376 | 0.000457 | 0 | 0.001601 | 0.008 | 0.003931 | 133.572 | 0 | 73.48077 | 0.00043 | 0 | 0.042675 | 0.000571 | 0 | 0.020981 | 0.001359 | 0 | 0.173285 | 0.025111 | 0.023155 | 0.300675 | 0.020121 | 0.206104 | 0 | 1.339893 | 0.00132 | 0 | 0.000726 |
| Santa Clara | 2022 | LDT2 | Aggregate | Aggregate | Gasoline | 274728.5 | 9911730 | 9911730 | 0 | 1286654 | 0 | 0.087216 | 0 | 0.387125 | 0.001308 | 0 | 0.002055 | 0.002 | 0.003124 | 0.001422 | 0 | 0.002235 | 0.008 | 0.008926 | 357.8859 | 0 | 92.09899 | 0.003418 | 0 | 0.092802 | 0.006919 | 0 | 0.046202 | 0.013801 | 0 | 0.439671 | 0.088088 | 0.231141 | 1.442564 | 0.020134 | 0 | 0.481384 | 0.088088 | 0.231141 | 1.442564 | 0.034673 | 0.960886 | 0 | 4.129331 | 0.003538 | 0 | 0.00091 |
| Santa Clara | 2022 | LDT2 | Aggregate | Aggregate | Diesel | 933.788 | 35569.23 | 35569.23 | 0 | 4479.453 | 0 | 0.049482 | 0 | 0 | 0.005617 | 0 | 0 | 0.002 | 0.003089 | 0.005871 | 0 | 0 | 0.008 | 0.008825 | 319.8313 | 0 | 0 | 0.000662 | 0 | 0 | 0.05039 | 0 | 0 | 0.01425 | 0 | 0 | 0 | 0 | 0 | 0.016223 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0031 | 0.132603 | 0 | 0 | 0.003031 | 0 | 0 |
| Santa Clara | 2022 | LDT2 | Aggregate | Aggregate | Electricity | 669.3585 | 23693.95 | 0 | 23693.95 | 3436.204 | 9147.819 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.001524 | 0 | 0 | 0 | 0.008 | 0.004354 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2022 | LDT2 | Aggregate | Aggregate | Plug-in Hyb | 1256.28 | 57825.99 | 28723.51 | 29102.47 | 5194.718 | 8789.814 | 0.003259 | 0 | 0.11551 | 0.000565 | 0 | 0.001911 | 0.002 | 0.001372 | 0.000614 | 0 | 0.002078 | 0.008 | 0.00392 | 138.4921 | 0 | 79.93529 | 0.000446 | 0 | 0.042681 | 0.000592 | 0 | 0.020988 | 0.00141 | 0 | 0.173285 | 0.026873 | 0.02547 | 0.333582 | 0.020057 | 0 | 0.189725 | 0.026873 | 0.02547 | 0.333582 | 0.020799 | 0.213696 | 0 | 1.339893 | 0.001369 | 0 | 0.00079 |
| Santa Clara | 2022 | LHDT1 | Aggregate | Aggregate | Gasoline | 19023.54 | 692949.2 | 692949.2 | 0 | 283422.4 | 0 | 0.22563 | 0.03858 | 0.680855 | 0.001666 | 0 | 0.000355 | 0.002 | 0.0273 | 0.001812 | 0 | 0.000386 | 0.008 | 0.078 | 910.666 | 121.4496 | 25.8752 | 0.010696 | 0.11838 | 0.036173 | 0.012587 | 0.003045 | 0.052713 | 0.053941 | 0.441903 | 0.181796 | 0.053097 | 0.287419 | 3.005479 | 0.078711 | 0.644824 | 0.189044 | 0.053097 | 0.287419 | 3.005479 | 0.044851 | 1.310703 | 3.750518 | 3.032062 | 0.009003 | 0.001201 | 0.000256 |
| Santa Clara | 2022 | LHDT1 | Aggregate | Diesel | Aggregate | 9466.897 | 364941.3 | 364941.3 | 0 | 119081.7 | 0 | 2.046185 | 2.148991 | 0 | 0.042212 | 0.027161 | 0 | 0.003 | 0.0273 | 0.044121 | 0.028389 | 0 | 0.012 | 0.078 | 640.1321 | 134.8074 | 0 | 0.009365 | 0.005098 | 0 | 0.100853 | 0.021239 | 0 | 0.201618 | 0.10976 | 0 | 0 | 0 | 0 | 0.229529 | 0.124954 | 0 | 0 | 0 | 0 | 0 | 0.156672 | 0.574472 | 0.909745 | 0 | 0.006066 | 0.001277 | 0 |
| Santa Clara | 2022 | LHDT2 | Aggregate | Aggregate | Gasoline | 2479.119 | 89333.8 | 89333.8 | 0 | 36935.18 | 0 | 0.214022 | 0.038116 | 0.662237 | 0.001522 | 0 | 0.000288 | 0.002 | 0.03185 | 0.001655 | 0 | 0.000313 | 0.008 | 0.091 | 1017.016 | 140.0339 | 25.93331 | 0.008303 | 0.117781 | 0.035049 | 0.012366 | 0.003023 | 0.05141 | 0.03933 | 0.436803 | 0.174741 | 0.049582 | 0.263161 | 2.773988 | 0.057391 | 0.637382 | 0.19132 | 0.049582 | 0.263161 | 2.773988 | 0.044954 | 1.055116 | 3.755463 | 3.106689 | 0.010054 | 0.001384 | 0.000256 |
| Santa Clara | 2022 | LHDT2 | Aggregate | Aggregate | Diesel | 4276.175 | 167672 | 167672 | 0 | 53788.9 | 0 | 1.602621 | 2.114348 | 0 | 0.036809 | 0.027077 | 0 | 0.003 | 0.03185 | 0.038473 | 0.028302 | 0 | 0.012 | 0.091 | 773.4619 | 214.911 | 0 | 0.00832 | 0.005098 | 0 | 0.121859 | 0.033859 | 0 | 0.179126 | 0.10976 | 0 | 0 | 0 | 0 | 0.203923 | 0.124954 | 0 | 0 | 0 | 0 | 0 | 0.1727 | 0.476085 | 0.909745 | 0 | 0.007329 | 0.002036 | 0 |
| Santa Clara | 2022 | MCY | Aggregate | Aggregate | Gasoline | 27595.09 | 162924 | 162924 | 0 | 55190.18 | 0 | 0.60517 | 0 | 0.149724 | 0.001772 | 0 | 0.003556 | 0.001 | 0.0042 | 0.001891 | 0 | 0.003773 | 0.004 | 0.012 | 188.9834 | 0 | 50.90901 | 0.173457 | 0 | 0.19335 | 0.041009 | 0 | 0.008761 | 1.156556 | 0 | 1.442993 | 3.560376 | 3.734124 | 3.980024 | 1.378949 | 0 | 1.568432 | 3.560376 | 3.734124 | 3.980024 | 0.008705 | 13.58248 | 0 | 8.107621 | 0.001868 | 0 | 0.000503 |
| Santa Clara | 2022 | MDV | Aggregate | Aggregate | Gasoline | 150747.3 | 5216512 | 5216512 | 0 | 697659.3 | 0 | 0.136769 | 0 | 0.517519 | 0.001357 | 0 | 0.002255 | 0.002 | 0.003193 | 0.001475 | 0 | 0.002452 | 0.008 | 0.009123 | 434.2294 | 0 | 112.1929 | 0.005018 | 0 | 0.119363 | 0.009481 | 0 | 0.045397 | 0.021781 | 0 | 0.614579 | 0.106179 | 0.293735 | 1.762049 | 0.031733 | 0 | 0.672881 | 0.106179 | 0.293735 | 1.762049 | 0.034617 | 1.174347 | 0 | 4.66825 | 0.004293 | 0 | 0.001109 |
| Santa Clara | 2022 | MDV | Aggregate | Aggregate | Diesel | 2337.328 | 86668.85 | 86668.85 | 0 | 11158.46 | 0 | 0.05815 | 0 | 0 | 0.005454 | 0 | 0 | 0.002 | 0.003153 | 0.0057 | 0 | 0 | 0.008 | 0.009009 | 417.1884 | 0 | 0 | 0.000553 | 0 | 0 | 0.065728 | 0 | 0 | 0.011906 | 0 | 0 | 0 | 0 | 0 | 0.013554 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0031 | 0.20344 | 0 | 0 | 0.003953 | 0 | 0 |
| Santa Clara | 2022 | MDV | Aggregate | Electricity | Aggregate | 623.6975 | 22215.8 | 0 | 22215.8 | 3205.616 | 8577.131 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.001523 | 0 | 0 | 0 | 0.008 | 0.004351 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2022 | MDV | Aggregate | Plug-in Hyb | Aggregate | 789.5612 | 33722.81 | 17285.18 | 16437.63 | 3264.836 | 4964.654 | 0.003363 | 0 | 0.11551 | 0.000723 | 0 | 0.002366 | 0.002 | 0.001369 | 0.000786 | 0 | 0.002574 | 0.008 | 0.003913 | 142.9094 | 0 | 99.86367 | 0.000458 | 0 | 0.042456 | 0.000605 | 0 | 0.020778 | 0.001454 | 0 | 0.173285 | 0.030414 | 0.029758 | 0.381921 | 0.002122 | 0 | 0.189725 | 0.030414 | 0.029758 | 0.381921 | 0.021528 | 0.220512 | 0 | 1.339893 | 0.001413 | 0 | 0.000987 |
| Santa Clara | 2022 | MH | Aggregate | Aggregate | Gasoline | 2642.084 | 23105.28 | 23105.28 | 0 | 264.3141 | 0 | 0.551445 | 0 | 0.40416 | 0.001917 | 0 | 0.000461 | 0.003 | 0.015756 | 0.002085 | 0 | 0.000502 | 0.012 | 0.045017 | 1949.266 | 0 | 32.13484 | 0.02167 | 0 | 0.038467 | 0.030967 | 0 | 0.041056 | 0.101032 | 0 | 0.168576 | 13.95792 | 0.32254 | 4.985527 | 0.147425 | 0 | 0.184569 | 13.95792 | 0.32254 | 4.985527 | 0.044583 | 2.705832 | 0 | 3.782453 | 0.01927 | 0 | 0.000318 |
| Santa Clara | 2022 | MH | Aggregate | Aggregate | Diesel | 940.8008 | 9155.21 | 9155.21 | 0 | 94.08008 | 0 | 4.438358 | 0 | 0 | 0.104654 | 0 | 0 | 0.004 | 0.015675 | 0.109386 | 0 | 0 | 0.016 | 0.044785 | 1080.89 | 0 | 0 | 0.005865 | 0 | 0 | 0.170295 | 0 | 0 | 0 | 0 | 0 | 0 | 0.126278 | 0 | 0 | 0 | 0.143759 | 0 | 0 | 0 | 0 | 0 | 0.143863 | 0.424501 | 0 | 0 | 0.010242 | 0 | 0 |
| Santa Clara | 2022 | MHDT | Aggregate | Aggregate | Gasoline | 1426.535 | 69284.18 | 69284.18 | 0 | 28542.11 | 0 | 0.686176 | 0.088062 | 0.462297 | 0.001432 | 0 | 0.000593 | 0.003 | 0.015756 | 0.001558 | 0 | 0.000645 | 0.012 | 0.045017 | 1819.358 | 542.4673 | 48.22005 | 0.022377 | 0.249961 | 0.051086 | 0.030967 | 0.006806 | 0.032093 | 0.113907 | 1.006391 | 0.293642 | 0.041091 | 0.336192 | 3.327263 | 0.166213 | 1.468523 | 0.321501 | 0.041091 | 0.336192 | 3.327263 | 0.044929 | 2.41434 | 15.04306 | 6.517433 | 0.017986 | 0.005363 | 0.000477 |
| Santa Clara | 2022 | MHDT | Aggregate | Diesel | Aggregate | 10189.55 | 428042.3 | 428042.3 | 0 | 121266.8 | 0 | 1.73167 | 15.28688 | 1.483339 | 0.020297 | 0.042841 | 0 | 0.003 | 0.015941 | 0.021215 | 0.044778 | 0 | 0.012 | 0.045546 | 1158.231 | 2324.123 | 0 | 0.002426 | 0.013407 | 0 | 0.18248 | 0.366167 | 0 | 0.052238 | 0.288656 | 0 | 0 | 0 | 0 | 0.05947 | 0.328613 | 0 | 0 | 0 | 0 | 0 | 0.196531 | 0.168917 | 7.277505 | 0 | 0.010968 | 0.022008 | 0 |
| Santa Clara | 2022 | MHDT | Aggregate | Natural Ga | Aggregate | 84.48052 | 3914.205 | 3914.205 | 0 | 796.8889 | 0 | 0.162027 | 6.474875 | 0 | 0.001029 | 0.016219 | 0 | 0.003 | 0.016011 | 0.001119 | 0.01764 | 0 | 0.012 | 0.045746 | 1002.329 | 5210.514 | 0 | 0.725882 | 17.91735 | 0 | 0.204331 | 1.062197 | 0 | 0.010371 | 0.256004 | 0 | 0 | 0 | 0 | 0.740815 | 18.28597 | 0 | 0 | 0 | 0 | 0 | 1.06 | 2.991509 | 30.51881 | 0 | 0 | 0 | 0 |
| Santa Clara | 2022 | OBUS | Aggregate | Aggregate | Gasoline | 470.9234 | 21653.3 | 21653.3 | 0 | 9422.235 | 0 | 0.596343 | 0.064966 | 0.407047 | 0.000863 | 0 | 0.000262 | 0.003 | 0.01568 | 0.000939 | 0 | 0.000285 | 0.012 | 0.044799 | 1804.41 | 384.2235 | 32.13915 | 0.017165 | 0.194553 | 0.036748 | 0.027969 | 0.005221 | 0.030733 | 0.084851 | 0.744858 | 0.194941 | 0.033671 | 0.142865 | 2.559429 | 0.123815 | 1.086895 | 0.213436 | 0.033671 | 0.142865 | 2.559429 | 0.044907 | 1.918016 | 5.766114 | 4.119591 | 0.017838 | 0.003798 | 0.000318 |
| Santa Clara | 2022 | OBUS | Aggregate | Aggregate | Diesel | 852.1679 | 61336.68 | 61336.68 | 0 | 8739.295 | 0 | 1.430263 | 8.186956 | 1.463102 | 0.021712 | 0.009363 | 0 | 0.003 | 0.01808 | 0.022694 | 0.009786 | 0 | 0.012 | 0.051656 | 1287.997 | 1601.524 | 0 | 0.002446 | 0.020931 | 0 | 0.202924 | 0.252321 | 0 | 0.052654 | 0.450629 | 0 | 0 | 0 | 0 | 0.059942 | 0.513007 | 0 | 0 | 0 | 0 | 0 | 0.209454 | 0.176751 | 7.212161 | 0 | 0.012197 | 0.015165 | 0 |
| Santa Clara | 2022 | OBUS | Aggregate | Natural Ga | Aggregate | 6.12419 | 392.3999 | 392.3599 | 0 | 54.50529 | 0 | 0.261572 | 1.567279 | 0 | 0.000722 | 0.003187 | 0 | 0.003 | 0.016148 | 0.000785 | 0.003466 | 0 | 0.012 | 0.046137 | 1035.05 | 1183.472 | 0 | 0.750937 | 4.605624 | 0 | 0.211002 | 0.241259 | 0 | 0.010729 | 0.065805 | 0 | 0 | 0 | 0 | 0.766387 | 4.700378 | 0 | 0 | 0 | 0 | 0 | 1.06 | 3.149633 | 5.746939 | 0 | 0 | 0 | 0 |
| Santa Clara | 2022 | SBUS | Aggregate | Aggregate | Gasoline | 160.4139 | 7959.43 | 7959.43 | 0 | 641.6556 | 0 | 0.527271 | 0.925562 | 0.689048 | 0.000853 | 0 | 0.000055 | 0.002 | 0.015721 | 0.000928 | 0 | 0.000599 | 0.008 | 0.044917 | 820.0467 | 2616.389 | 59.14656 | 0.01243 | 2.458676 | 0.074784 | 0.027982 | 0.086242 | 0.063619 | 0.060464 | 10.62737 | 0.42659 | 0.108472 | 0.246255 | 1.510943 | 0.088229 | 15.50744 | 0.467063 | 0.108472 | 0.246255 | 1.510943 | 0.045 | 1.548936 | 82.15497 | 10.71476 | 0.008107 | 0.025866 | 0.000585 |
| Santa Clara | 2022 | SBUS | Aggregate | Diesel | Aggregate | 662.5162 | 15413.71 | 15413.71 | 0 | 9593.235 | 0 | 4.235498 | 22.873 | 0.450634 | 0.022112 | 0.02288 | 0 | 0.003 | 0.015721 | 0.023112 | 0.023915 | 0 | 0.012 | 0.044917 | 1152.917 | 2246.353 | 0 | 0.002834 | 0.008182 | 0 | 0.181642 | 0.353914 | 0 | 0.061017 | 0.17615 | 0 | 0 | 0 | 0 | 0.069464 | 0.200533 | 0 | 0 | 0 | 0 | 0 | 0.140239 | 0.185604 | 4.488491 | 0 | 0.010917 | 0.021272 | 0 |
| Santa Clara | 2022 | SBUS | Aggregate | Natural Ga | Aggregate | 22.59677 | 578.3532 | 578.3532 | 0 | 327.2012 | 0 | 0.608852 | 5.295722 | 0 | 0.003378 | 0.010766 | 0 | 0.003 | 0.015721 | 0.003674 | 0.011708 | 0 | 0.012 | 0.044917 | 1281.922 | 4050.07 | 0 | 3.549889 | 15.56318 | 0 | 0.261328 | 0.825633 | 0 | 0.050721 | 0.222367 | 0 | 0 | 0 | 0 | 3.622922 | 15.88337 | 0 | 0 | 0 | 0 | 0 | 1.06 | 12.18179 | 19.41173 | 0 | 0 | 0 | 0 |
| Santa Clara | 2022 | UBUS | Aggregate | Aggregate | Gasoline | 45.81104 | 4784.037 | 4784.037 | 0 | 183.2442 | 0 | 0.03147 | 0 | 0.560776 | 0.000899 | 0 | 8.88E-05 | 0.002 | 0.03185 | 0.000978 | 0 | 9.66E-05 | 0.008 | 0.091 | 974.6428 | 0 | 38.21309 | 0.002303 | 0 | 0.053785 | 0.004696 | 0 | 0.082445 | 0.006534 | 0 | 0.197701 | 0.064874 | 0.125778 | 0.787098 | 0.009534 | 0 | 0.216458 | 0.064874 | 0.125778 | 0.787098 | 0.045 | 0.577943 | 0 | 5.5933 | 0.009635 | 0 | 0.000378 |
| Santa Clara | 2022 | UBUS | Aggregate | Diesel | Aggregate | 435.6475 | 48716.13 | 48716.13 | 0 | 1742.59 | 0 | 0.386257 | 0 | 0 | 0.007023 | 0 | 0 | 0.0083 | 0.0385 | 0.00734 | 0 | 0 | 0.0332 | 0.11 | 1100.743 | 0 | 0 | 0.003215 | 0 | 0 | 0.173422 | 0 | 0 | 0.069208 | 0 | 0 | 0 | 0 | 0 | 0.078788 | 0 | 0 | 0 | 0 | 0 | 0 | 0.187775 | 0.079368 | 0 | 0 | 0.01043 | 0 | 0 |
| Santa Clara | 2022 | UBUS | Aggregate | Electricity | Aggregate | 5.046757 | 199.0027 | 0 | 199.0027 | 20.18703 | 346.9103 | 0 | 0 | 0 | 0 | 0 | 0 | 0.009 | 0.01925 | 0 | 0 | 0 | 0.036 | 0.055 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2022 | UBUS | Aggregate | Aggregate | Natural Ga | 41.84875 | 4783.781 | 4783.781 | 0 | 167.395 | 0 | 0.058772 | 0 | 0 | 0.000282 | 0 | 0 | 0.008181 | 0.0385 | 0.000295 | 0 | 0 | 0.032723 | 0.11 | 1299.039 | 0 | 0 | 4.245393 | 0 | 0 | 0.264818 | 0 | 0 | 0.060658 | 0 | 0 | 0 | 0 | 0 | 4.332735 | 0 | 0 | 0 | 0 | 0 | 0 | 0.97 | 49.03622 | 0 | 0 | 0 | 0 | 0 |

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN

| Region | Calendar Y | Vehicle Cat | Model Yea | Speed | Fuel | Population | Total VMT | CVMT | EVMT | Trips | Energy Con | NOx_RUNEX | NOx_IDLEX | NOx_STREX | PM2.5_RU | PM2.5_IDL | PM2.5_ST | PM2.5_PM | PM2.5_PM | PM10_RUN | PM10_IDLE | PM10_STR | PM10_PM | PM10_PMI | CO2_RUNEX | CO2_IDLEX | CO2_STREX | CH4_RUNEX | CH4_IDLEX | CH4_STREX | N2O_RUNEX | N2O_IDLEX | N2O_STREX | ROG_RUNI | ROG_IDLEX | ROG_STREX | ROG_HOTS | ROG_RUNI | ROG_DIUR | TOG_RUNEX | TOG_IDLEX | TOG_STREX | TOG_HOTS | TOG_RUNI | TOG_DIUR | NH3_RUNEX | CO_RUNEX | CO_IDLEX | CO_STREX | SOx_RUNE | SOx_IDLEX | SOx_STREX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Santa Clara | 2023 | HHDT | Aggregate | Aggregate | Gasoline | 3.454009 | 114.3093 | 114.3093 | 0 | 69.10781 | 0 | 8.107874 | 0 | 1.602501 | 0.00493 | 0 | 0.0017 | 0.005 | 0.035266 | 0.005362 | 0 | 0.001849 | 0.02 | 0.100759 | 2306.817 | 0 | 49.81185 | 0.340225 | 0 | 0.00018 | 0.208909 | 0 | 0.045697 | 2.104867 | 0 | 0.000979 | 0.158374 | 1.426645 | 10.65375 | 3.071416 | 0 | 0.001072 | 0.158374 | 1.426645 | 10.65375 | 0.040468 | 83.0074 | 0 | 1.02738 | 0.022805 | 0 | 0.000492 |
| Santa Clara | 2023 | HHDT | Aggregate | Aggregate | Diesel | 8235.059 | 991289 | 991289 | 0 | 120860.8 | 0 | 1.969368 | 63.40488 | 2.849455 | 0.025957 | 0.031631 | 0 | 0.008769 | 0.027531 | 0.027131 | 0.033061 | 0 | 0.035077 | 0.078661 | 1656.801 | 12241.32 | 0 | 0.000809 | 0.237446 | 0 | 0.26103 | 1.928625 | 0 | 0.017417 | 5.112156 | 0 | 0 | 0 | 0 | 0.019828 | 5.819801 | 0 | 0 | 0 | 0 | 0 | 0.214624 | 0.087393 | 74.20136 | 0 | 0.015689 | 0.115918 | 0 |
| Santa Clara | 2023 | HHDT | Aggregate | Aggregate | Electricity | 6.70171 | 411.5054 | 0 | 411.5054 | 103.2044 | 754.9233 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00874 | 0.013383 | 0 | 0 | 0 | 0.03496 | 0.038238 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2023 | HHDT | Aggregate | Aggregate | Natural Ga | 753.7366 | 53295.97 | 53295.97 | 0 | 6914.034 | 0 | 1.208844 | 13.92832 | 0 | 0.001774 | 0.024237 | 0 | 0.009 | 0.046729 | 0.001929 | 0.02636 | 0 | 0.036 | 0.133512 | 1398.51 | 10630.2 | 0 | 2.44811 | 37.44665 | 0 | 0.285095 | 2.167036 | 0 | 0.054572 | 0.572265 | 0 | 0 | 0 | 0 | 0.860105 | 13.78246 | 74.03965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2023 | LDA | Aggregate | Aggregate | Gasoline | 601938.3 | 22370251 | 22370251 | 0 | 2795479 | 0 | 0.047412 | 0 | 0.27189 | 0.001217 | 0 | 0.001992 | 0.002 | 0.002656 | 0.001323 | 0 | 0.002167 | 0.008 | 0.007588 | 282.586 | 0 | 71.87767 | 0.002603 | 0 | 0.076449 | 0.004995 | 0 | 0.034134 | 0.01016 | 0 | 0.353794 | 0.094758 | 0.240611 | 1.480552 | 0.014823 | 0 | 0.387359 | 0.094758 | 0.240611 | 1.480552 | 0.033781 | 0.787617 | 0 | 3.436611 | 0.002794 | 0 | 0.000711 |
| Santa Clara | 2023 | LDA | Aggregate | Aggregate | Diesel | 1871.125 | 56220.8 | 56220.8 | 0 | 8000.531 | 0 | 0.238318 | 0 | 0 | 0.018559 | 0 | 0 | 0.002 | 0.002698 | 0.019399 | 0 | 0 | 0.008 | 0.007709 | 234.6327 | 0 | 0 | 0.001413 | 0 | 0 | 0.036966 | 0 | 0 | 0.030417 | 0 | 0 | 0 | 0 | 0 | 0.034627 | 0 | 0 | 0 | 0 | 0 | 0.0031 | 0.342459 | 0 | 0 | 0.002223 | 0 | 0 |
| Santa Clara | 2023 | LDA | Aggregate | Aggregate | Electricity | 53751.15 | 2268185 | 0 | 2268185 | 265250.1 | 875706.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.001532 | 0 | 0 | 0 | 0.008 | 0.004377 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2023 | LDA | Aggregate | Aggregate | Plug-in Hyb | 15805.32 | 700610.9 | 356649.7 | 343961.3 | 65355 | 103886.6 | 0.00334 | 0 | 0.11551 | 0.000664 | 0 | 0.002171 | 0.002 | 0.001373 | 0.000722 | 0 | 0.002361 | 0.008 | 0.003922 | 141.9339 | 0 | 66.50966 | 0.000457 | 0 | 0.042604 | 0.000605 | 0 | 0.020916 | 0.001444 | 0 | 0.173285 | 0.040642 | 0.036088 | 0.447056 | 0.002108 | 0 | 0.189725 | 0.040642 | 0.036088 | 0.447056 | 0.019705 | 0.219019 | 0 | 1.339893 | 0.001403 | 0 | 0.000658 |
| Santa Clara | 2023 | LDT1 | Aggregate | Aggregate | Gasoline | 53782.25 | 1744480 | 1744480 | 0 | 239737.9 | 0 | 0.143293 | 0 | 0.404336 | 0.00185 | 0 | 0.002837 | 0.002 | 0.003239 | 0.002012 | 0 | 0.003085 | 0.008 | 0.009253 | 333.6435 | 0 | 88.48953 | 0.006987 | 0 | 0.112557 | 0.010257 | 0 | 0.039834 | 0.031222 | 0 | 0.583212 | 0.174145 | 0.503091 | 2.807011 | 0.045546 | 0 | 0.638542 | 0.174145 | 0.503091 | 2.807011 | 0.035775 | 1.553409 | 0 | 5.660037 | 0.003298 | 0 | 0.000875 |
| Santa Clara | 2023 | LDT1 | Aggregate | Aggregate | Diesel | 26.04714 | 391.8698 | 391.8698 | 0 | 75.17737 | 0 | 1.659056 | 0 | 0 | 0.24041 | 0 | 0 | 0.002 | 0.003728 | 0.25128 | 0 | 0 | 0.008 | 0.010651 | 415.6155 | 0 | 0 | 0.013928 | 0 | 0 | 0.06548 | 0 | 0 | 0.299852 | 0 | 0 | 0 | 0 | 0 | 0.341362 | 0 | 0 | 0 | 0 | 0 | 0.0031 | 1.601395 | 0 | 0 | 0.003938 | 0 | 0 |
| Santa Clara | 2023 | LDT1 | Aggregate | Aggregate | Electricity | 194.8941 | 7068.184 | 0 | 7068.184 | 916.4832 | 2728.903 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00154 | 0 | 0 | 0 | 0.008 | 0.0044 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2023 | LDT1 | Aggregate | Aggregate | Plug-in Hyb | 43.27677 | 2048.369 | 944.1579 | 1104.211 | 178.9495 | 333.5047 | 0.003025 | 0 | 0.11551 | 0.000387 | 0 | 0.00141 | 0.002 | 0.001383 | 0.000421 | 0 | 0.001534 | 0.008 | 0.003951 | 128.5161 | 0 | 72.39136 | 0.000412 | 0 | 0.042439 | 0.000544 | 0 | 0.020762 | 0.001308 | 0 | 0.173285 | 0.024584 | 0.021781 | 0.285922 | 0.001909 | 0 | 0.189725 | 0.024584 | 0.021781 | 0.285922 | 0.019359 | 0.198314 | 0 | 1.339893 | 0.001271 | 0 | 0.000716 |
| Santa Clara | 2023 | LDT2 | Aggregate | Aggregate | Gasoline | 280180.4 | 10140967 | 10140967 | 0 | 1311796 | 0 | 0.077207 | 0 | 0.358346 | 0.001265 | 0 | 0.002003 | 0.002 | 0.003125 | 0.001375 | 0 | 0.002179 | 0.008 | 0.008929 | 351.1382 | 0 | 90.07377 | 0.003121 | 0 | 0.087759 | 0.006381 | 0 | 0.038646 | 0.012417 | 0 | 0.410727 | 0.085119 | 0.224187 | 1.404898 | 0.018118 | 0 | 0.449694 | 0.085119 | 0.224187 | 1.404898 | 0.035545 | 0.896823 | 0 | 3.892097 | 0.003471 | 0 | 0.00089 |
| Santa Clara | 2023 | LDT2 | Aggregate | Aggregate | Diesel | 978.4967 | 36936.87 | 36936.87 | 0 | 4673.401 | 0 | 0.046157 | 0 | 0 | 0.005431 | 0 | 0 | 0.002 | 0.003102 | 0.005677 | 0 | 0 | 0.008 | 0.008863 | 315.6668 | 0 | 0 | 0.00065 | 0 | 0 | 0.049733 | 0 | 0 | 0.013984 | 0 | 0 | 0 | 0 | 0 | 0.015919 | 0 | 0 | 0 | 0 | 0 | 0.0031 | 0.132099 | 0 | 0 | 0.002991 | 0 | 0 |
| Santa Clara | 2023 | LDT2 | Aggregate | Aggregate | Electricity | 1105.879 | 38931.7 | 0 | 38931.7 | 5663.051 | 15030.85 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.001525 | 0 | 0 | 0 | 0.008 | 0.004357 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2023 | LDT2 | Aggregate | Aggregate | Plug-in Hyb | 1696.55 | 77270.66 | 37142.68 | 40127.98 | 7015.234 | 12119.85 | 0.003154 | 0 | 0.11551 | 0.000504 | 0 | 0.001759 | 0.002 | 0.001378 | 0.000548 | 0 | 0.001913 | 0.008 | 0.003938 | 134.0231 | 0 | 78.93358 | 0.000429 | 0 | 0.042457 | 0.000568 | 0 | 0.020778 | 0.001364 | 0 | 0.173285 | 0.02624 | 0.024448 | 0.318232 | 0.00199 | 0 | 0.189725 | 0.02624 | 0.024448 | 0.318232 | 0.020144 | 0.206812 | 0 | 1.339893 | 0.001325 | 0 | 0.000778 |
| Santa Clara | 2023 | LHDT1 | Aggregate | Aggregate | Gasoline | 19180.96 | 711085.5 | 711085.5 | 0 | 285767.8 | 0 | 0.197814 | 0.037373 | 0.6588 | 0.001595 | 0 | 0.000328 | 0.002 | 0.0273 | 0.001734 | 0 | 0.000356 | 0.008 | 0.078 | 889.7424 | 120.2664 | 25.83956 | 0.009485 | 0.115635 | 0.034516 | 0.011082 | 0.003012 | 0.051891 | 0.047656 | 0.428153 | 0.172233 | 0.050564 | 0.277601 | 2.913784 | 0.069539 | 0.62476 | 0.188574 | 0.050564 | 0.277601 | 2.913784 | 0.044872 | 1.225109 | 3.753425 | 3.080251 | 0.008796 | 0.001189 | 0.000255 |
| Santa Clara | 2023 | LHDT1 | Aggregate | Aggregate | Diesel | 9807.465 | 384084.8 | 384084.8 | 0 | 123365.6 | 0 | 1.780633 | 2.029274 | 0 | 0.038253 | 0.026974 | 0 | 0.003 | 0.0273 | 0.039983 | 0.028193 | 0 | 0.012 | 0.078 | 635.427 | 132.908 | 0 | 0.008623 | 0.005098 | 0 | 0.100112 | 0.02094 | 0 | 0.185652 | 0.10976 | 0 | 0 | 0 | 0 | 0.211352 | 0.124954 | 0 | 0 | 0 | 0 | 0.16551 | 0.518876 | 0.909745 | 0 | 0.006021 | 0.001259 | 0 |
| Santa Clara | 2023 | LHDT2 | Aggregate | Aggregate | Gasoline | 2494.382 | 90793.04 | 90793.04 | 0 | 37162.58 | 0 | 0.187016 | 0.036817 | 0.642061 | 0.001446 | 0 | 0.00026 | 0.002 | 0.03185 | 0.001572 | 0 | 0.000283 | 0.008 | 0.091 | 997.3845 | 138.7974 | 25.72325 | 0.007074 | 0.114568 | 0.033461 | 0.01097 | 0.002967 | 0.050452 | 0.033047 | 0.42203 | 0.165607 | 0.046993 | 0.25097 | 2.676301 | 0.048222 | 0.615826 | 0.181319 | 0.046993 | 0.25097 | 2.676301 | 0.044967 | 0.961891 | 3.759407 | 3.119312 | 0.00986 | 0.001372 | 0.000254 |
| Santa Clara | 2023 | LHDT2 | Aggregate | Aggregate | Diesel | 4479.532 | 176769.2 | 176769.2 | 0 | 56346.87 | 0 | 1.416942 | 1.998258 | 0 | 0.034177 | 0.027026 | 0 | 0.003 | 0.03185 | 0.035723 | 0.028248 | 0 | 0.012 | 0.091 | 764.5039 | 212.1206 | 0 | 0.007824 | 0.005098 | 0 | 0.120448 | 0.03342 | 0 | 0.168448 | 0.10976 | 0 | 0 | 0 | 0 | 0.191767 | 0.124954 | 0 | 0 | 0 | 0 | 0.178982 | 0.44054 | 0.909745 | 0 | 0.007244 | 0.00201 | 0 |
| Santa Clara | 2023 | MCY | Aggregate | Aggregate | Gasoline | 27894.5 | 164894.5 | 164894.5 | 0 | 55788.99 | 0 | 0.586927 | 0 | 0.142374 | 0.001778 | 0 | 0.003413 | 0.001 | 0.0042 | 0.001899 | 0 | 0.003626 | 0.004 | 0.012 | 188.3093 | 0 | 49.59811 | 0.167622 | 0 | 0.187482 | 0.040223 | 0 | 0.008379 | 1.105923 | 0 | 1.392636 | 3.5601 | 3.745685 | 3.947874 | 1.324135 | 0 | 1.513873 | 3.5601 | 3.745685 | 3.947874 | 0.00876 | 13.08956 | 0 | 8.051197 | 0.001862 | 0 | 0.00049 |
| Santa Clara | 2023 | MDV | Aggregate | Aggregate | Gasoline | 153799.1 | 5358084 | 5358084 | 0 | 712433.9 | 0 | 0.117759 | 0 | 0.470106 | 0.001289 | 0 | 0.002144 | 0.002 | 0.003187 | 0.001402 | 0 | 0.002331 | 0.008 | 0.009106 | 426.0995 | 0 | 109.7064 | 0.004406 | 0 | 0.110292 | 0.008479 | 0 | 0.043081 | 0.018826 | 0 | 0.559259 | 0.101975 | 0.285798 | 1.72733 | 0.02744 | 0 | 0.612315 | 0.101975 | 0.285798 | 1.72733 | 0.035428 | 1.067328 | 0 | 4.333252 | 0.004212 | 0 | 0.001085 |
| Santa Clara | 2023 | MDV | Aggregate | Aggregate | Diesel | 2374.918 | 86834.44 | 86834.44 | 0 | 11267.05 | 0 | 0.053096 | 0 | 0 | 0.00515 | 0 | 0 | 0.002 | 0.003181 | 0.005383 | 0 | 0 | 0.008 | 0.00909 | 413.3141 | 0 | 0 | 0.000529 | 0 | 0 | 0.065118 | 0 | 0 | 0.011397 | 0 | 0 | 0 | 0 | 0 | 0.012975 | 0 | 0 | 0 | 0 | 0 | 0.0031 | 0.202592 | 0 | 0 | 0.003916 | 0 | 0 |
| Santa Clara | 2023 | MDV | Aggregate | Aggregate | Electricity | 1130.115 | 40073.7 | 0 | 40073.7 | 5799.833 | 15471.76 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.001524 | 0 | 0 | 0 | 0.008 | 0.004354 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2023 | MDV | Aggregate | Aggregate | Plug-in Hyb | 986.0895 | 41899.14 | 20787.35 | 21111.79 | 4077.48 | 6376.389 | 0.003256 | 0 | 0.11551 | 0.000638 | 0 | 0.002151 | 0.002 | 0.001376 | 0.000693 | 0 | 0.002339 | 0.008 | 0.00393 | 138.3296 | 0 | 98.37574 | 0.000441 | 0 | 0.042261 | 0.000581 | 0 | 0.020595 | 0.001408 | 0 | 0.173285 | 0.02985 | 0.028058 | 0.359617 | 0.002054 | 0 | 0.189725 | 0.02985 | 0.028058 | 0.359617 | 0.020837 | 0.213457 | 0 | 1.339893 | 0.001368 | 0 | 0.000973 |
| Santa Clara | 2023 | MH | Aggregate | Aggregate | Gasoline | 2522.745 | 22546.87 | 22546.87 | 0 | 252.3754 | 0 | 0.479133 | 0 | 0.412521 | 0.001781 | 0 | 0.000428 | 0.003 | 0.015756 | 0.001937 | 0 | 0.000466 | 0.012 | 0.045017 | 1948.243 | 0 | 31.87585 | 0.018146 | 0 | 0.038028 | 0.02809 | 0 | 0.042647 | 0.082252 | 0 | 0.163779 | 13.03985 | 0.30297 | 4.773625 | 0.120022 | 0 | 0.179318 | 13.03985 | 0.30297 | 4.773625 | 0.044742 | 2.111943 | 0 | 3.629376 | 0.01926 | 0 | 0.000315 |
| Santa Clara | 2023 | MH | Aggregate | Aggregate | Diesel | 959.1578 | 9344.849 | 9344.849 | 0 | 95.91578 | 0 | 4.269554 | 0 | 0 | 0.097907 | 0 | 0 | 0.004 | 0.015675 | 0.102334 | 0 | 0 | 0.016 | 0.044785 | 1081.435 | 0 | 0 | 0.005704 | 0 | 0 | 0.17038 | 0 | 0 | 0.122812 | 0 | 0 | 0 | 0 | 0 | 0.139813 | 0 | 0 | 0 | 0 | 0 | 0.150005 | 0.410284 | 0 | 0 | 0.010247 | 0 | 0 |
| Santa Clara | 2023 | MHDT | Aggregate | Aggregate | Gasoline | 1418.703 | 70785.86 | 70785.86 | 0 | 28385.41 | 0 | 0.562864 | 0.088304 | 0.453053 | 0.001386 | 0 | 0.000555 | 0.003 | 0.015756 | 0.001507 | 0 | 0.000603 | 0.012 | 0.045017 | 1792.411 | 536.9661 | 47.19918 | 0.018074 | 0.254589 | 0.049387 | 0.026381 | 0.007064 | 0.032566 | 0.09086 | 1.010025 | 0.279571 | 0.037187 | 0.302385 | 3.037923 | 0.132583 | 1.473826 | 0.306095 | 0.037187 | 0.302385 | 3.037923 | 0.04497 | 1.909686 | 15.08517 | 6.156285 | 0.01772 | 0.005308 | 0.000467 |
| Santa Clara | 2023 | MHDT | Aggregate | Aggregate | Diesel | 10273.55 | 431550.4 | 431550.4 | 0 | 122418.2 | 0 | 1.337342 | 13.57242 | 1.624162 | 0.016518 | 0.035742 | 0 | 0.003 | 0.015941 | 0.017265 | 0.037358 | 0 | 0.012 | 0.045546 | 1151.562 | 2263.789 | 0 | 0.010721 | 0.012298 | 0 | 0.181429 | 0.356661 | 0 | 0.037048 | 0.26478 | 0 | 0 | 0 | 0 | 0.042176 | 0.301431 | 0 | 0 | 0 | 0 | 0.209014 | 0.132571 | 7.583386 | 0 | 0.010905 | 0.021437 | 0 |
| Santa Clara | 2023 | MHDT | Aggregate | Aggregate | Electricity | 4.749835 | 101.8022 | 0 | 101.8022 | 59.6458 | 108.685 | 0 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.00799 | 0 | 0 | 0 | 0.012 | 0.022828 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2023 | MHDT | Aggregate | Aggregate | Natural Ga | 83.841 | 4047.874 | 4047.874 | 0 | 762.81 | 0 | 0.141319 | 6.52743 | 0 | 0.001137 | 0.017647 | 0 | 0.003 | 0.016002 | 0.001236 | 0.019193 | 0 | 0.012 | 0.045721 | 989.385 | 5296.533 | 0 | 0.740055 | 17.59163 | 0 | 0.201693 | 1.079733 | 0 | 0.010574 | 0.25135 | 0 | 0 | 0 | 0 | 0.755281 | 17.95355 | 0 | 0 | 0 | 0 | 1.06 | 2.992708 | 33.64344 | 0 | 0 | 0 | 0 |
| Santa Clara | 2023 | OBUS | Aggregate | Aggregate | Gasoline | 458.8974 | 20830.08 | 20830.08 | 0 | 9181.619 | 0 | 0.553081 | 0.064991 | 0.405616 | 0.000893 | 0 | 0.000264 | 0.003 | 0.01568 | 0.000972 | 0 | 0.000287 | 0.012 | 0.044799 | 1784.092 | 381.8461 | 31.89445 | 0.015808 | 0.194938 | 0.036281 | 0.026177 | 0.005253 | 0.030766 | 0.078109 | 0.745234 | 0.192301 | 0.034706 | 0.154035 | 2.766253 | 0.113977 | 1.087444 | 0.210546 | 0.034706 | 0.154035 | 2.766253 | 0.044918 | 1.743956 | 5.768375 | 4.071703 | 0.017638 | 0.003775 | 0.000315 |
| Santa Clara | 2023 | OBUS | Aggregate | Aggregate | Diesel | 870.4209 | 61645.66 | 61645.66 | 0 | 8910.755 | 0 | 1.203188 | 7.410097 | 1.541404 | 0.020323 | 0.008632 | 0 | 0.003 | 0.018018 | 0.021242 | 0.009022 | 0 | 0.012 | 0.05148 | 1282.538 | 1552.949 | 0 | 0.001991 | 0.020568 | 0 | 0.202064 | 0.244668 | 0 | 0.04286 | 0.442828 | 0 | 0 | 0 | 0 | 0.048793 | 0.504126 | 0 | 0 | 0 | 0 | 0.215865 | 0.153454 | 7.510858 | 0 | 0.012145 | 0.014706 | 0 |
| Santa Clara | 2023 | OBUS | Aggregate | Aggregate | Natural Ga | 6.1456 | 409.5466 | 409.5466 | 0 | 54.69584 | 0 | 0.219315 | 1.549107 | 0 | 0.000923 | 0.00362 | 0 | 0.003 | 0.016148 | 0.001004 | 0.003937 | 0 | 0.012 | 0.046137 | 1017.405 | 1188.285 | 0 | 0.774069 | 4.381267 | 0 | 0.207405 | 0.24224 | 0 | 0.01106 | 0.0626 | 0 | 0 | 0 | 0 | 0.789994 | 4.471404 | 0 | 0 | 0 | 0 | 1.06 | 3.211954 | 6.724204 | 0 | 0 | 0 | 0 |
| Santa Clara | 2023 | SBUS | Aggregate | Aggregate | Gasoline | 166.9867 | 8309.308 | 8309.308 | 0 | 667.9468 | 0 | 0.519317 | 0.925703 | 0.7051 | 0.000862 | 0 | 0.000556 | 0.002 | 0.015721 | 0.000937 | 0 | 0.000609 | 0.008 | 0.044917 | 815.0909 | 2602.033 | 58.66947 | 0.011871 | 2.46208 | 0.074918 | 0.027733 | 0.086224 | 0.064904 | 0.057744 | 10.62943 | 0.427061 | 0.112221 | 0.259299 | 1.591441 | 0.084259 | 15.51043 | 0.467578 | 0.112221 | 0.259299 | 1.591441 | 0.045 | 1.469507 | 82.16746 | 10.56434 | 0.008058 | 0.025724 | 0.00058 |
| Santa Clara | 2023 | SBUS | Aggregate | Aggregate | Diesel | 667.1185 | 15392.68 | 15392.68 | 0 | 9659.876 | 0 | 4.028015 | 22.39863 | 0.467155 | 0.020908 | 0.02125 | 0 | 0.003 | 0.015721 | 0.021853 | 0.022211 | 0 | 0.012 | 0.044917 | 1148.524 | 2237.814 | 0 | 0.002748 | 0.008083 | 0 | 0.18095 | 0.352568 | 0 | 0.059161 | 0.174017 | 0 | 0 | 0 | 0 | 0.06735 | 0.198106 | 0 | 0 | 0 | 0 | 0.144154 | 0.181489 | 4.581854 | 0 | 0.010876 | 0.021191 | 0 |
| Santa Clara | 2023 | SBUS | Aggregate | Aggregate | Electricity | 0.302373 | 3.510494 | 0 | 3.510494 | 4.378365 | 3.69815 | 0 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.00786 | 0 | 0 | 0 | 0.012 | 0.022459 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2023 | SBUS | Aggregate | Aggregate | Natural Ga | 23.50762 | 595.8705 | 595.8705 | 0 | 340.3903 | 0 | 0.587321 | 5.282702 | 0 | 0.003378 | 0.011076 | 0 | 0.003 | 0.015721 | 0.003674 | 0.012046 | 0 | 0.012 | 0.044917 | 1271.127 | 4058.811 | 0 | 3.490611 | 15.40242 | 0 | 0.259128 | 0.827415 | 0 | 0.049874 | 0.22007 | 0 | 0 | 0 | 0 | 0.562424 | 15.7193 | 0 | 0 | 0 | 0 | 1.06 | 11.90284 | 20.11199 | 0 | 0 | 0 | 0 |
| Santa Clara | 2023 | UBUS | Aggregate | Aggregate | Gasoline | 45.94709 | 4798.244 | 4798.244 | 0 | 183.7884 | 0 | 0.026807 | 0 | 0.443444 | 0.001143 | 0 | 0.000128 | 0.002 | 0.03185 | 0.001243 | 0 | 0.00014 | 0.008 | 0.091 | 926.2924 | 0 | 36.84613 | 0.002031 | 0 | 0.041715 | 0.004215 | 0 | 0.070149 | 0.005614 | 0 | 0.147842 | 0.038144 | 0.09212 | 0.456803 | 0.008192 | 0 | 0.161868 | 0.038144 | 0.09212 | 0.456803 | 0.045 | 0.571128 | 0 | 6.073786 | 0.009157 | 0 | 0.000364 |
| Santa Clara | 2023 | UBUS | Aggregate | Aggregate | Diesel | 436.6681 | 48829.71 | 48829.71 | 0 | 1746.672 | 0 | 0.386256 | 0 | 0 | 0.007022 | 0 | 0 | 0.0083 | 0.0385 | 0.00734 | 0 | 0 | 0.0332 | 0.11 | 1100.965 | 0 | 0 | 0.003215 | 0 | 0 | 0.173457 | 0 | 0 | 0.069208 | 0 | 0 | 0 | 0 | 0 | 0.078788 | 0 | 0 | 0 | 0 | 0 | 0.18785 | 0.079368 | 0 | 0 | 0.010432 | 0 | 0 |
| Santa Clara | 2023 | UBUS | Aggregate | Aggregate | Electricity | 5.046757 | 199.0027 | 0 | 199.0027 | 20.18703 | 346.9103 | 0 | 0 | 0 | 0 | 0 | 0 | 0.009 | 0.01925 | 0 | 0 | 0 | 0.036 | 0.055 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2023 | UBUS | Aggregate | Aggregate | Natural Ga | 42.26114 | 4829.673 | 4829.673 | 0 | 169.0446 | 0 | 0.05878 | 0 | 0 | 0.000282 | 0 | 0 | 0.008182 | 0.0385 | 0.000295 | 0 | 0 | 0.032727 | 0.11 | 1299.127 | 0 | 0 | 4.245742 | 0 | 0 | 0.264835 | 0 | 0 | 0.060663 | 0 | 0 | 0 | 0 | 0 | 4.333091 | 0 | 0 | 0 | 0 | 0 | 0.97 | 49.04231 | 0 | 0 | 0 | 0 | 0 |

# Attachment 4: Project Construction Emissions and Health Risk Calculations

3141-3155 El Camino Real, Santa Clara, CA

| Year | Unmitigated DPM | DPM EMFAC2021 | Unmitigated Emissions | Unmitigated Fug PM2.5 | Fug PM2.5 EMFAC2021 | Unmitigated Emissions |
|---|---|---|---|---|---|---|
| 2023 | 0.0242 | 0.0002 | 0.0244 | 0.0890 | 0.0002 | 0.0892 |
| 2024 | 0.0223 | 0.0003 | 0.0226 | 0.0000 | 0.0003 | 0.0003 |

| Year | Mitigated DPM | DPM EMFAC2021 | Mitigated Emissions | Mitigated Fug PM2.5 | Fug PM2.5 EMFAC2021 | Mitigated Emissions |
|---|---|---|---|---|---|---|
| 2023 | 0.0029 | 0.0002 | 0.0031 | 0.0400 | 0.0002 | 0.0402 |
| 2024 | 0.0047 | 0.0003 | 0.0050 | 0.0000 | 0.0003 | 0.0003 |

## 3141-3155 El Camino Real, Santa Clara, CA

### DPM Emissions and Modeling Emission Rates - Unmitigated

| Construction Year | Activity | DPM (ton/year) | Area Source | DPM Emissions (lb/yr) | DPM Emissions (lb/hr) | DPM Emissions (g/s) | Modeled Area ($m^2$) | DPM Emission Rate ($g/s/m^2$) |
|---|---|---|---|---|---|---|---|---|
| ***2022*** | Construction | 0.0244 | CON_DPM | 48.8 | 0.01486 | 1.87E-03 | 9952 | 1.88E-07 |
| ***2023*** | Construction | 0.0226 | CON_DPM | 45.2 | 0.01375 | 1.73E-03 | 9952 | 1.74E-07 |
| ***Total*** | | ***0.0470*** | | ***94.0*** | ***0.0286*** | ***0.0036*** | | |

*Construction Hours*

| | | |
|---|---|---|
| hr/day = | 9 | (7am - 4pm) |
| days/yr = | 365 | |
| hours/year = | 3285 | |

### DPM Construction Emissions and Modeling Emission Rates - With Mitigation

| Construction Year | Activity | DPM (ton/year) | Area Source | DPM Emissions (lb/yr) | DPM Emissions (lb/hr) | DPM Emissions (g/s) | Modeled Area ($m^2$) | DPM Emission Rate ($g/s/m^2$) |
|---|---|---|---|---|---|---|---|---|
| ***2022*** | Construction | 0.0031 | CON_DPM | 6.3 | 0.00191 | 2.41E-04 | 9952 | 2.42E-08 |
| ***2023*** | Construction | 0.0050 | CON_DPM | 10.0 | 0.00304 | 3.83E-04 | 9952 | 3.85E-08 |
| ***Total*** | | ***0.0081*** | | ***16.3*** | ***0.0050*** | ***0.0006*** | | |

*Construction Hours*

| | | |
|---|---|---|
| hr/day = | 9 | (7am - 4pm) |
| days/yr = | 365 | |
| hours/year = | 3285 | |

**3141-3155 El Camino Real, Santa Clara, CA**

**PM2.5 Fugitive Dust Emissions for Modeling - Unmitigated**

| Construction Year | Activity | Area Source | PM2.5 Emissions (ton/year) | (lb/yr) | (lb/hr) | (g/s) | Modeled Area ($m^2$) | PM2.5 Emission Rate $g/s/m^2$ |
|---|---|---|---|---|---|---|---|---|
| ***2022*** | Construction | CON_FUG | 0.0892 | 178.4 | 0.05430 | 6.84E-03 | 9,952 | 6.88E-07 |
| ***2023*** | Construction | CON_FUG | 0.0003 | 0.6 | 0.00017 | 2.14E-05 | 9,952 | 2.15E-09 |
| ***Total*** | | | ***0.0895*** | ***178.9*** | ***0.0545*** | ***0.0069*** | | |

*Construction Hours*

| | | |
|---|---|---|
| hr/day = | 9 | (7am - 4pm) |
| days/yr = | 365 | |
| hours/year = | 3285 | |

**PM2.5 Fugitive Dust Construction Emissions for Modeling - With Mitigation**

| Construction Year | Activity | Area Source | PM2.5 Emissions (ton/year) | (lb/yr) | (lb/hr) | (g/s) | Modeled Area ($m^2$) | PM2.5 Emission Rate $g/s/m^2$ |
|---|---|---|---|---|---|---|---|---|
| ***2022*** | Construction | CON_FUG | 0.0402 | 80.4 | 0.02447 | 3.08E-03 | 9,952 | 3.10E-07 |
| ***2023*** | Construction | CON_FUG | 0.0003 | 0.6 | 0.00017 | 2.14E-05 | 9,952 | 2.15E-09 |
| ***Total*** | | | ***0.0405*** | ***80.9*** | ***0.0246*** | ***0.0031*** | | |

*Construction Hours*

| | | |
|---|---|---|
| hr/day = | 9 | (7am - 4pm) |
| days/yr = | 365 | |
| hours/year = | 3285 | |

## 3141-3155 El Camino Real, Santa Clara, CA - Construction Health Impact Summary

### Maximum Impacts at MEI Residential Location - Without Mitigation

| Emissions Year | Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$) | Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$) | Cancer Risk (per million): Infant/Child | Cancer Risk (per million): Adult | Hazard Index (-) | Maximum Annual PM2.5 Concentration* ($\mu g/m^3$) |
|---|---|---|---|---|---|---|
| 2022 | 0.0497 | 0.3281 | 8.84 | 0.14 | 0.01 | 0.38 |
| 2023 | 0.0460 | 0.0010 | 7.56 | 0.13 | 0.01 | 0.05 |
| **Total** | - | - | **16.40** | **0.27** | - | - |
| **Maximum** | 0.0497 | 0.3281 | **-** | **-** | **0.01** | **0.38** |

### Maximum Impacts at MEI Residential Location - With Mitigation

| Emissions Year | Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$) | Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$) | Cancer Risk (per million): Infant/Child | Cancer Risk (per million): Adult | Hazard Index (-) | Maximum Annual PM2.5 Concentration* ($\mu g/m^3$) |
|---|---|---|---|---|---|---|
| 2022 | 0.0064 | 0.1479 | 1.14 | 0.02 | 0.001 | 0.15 |
| 2023 | 0.0102 | 0.0010 | 1.67 | 0.03 | 0.002 | 0.01 |
| **Total** | - | - | **2.81** | **0.05** | - | - |
| **Maximum** | 0.0102 | 0.1479 | **-** | **-** | **0.002** | **0.15** |

- Tier 2 DPF 3 Engines and BMP Mitigation

### Maximum Impacts at Vidyarambh Preschool

| Construction Year | Unmitigated Emissions: Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$) | Unmitigated Emissions: Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$) | Child Cancer Risk (per million) | Hazard Index (-) | Maximum Annual PM2.5 Concentration ($\mu g/m^3$) |
|---|---|---|---|---|---|
| 2022 | 0.0049 | 0.0167 | 0.31 | 0.001 | 0.02 |
| 2023 | 0.0045 | 0.0001 | 0.28 | 0.001 | 0.005 |
| **Total** | - | - | **0.59** | - | - |
| **Maximum** | 0.0049 | 0.0167 | **-** | **0.001** | **0.02** |

**3141-3155 El Camino Real, Santa Clara, CA - Construction Impacts - Without Mitigation**
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction**
**Impacts at Off-Site MEI Location -1.5 meter receptor height**

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

**Values**

| | Infant/Child | | | Adult |
|---|---|---|---|---|
| **Age -->** | **3rd Trimester** | **0 - 2** | **2 - 16** | **16 - 30** |
| **Parameter** | | | | |
| ASF = | 10 | 10 | 3 | 1 |
| CPF = | 1.10E+00 | 1.10E+00 | 1.10E+00 | 1.10E+00 |
| 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**

| | | | Infant/Child - Exposure Information | | | Infant/Child | Adult - Exposure Information | | | Adult | Maximum | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Modeled | | | | | | |
| Exposure | Exposure Duration | | DPM Conc (ug/m3) | | Age Sensitivity | Cancer Risk | DPM Conc (ug/m3) | | Age Sensitivity | Cancer Risk | Hazard | Fugitive | Total |
| Year | (years) | Age | Year | Annual | Factor | (per million) | Year | Annual | Factor | (per million) | Index | PM2.5 | PM2.5 |
| 0 | 0.25 | -0.25 - 0* | 2022 | 0.0497 | 10 | 0.68 | 2022 | 0.0497 | - | - | | | |
| 1 | 1 | 0 - 1 | 2022 | 0.0497 | 10 | 8.17 | 2022 | 0.0497 | 1 | 0.14 | 0.01 | 0.33 | 0.38 |
| 2 | 1 | 1 - 2 | 2023 | 0.0460 | 10 | 7.56 | 2023 | 0.0460 | 1 | 0.13 | 0.01 | 0.00 | 0.05 |
| 3 | 1 | 2 - 3 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 4 | 1 | 3 - 4 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 5 | 1 | 4 - 5 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 6 | 1 | 5 - 6 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 7 | 1 | 6 - 7 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 8 | 1 | 7 - 8 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 9 | 1 | 8 - 9 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 10 | 1 | 9 - 10 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 11 | 1 | 10 - 11 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 12 | 1 | 11 - 12 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 13 | 1 | 12 - 13 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 14 | 1 | 13 - 14 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 15 | 1 | 14 - 15 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 16 | 1 | 15 - 16 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 17 | 1 | 16-17 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 18 | 1 | 17-18 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 19 | 1 | 18-19 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 20 | 1 | 19-20 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 21 | 1 | 20-21 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 22 | 1 | 21-22 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 23 | 1 | 22-23 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 24 | 1 | 23-24 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 25 | 1 | 24-25 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 26 | 1 | 25-26 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 27 | 1 | 26-27 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 28 | 1 | 27-28 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 29 | 1 | 28-29 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 30 | 1 | 29-30 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| **Total Increased Cancer Risk** | | | | | | **16.40** | | | | **0.27** | | | |

* Third trimester of pregnancy

**3141-3155 El Camino Real, Santa Clara, CA - Construction Impacts - Without Mitigation**
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction**
**Impacts at Off-Site MEI Location - 4.5 meter receptor height**

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

**Values**

| | Infant/Child | | | Adult |
|---|---|---|---|---|
| **Age -->** | **3rd Trimester** | **0 - 2** | **2 - 16** | **16 - 30** |
| **Parameter** | | | | |
| ASF = | 10 | 10 | 3 | 1 |
| CPF = | 1.10E+00 | 1.10E+00 | 1.10E+00 | 1.10E+00 |
| 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**

| | | | Infant/Child - Exposure Information | | | | Adult - Exposure Information | | | | Maximum | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | DPM Conc (ug/m3) | | Age | Infant/Child | Modeled DPM Conc (ug/m3) | | Age | Adult | | | |
| Exposure Year | Exposure Duration (years) | Age | Year | Annual | Sensitivity Factor | Cancer Risk (per million) | Year | Annual | Sensitivity Factor | Cancer Risk (per million) | Hazard Index | Fugitive PM2.5 | Total PM2.5 |
| 0 | 0.25 | -0.25 - 0* | 2022 | 0.0112 | 10 | 0.15 | 2022 | 0.0112 | - | - | | | |
| 1 | 1 | 0 - 1 | 2022 | 0.0112 | 10 | 1.84 | 2022 | 0.0112 | 1 | 0.03 | 0.002 | 0.04 | 0.05 |
| 2 | 1 | 1 - 2 | 2023 | 0.0104 | 10 | 1.70 | 2023 | 0.0104 | 1 | 0.03 | 0.002 | 0.0001 | 0.01 |
| 3 | 1 | 2 - 3 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 4 | 1 | 3 - 4 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 5 | 1 | 4 - 5 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 6 | 1 | 5 - 6 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 7 | 1 | 6 - 7 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 8 | 1 | 7 - 8 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 9 | 1 | 8 - 9 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 10 | 1 | 9 - 10 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 11 | 1 | 10 - 11 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 12 | 1 | 11 - 12 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 13 | 1 | 12 - 13 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 14 | 1 | 13 - 14 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 15 | 1 | 14 - 15 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 16 | 1 | 15 - 16 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 17 | 1 | 16-17 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 18 | 1 | 17-18 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 19 | 1 | 18-19 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 20 | 1 | 19-20 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 21 | 1 | 20-21 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 22 | 1 | 21-22 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 23 | 1 | 22-23 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 24 | 1 | 23-24 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 25 | 1 | 24-25 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 26 | 1 | 25-26 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 27 | 1 | 26-27 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 28 | 1 | 27-28 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 29 | 1 | 28-29 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 30 | 1 | 29-30 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| **Total Increased Cancer Risk** | | | | | | **3.69** | | | | **0.06** | | | |

* Third trimester of pregnancy

**3141-3155 El Camino Real, Santa Clara, CA - Construction Impacts - With Mitigation**
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction**
**Impacts at Off-Site MEI Location -1.5 meter receptor height**

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

**Values**

| | Infant/Child | | | Adult |
|---|---|---|---|---|
| **Age -->** | **3rd Trimester** | **0 - 2** | **2 - 16** | **16 - 30** |
| **Parameter** | | | | |
| ASF = | 10 | 10 | 3 | 1 |
| CPF = | 1.10E+00 | 1.10E+00 | 1.10E+00 | 1.10E+00 |
| 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**

| | | | Infant/Child - Exposure Information | | | | Adult - Exposure Information | | | | Maximum | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | DPM Conc (ug/m3) | | Age | Infant/Child | Modeled DPM Conc (ug/m3) | | Age | Adult | | | |
| Exposure Year | Exposure Duration (years) | Age | Year | Annual | Sensitivity Factor | Cancer Risk (per million) | Year | Annual | Sensitivity Factor | Cancer Risk (per million) | Hazard Index | Fugitive PM2.5 | Total PM2.5 |
| 0 | 0.25 | -0.25 - 0* | 2022 | 0.0064 | 10 | 0.09 | 2022 | 0.0064 | - | - | | | |
| 1 | 1 | 0 - 1 | 2022 | 0.0064 | 10 | 1.05 | 2022 | 0.0064 | 1 | 0.02 | 0.001 | 0.15 | 0.15 |
| 2 | 1 | 1 - 2 | 2023 | 0.0102 | 10 | 1.67 | 2023 | 0.0102 | 1 | 0.03 | 0.002 | 0.001 | 0.01 |
| 3 | 1 | 2 - 3 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 4 | 1 | 3 - 4 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 5 | 1 | 4 - 5 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 6 | 1 | 5 - 6 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 7 | 1 | 6 - 7 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 8 | 1 | 7 - 8 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 9 | 1 | 8 - 9 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 10 | 1 | 9 - 10 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 11 | 1 | 10 - 11 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 12 | 1 | 11 - 12 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 13 | 1 | 12 - 13 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 14 | 1 | 13 - 14 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 15 | 1 | 14 - 15 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 16 | 1 | 15 - 16 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 17 | 1 | 16-17 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 18 | 1 | 17-18 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 19 | 1 | 18-19 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 20 | 1 | 19-20 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 21 | 1 | 20-21 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 22 | 1 | 21-22 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 23 | 1 | 22-23 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 24 | 1 | 23-24 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 25 | 1 | 24-25 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 26 | 1 | 25-26 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 27 | 1 | 26-27 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 28 | 1 | 27-28 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 29 | 1 | 28-29 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 30 | 1 | 29-30 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| **Total Increased Cancer Risk** | | | | | | **2.81** | | | | **0.05** | | | |

* Third trimester of pregnancy

**3141-3155 El Camino Real, Santa Clara, CA - Construction Impacts - Without Mitigation**
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction**
**Impacts at Vidyarambh Preschool (+2 years old) - 1 meter - Child Exposure**

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

Inhalation Dose = $C_{air}$ x SAF x 8-Hr BR x A x (EF/365) x $10^{-6}$

Where: $C_{air}$ = concentration in air $(\mu g/m^3)$
SAF = Student Adjustment Factor (unitless)
= (24 hrs/9 hrs) x (7 days/5 days) = 3.73
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
$10^{-6}$ = Conversion factor

**Values**

| | Infant | School Child | Adult |
|---|---|---|---|
| **Age -->** | **0 - <2** | **2 - <16** | **16 - 30** |
| **Parameter** | | | |
| ASF = | 10 | 3 | 1 |
| CPF = | 1.10E+00 | 1.10E+00 | 1.10E+00 |
| 8-Hr BR* = | 1200 | 520 | 240 |
| A = | 1 | 1 | 1 |
| EF = | 250 | 250 | 250 |
| AT = | 70 | 70 | 70 |
| SAF = | 1.00 | 3.73 | 1.00 |

* 95th percentile 8-hr breathing rates for moderate intensity activities

**Construction Cancer Risk by Year - Maximum Impact Receptor Location**

| Exposure Year | Exposure Duration (years) | Age | Child - Exposure Information: DPM Conc (ug/m3) Year | DPM Conc (ug/m3) Annual | Age* Sensitivity Factor | Child Cancer Risk (per million) |
|---|---|---|---|---|---|---|
| 1 | 1 | 2 - 3 | 2022 | 0.0049 | 3 | 0.3 |
| 2 | 1 | 3 - 4 | 2023 | 0.0045 | 3 | 0.3 |
| 3 | 1 | | | 0.0000 | 3 | 0.0 |
| 4 | 1 | | | 0.0000 | 3 | 0.0 |
| 5 | 1 | | | 0.0000 | 3 | 0.0 |
| 6 | 1 | | | 0.0000 | 3 | 0.0 |
| 7 | 1 | | | 0.0000 | 3 | 0.0 |
| 8 | 1 | | | 0.0000 | 3 | 0.0 |
| 9 | 1 | | | 0.0000 | 3 | 0.0 |
| **Total Increased Cancer Risk** | | | | | | **0.59** |

* Children assumed to be 2 years of age or older with 2 years of Construction Exposure

| Maximum | | |
|---|---|---|
| **Hazard Index** | **Fugitive PM2.5** | **Total PM2.5** |
| 0.001 | 0.02 | 0.02 |
| 0.001 | 0.0001 | 0.005 |

# Attachment 5: Community Risk Modeling Information and Calculations

## CT-EMFAC2017 Emissions Factors for El Camino Real

| | |
|---|---|
| File Name: | 3141 ECR - Santa Clara (SF) - 2022 - Annual.EF |
| CT-EMFAC2017 Version: | 1.0.2.27401 |
| Run Date: | 10/7/2021 9:45 |
| Area: | Santa Clara (SF) |
| Analysis Year: | 2022 |
| Season: | Annual |

| Vehicle Category | VMT Fraction Across Category | Diesel VMT Fraction Within Category | Gas VMT Fraction Within Category |
|---|---|---|---|
| Truck 1 | 0.015 | 0.478 | 0.522 |
| Truck 2 | 0.02 | 0.94 | 0.046 |
| Non-Truck | 0.965 | 0.014 | 0.961 |

| | | | |
|---|---|---|---|
| Road Type: | Major/Collector | | |
| Silt Loading Factor: | CARB | 0.032 g/m2 | |
| Precipitation Correction: | CARB | P = 64 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 |
|---|---|---|---|---|---|---|---|---|
| PM2.5 | 0.010417 | 0.006915 | 0.004735 | 0.003408 | 0.002622 | 0.002145 | 0.001861 | 0.001715 |
| TOG | 0.220898 | 0.145348 | 0.097291 | 0.068555 | 0.051819 | 0.041294 | 0.034513 | 0.030252 |
| Diesel PM | 0.001756 | 0.001459 | 0.001108 | 0.000865 | 0.000743 | 0.000683 | 0.000662 | 0.000677 |

Fleet Average Running Loss Emission Factors (grams/veh-hour)

| Pollutant Name | Emission Factor |
|---|---|
| TOG | 1.418515 |

Fleet Average Tire Wear Factors (grams/veh-mile)

| Pollutant Name | Emission Factor |
|---|---|
| PM2.5 | 0.002108 |

Fleet Average Brake Wear Factors (grams/veh-mile)

| Pollutant Name | Emission Factor |
|---|---|
| PM2.5 | 0.016811 |

Fleet Average Road Dust Factors (grams/veh-mile)

| Pollutant Name | Emission Factor |
|---|---|
| PM2.5 | 0.014871 |

==========END==========

# El Camino Real Traffic Emissions and Health Risk Calculations

**Analysis Year =** ***2022***

| **Vehicle Type** | **2012 Caltrans Vehicles (veh/day)** | **2022 Vehicles (veh/day)** |
|---|---|---|
| Truck 1 (MDT) | 907 | 998 |
| Truck 2 (HDT) | 244 | 268 |
| Non-Truck | 31,649 | 34,814 |
| **Total** | **32,800** | **36,080** |

| | |
|---|---|
| Increase From 2012 | 1.10 |
| **Vehicles/Direction** | **18,040** |
| Avg Vehicles/Hour/Direction | 752 |

**Traffic Data Year =** ***2012***

| ***City Provided ADT*** | | Total | Trucks by Axle | | | |
|---|---|---|---|---|---|---|
| | AADT Total | Truck | 2 | 3 | 4 | 5 |
| El Camino Real btw Calabazas and Bowers | 32,800 | 1,151 | 907 | 127 | 36 | 81 |
| | | | 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%*

**3141-3155 El Camino Real, Santa Clara, CA - Offsite Residential Roadway Modeling**
**Cumulative Operation - El Camino Real**
**DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions**
**Year = 2022**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| DPM_EB_ECR | El Camino Real Eastbound | EB | 3 | 717.3 | 0.45 | 17.0 | 55.7 | 3.4 | Varied | 18,040 |
| DPM_WB_ECR | El Camino Real Westbound | WB | 3 | 720.3 | 0.45 | 17.0 | 55.7 | 3.4 | Varied | 18,040 |
| | | | | | | | | | Total | 36,080 |

**Emission Factors - DPM**

| Speed Category | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Travel Speed (mph) | 35 | 25 | | |
| Emissions per Vehicle (g/VMT) | 0.00066 | 0.000743 | | |

Emisson Factors from CT-EMFAC2017

**2022 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 | 3.91% | 705 | 5.78E-05 | 9 | 6.44% | 1162 | 1.07E-04 | 17 | 5.52% | 996 | 9.16E-05 |
| 2 | 2.59% | 467 | 3.83E-05 | 10 | 7.25% | 1308 | 1.07E-04 | 18 | 3.34% | 603 | 5.54E-05 |
| 3 | 2.82% | 509 | 4.17E-05 | 11 | 6.33% | 1142 | 9.36E-05 | 19 | 2.42% | 437 | 3.58E-05 |
| 4 | 3.39% | 612 | 5.01E-05 | 12 | 6.90% | 1245 | 1.02E-04 | 20 | 0.92% | 166 | 1.36E-05 |
| 5 | 2.19% | 395 | 3.24E-05 | 13 | 6.27% | 1131 | 9.27E-05 | 21 | 2.99% | 539 | 4.42E-05 |
| 6 | 3.39% | 612 | 5.01E-05 | 14 | 6.15% | 1109 | 9.09E-05 | 22 | 4.14% | 747 | 6.12E-05 |
| 7 | 6.10% | 1100 | 9.02E-05 | 15 | 5.12% | 924 | 7.57E-05 | 23 | 2.47% | 446 | 3.65E-05 |
| 8 | 4.66% | 841 | 7.73E-05 | 16 | 3.85% | 695 | 5.69E-05 | 24 | 0.86% | 155 | 1.27E-05 |
| | | | | | | | | Total | | 18,044 | |

**2022 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 | 3.91% | 705 | 5.81E-05 | 9 | 6.44% | 1162 | 9.56E-05 | 17 | 5.52% | 996 | 8.20E-05 |
| 2 | 2.59% | 467 | 3.85E-05 | 10 | 7.25% | 1308 | 1.08E-04 | 18 | 3.34% | 603 | 4.96E-05 |
| 3 | 2.82% | 509 | 4.19E-05 | 11 | 6.33% | 1142 | 9.40E-05 | 19 | 2.42% | 437 | 3.59E-05 |
| 4 | 3.39% | 612 | 5.03E-05 | 12 | 6.90% | 1245 | 1.02E-04 | 20 | 0.92% | 166 | 1.37E-05 |
| 5 | 2.19% | 395 | 3.25E-05 | 13 | 6.27% | 1131 | 9.31E-05 | 21 | 2.99% | 539 | 4.44E-05 |
| 6 | 3.39% | 612 | 5.03E-05 | 14 | 6.15% | 1109 | 9.13E-05 | 22 | 4.14% | 747 | 6.15E-05 |
| 7 | 6.10% | 1100 | 9.06E-05 | 15 | 5.12% | 924 | 7.60E-05 | 23 | 2.47% | 446 | 3.67E-05 |
| 8 | 4.66% | 841 | 6.92E-05 | 16 | 3.85% | 695 | 5.72E-05 | 24 | 0.86% | 155 | 1.28E-05 |
| | | | | | | | | Total | | 18,044 | |

**3141-3155 El Camino Real, Santa Clara, CA - Offsite Residential Roadway Modeling**
**Cumulative Operation - El Camino Real**
**PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions**
**Year = 2022**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| PM25_EB_ECR | El Camino Real Eastbound | EB | 3 | 717.3 | 0.45 | 17.0 | 56 | 1.3 | Varied | 18,040 |
| PM25_WB_ECR | El Camino Real Westbound | WB | 3 | 720.3 | 0.45 | 17.0 | 56 | 1.3 | Varied | 18,040 |
| | | | | | | | | | Total | 36,080 |

**Emission Factors - PM2.5**

| Speed Category | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Travel Speed (mph) | 35 | 25 | | |
| Emissions per Vehicle (g/VMT) | 0.001861 | 0.00262 | | |

Emisson Factors from CT-EMFAC2017

**2022 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% | 207 | 4.78E-05 | 9 | 7.11% | 1283 | 4.16E-04 | 17 | 7.39% | 1333 | 4.33E-04 |
| 2 | 0.42% | 76 | 1.75E-05 | 10 | 4.39% | 792 | 1.82E-04 | 18 | 8.17% | 1474 | 4.78E-04 |
| 3 | 0.41% | 74 | 1.70E-05 | 11 | 4.67% | 842 | 1.94E-04 | 19 | 5.70% | 1028 | 2.37E-04 |
| 4 | 0.27% | 49 | 1.12E-05 | 12 | 5.89% | 1063 | 2.45E-04 | 20 | 4.27% | 770 | 1.77E-04 |
| 5 | 0.50% | 90 | 2.08E-05 | 13 | 6.15% | 1109 | 2.56E-04 | 21 | 3.26% | 588 | 1.36E-04 |
| 6 | 0.91% | 164 | 3.78E-05 | 14 | 6.03% | 1088 | 2.51E-04 | 22 | 3.30% | 595 | 1.37E-04 |
| 7 | 3.79% | 684 | 1.58E-04 | 15 | 7.01% | 1265 | 2.91E-04 | 23 | 2.46% | 444 | 1.02E-04 |
| 8 | 7.76% | 1400 | 4.54E-04 | 16 | 7.13% | 1286 | 2.96E-04 | 24 | 1.86% | 336 | 7.73E-05 |
| | | | | | | | | Total | | 18,040 | |

**2022 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% | 207 | 4.80E-05 | 9 | 7.11% | 1283 | 2.97E-04 | 17 | 7.39% | 1333 | 3.08E-04 |
| 2 | 0.42% | 76 | 1.75E-05 | 10 | 4.39% | 792 | 1.83E-04 | 18 | 8.17% | 1474 | 3.41E-04 |
| 3 | 0.41% | 74 | 1.71E-05 | 11 | 4.67% | 842 | 1.95E-04 | 19 | 5.70% | 1028 | 2.38E-04 |
| 4 | 0.27% | 49 | 1.13E-05 | 12 | 5.89% | 1063 | 2.46E-04 | 20 | 4.27% | 770 | 1.78E-04 |
| 5 | 0.50% | 90 | 2.09E-05 | 13 | 6.15% | 1109 | 2.57E-04 | 21 | 3.26% | 588 | 1.36E-04 |
| 6 | 0.91% | 164 | 3.80E-05 | 14 | 6.03% | 1088 | 2.52E-04 | 22 | 3.30% | 595 | 1.38E-04 |
| 7 | 3.79% | 684 | 1.58E-04 | 15 | 7.01% | 1265 | 2.93E-04 | 23 | 2.46% | 444 | 1.03E-04 |
| 8 | 7.76% | 1400 | 3.24E-04 | 16 | 7.13% | 1286 | 2.98E-04 | 24 | 1.86% | 336 | 7.76E-05 |
| | | | | | | | | Total | | 18,040 | |

**3141-3155 El Camino Real, Santa Clara, CA - Offsite Residential Roadway Modeling**
**Cumulative Operation - El Camino Real**
**TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions**
**Year = 2022**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| TEXH_EB_ECR | El Camino Real Eastbound | EB | 3 | 717.3 | 0.45 | 17.0 | 56 | 1.3 | Varied | 18,040 |
| TEXH_WB_ECR | El Camino Real Westbound | WB | 3 | 720.3 | 0.45 | 17.0 | 56 | 1.3 | Varied | 18,040 |
| | | | | | | | | | Total | 36,080 |

**Emission Factors - TOG Exhaust**

| Speed Category | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Travel Speed (mph) | 35 | 25 | | |
| Emissions per Vehicle (g/VMT) | 0.03451 | 0.05182 | | |

Emisson Factors from CT-EMFAC2017

**2022 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% | 207 | 8.86E-04 | 9 | 7.11% | 1283 | 8.23E-03 | 17 | 7.39% | 1333 | 8.55E-03 |
| 2 | 0.42% | 76 | 3.24E-04 | 10 | 4.39% | 792 | 3.38E-03 | 18 | 8.17% | 1474 | 9.46E-03 |
| 3 | 0.41% | 74 | 3.16E-04 | 11 | 4.67% | 842 | 3.60E-03 | 19 | 5.70% | 1028 | 4.39E-03 |
| 4 | 0.27% | 49 | 2.08E-04 | 12 | 5.89% | 1063 | 4.54E-03 | 20 | 4.27% | 770 | 3.29E-03 |
| 5 | 0.50% | 90 | 3.85E-04 | 13 | 6.15% | 1109 | 4.74E-03 | 21 | 3.26% | 588 | 2.51E-03 |
| 6 | 0.91% | 164 | 7.01E-04 | 14 | 6.03% | 1088 | 4.65E-03 | 22 | 3.30% | 595 | 2.54E-03 |
| 7 | 3.79% | 684 | 2.92E-03 | 15 | 7.01% | 1265 | 5.40E-03 | 23 | 2.46% | 444 | 1.90E-03 |
| 8 | 7.76% | 1400 | 8.98E-03 | 16 | 7.13% | 1286 | 5.50E-03 | 24 | 1.86% | 336 | 1.43E-03 |
| | | | | | | | | Total | | 18,040 | |

**2022 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% | 207 | 8.90E-04 | 9 | 7.11% | 1283 | 5.50E-03 | 17 | 7.39% | 1333 | 5.72E-03 |
| 2 | 0.42% | 76 | 3.25E-04 | 10 | 4.39% | 792 | 3.40E-03 | 18 | 8.17% | 1474 | 6.32E-03 |
| 3 | 0.41% | 74 | 3.17E-04 | 11 | 4.67% | 842 | 3.61E-03 | 19 | 5.70% | 1028 | 4.41E-03 |
| 4 | 0.27% | 49 | 2.09E-04 | 12 | 5.89% | 1063 | 4.56E-03 | 20 | 4.27% | 770 | 3.31E-03 |
| 5 | 0.50% | 90 | 3.87E-04 | 13 | 6.15% | 1109 | 4.76E-03 | 21 | 3.26% | 588 | 2.52E-03 |
| 6 | 0.91% | 164 | 7.04E-04 | 14 | 6.03% | 1088 | 4.67E-03 | 22 | 3.30% | 595 | 2.55E-03 |
| 7 | 3.79% | 684 | 2.93E-03 | 15 | 7.01% | 1265 | 5.43E-03 | 23 | 2.46% | 444 | 1.90E-03 |
| 8 | 7.76% | 1400 | 6.01E-03 | 16 | 7.13% | 1286 | 5.52E-03 | 24 | 1.86% | 336 | 1.44E-03 |
| | | | | | | | | Total | | 18,040 | |

**3141-3155 El Camino Real, Santa Clara, CA - Offsite Residential Roadway Modeling**
**Cumulative Operation - El Camino Real**
**TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions**
**Year = 2022**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| TEVAP_EB_ECR | El Camino Real Eastbound | EB | 3 | 717.3 | 0.45 | 17.0 | 56 | 1.3 | Varied | 18,040 |
| TEVAP_WB_ECR | El Camino Real Westbound | WB | 3 | 720.3 | 0.45 | 17.0 | 56 | 1.3 | Varied | 18,040 |
| | | | | | | | | | Total | 36,080 |

**Emission Factors - PM2.5 - Evaporative TOG**

| Speed Category | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Travel Speed (mph) | 35 | 25 | | |
| Emissions per Vehicle per Hour (g/hour) | 1.41852 | 1.41852 | | |
| Emissions per Vehicle per Mile (g/VMT) | 0.04053 | 0.05674 | | |

Emisson Factors from CT-EMFAC2017

**2022 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% | 207 | 1.04E-03 | 9 | 7.11% | 1283 | 9.01E-03 | 17 | 7.39% | 1333 | 9.37E-03 |
| 2 | 0.42% | 76 | 3.80E-04 | 10 | 4.39% | 792 | 3.97E-03 | 18 | 8.17% | 1474 | 1.04E-02 |
| 3 | 0.41% | 74 | 3.71E-04 | 11 | 4.67% | 842 | 4.23E-03 | 19 | 5.70% | 1028 | 5.16E-03 |
| 4 | 0.27% | 49 | 2.44E-04 | 12 | 5.89% | 1063 | 5.33E-03 | 20 | 4.27% | 770 | 3.87E-03 |
| 5 | 0.50% | 90 | 4.53E-04 | 13 | 6.15% | 1109 | 5.57E-03 | 21 | 3.26% | 588 | 2.95E-03 |
| 6 | 0.91% | 164 | 8.24E-04 | 14 | 6.03% | 1088 | 5.46E-03 | 22 | 3.30% | 595 | 2.99E-03 |
| 7 | 3.79% | 684 | 3.43E-03 | 15 | 7.01% | 1265 | 6.35E-03 | 23 | 2.46% | 444 | 2.23E-03 |
| 8 | 7.76% | 1400 | 9.83E-03 | 16 | 7.13% | 1286 | 6.45E-03 | 24 | 1.86% | 336 | 1.68E-03 |
| | | | | | | | | Total | | 18,040 | |

**2022 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% | 207 | 1.05E-03 | 9 | 7.11% | 1283 | 6.46E-03 | 17 | 7.39% | 1333 | 6.72E-03 |
| 2 | 0.42% | 76 | 3.82E-04 | 10 | 4.39% | 792 | 3.99E-03 | 18 | 8.17% | 1474 | 7.43E-03 |
| 3 | 0.41% | 74 | 3.73E-04 | 11 | 4.67% | 842 | 4.25E-03 | 19 | 5.70% | 1028 | 5.18E-03 |
| 4 | 0.27% | 49 | 2.45E-04 | 12 | 5.89% | 1063 | 5.35E-03 | 20 | 4.27% | 770 | 3.88E-03 |
| 5 | 0.50% | 90 | 4.55E-04 | 13 | 6.15% | 1109 | 5.59E-03 | 21 | 3.26% | 588 | 2.96E-03 |
| 6 | 0.91% | 164 | 8.27E-04 | 14 | 6.03% | 1088 | 5.48E-03 | 22 | 3.30% | 595 | 3.00E-03 |
| 7 | 3.79% | 684 | 3.45E-03 | 15 | 7.01% | 1265 | 6.37E-03 | 23 | 2.46% | 444 | 2.24E-03 |
| 8 | 7.76% | 1400 | 7.05E-03 | 16 | 7.13% | 1286 | 6.48E-03 | 24 | 1.86% | 336 | 1.69E-03 |
| | | | | | | | | Total | | 18,040 | |

**3141-3155 El Camino Real, Santa Clara, CA - Offsite Residential Roadway Modeling**
**Cumulative Operation - El Camino Real**
**Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions**
**Year = 2022**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| FUG_EB_ECR | El Camino Real Eastbound | EB | 3 | 717.3 | 0.45 | 17.0 | 56 | 1.3 | Varied | 18,040 |
| FUG_WB_ECR | El Camino Real Westbound | WB | 3 | 720.3 | 0.45 | 17.0 | 56 | 1.3 | Varied | 18,040 |
| | | | | | | | | | Total | 36,080 |

**Emission Factors - Fugitive PM2.5**

| Speed Category | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Travel Speed (mph) | 35 | 25 | | |
| Tire Wear - Emissions per Vehicle (g/VMT) | 0.00211 | 0.00211 | | |
| Brake Wear - Emissions per Vehicle (g/VMT) | 0.01681 | 0.01681 | | |
| Road Dust - Emissions per Vehicle (g/VMT) | 0.01487 | 0.01487 | | |
| Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT) | 0.03379 | 0.03379 | | |

Emisson Factors from CT-EMFAC2017

**2022 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% | 207 | 8.68E-04 | 9 | 7.11% | 1283 | 5.37E-03 | 17 | 7.39% | 1333 | 5.58E-03 |
| 2 | 0.42% | 76 | 3.17E-04 | 10 | 4.39% | 792 | 3.31E-03 | 18 | 8.17% | 1474 | 6.17E-03 |
| 3 | 0.41% | 74 | 3.09E-04 | 11 | 4.67% | 842 | 3.52E-03 | 19 | 5.70% | 1028 | 4.30E-03 |
| 4 | 0.27% | 49 | 2.04E-04 | 12 | 5.89% | 1063 | 4.45E-03 | 20 | 4.27% | 770 | 3.22E-03 |
| 5 | 0.50% | 90 | 3.77E-04 | 13 | 6.15% | 1109 | 4.64E-03 | 21 | 3.26% | 588 | 2.46E-03 |
| 6 | 0.91% | 164 | 6.87E-04 | 14 | 6.03% | 1088 | 4.55E-03 | 22 | 3.30% | 595 | 2.49E-03 |
| 7 | 3.79% | 684 | 2.86E-03 | 15 | 7.01% | 1265 | 5.29E-03 | 23 | 2.46% | 444 | 1.86E-03 |
| 8 | 7.76% | 1400 | 5.86E-03 | 16 | 7.13% | 1286 | 5.38E-03 | 24 | 1.86% | 336 | 1.40E-03 |
| | | | | | | | | Total | | 18,040 | |

**2022 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% | 207 | 8.72E-04 | 9 | 7.11% | 1283 | 5.39E-03 | 17 | 7.39% | 1333 | 5.60E-03 |
| 2 | 0.42% | 76 | 3.18E-04 | 10 | 4.39% | 792 | 3.33E-03 | 18 | 8.17% | 1474 | 6.19E-03 |
| 3 | 0.41% | 74 | 3.11E-04 | 11 | 4.67% | 842 | 3.54E-03 | 19 | 5.70% | 1028 | 4.32E-03 |
| 4 | 0.27% | 49 | 2.05E-04 | 12 | 5.89% | 1063 | 4.46E-03 | 20 | 4.27% | 770 | 3.24E-03 |
| 5 | 0.50% | 90 | 3.79E-04 | 13 | 6.15% | 1109 | 4.66E-03 | 21 | 3.26% | 588 | 2.47E-03 |
| 6 | 0.91% | 164 | 6.90E-04 | 14 | 6.03% | 1088 | 4.57E-03 | 22 | 3.30% | 595 | 2.50E-03 |
| 7 | 3.79% | 684 | 2.87E-03 | 15 | 7.01% | 1265 | 5.31E-03 | 23 | 2.46% | 444 | 1.86E-03 |
| 8 | 7.76% | 1400 | 5.88E-03 | 16 | 7.13% | 1286 | 5.40E-03 | 24 | 1.86% | 336 | 1.41E-03 |
| | | | | | | | | Total | | 18,040 | |

**3141-3155 El Camino Real, Santa Clara, CA - El Camino Real Traffic - TACs & PM2.5**
**AERMOD Risk Modeling Parameters and Maximum Concentrations**
**at Construction MEI Receptor (1.5m receptor height)**

| | |
|---|---|
| **Emission Year** | 2022 |
| **Receptor Information** | Construction MEI receptor |
| Number of Receptors | 1 |
| Receptor Height | 1.5 meters |
| Receptor Distances | At Construction MEI location |
| | |
| **Meteorological Conditions** | |
| BAQMD San Jose Airport Met Data | 2013-2017 |
| Land Use Classification | Urban |
| Wind Speed | Variable |
| Wind Direction | Variable |

## Construction MEI Cancer Risk Maximum Concentrations

| Meteorological Data Years | Concentration (µg/m3) | | |
|---|---|---|---|
| | DPM | Exhaust TOG | Evaporative TOG |
| 2013-2017 | 0.0025 | 0.1078 | 0.1249 |

## Construction MEI PM2.5 Maximum Concentrations

| Meteorological Data Years | PM2.5 Concentration (µg/m3) | | |
|---|---|---|---|
| | Total PM2.5 | Fugitive PM2.5 | Vehicle PM2.5 |
| 2013-2017 | 0.1045 | 0.0987 | 0.0057 |

**3141-3155 El Camino Real, Santa Clara, CA - El Camino Real Cancer Risk & PM2.5**
**Impacts at Construction MEI - 1.5 meter receptor height**
**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* | 2022 | 10 | 0.0025 | 0.1078 | 0.1249 | 0.034 | 0.008 | 0.0006 | 0.04 |
| 1 | 1 | 0 - 1 | 2022 | 10 | 0.0025 | 0.1078 | 0.1249 | 0.414 | 0.101 | 0.0069 | 0.52 |
| 2 | 1 | 1 - 2 | 2023 | 10 | 0.0025 | 0.1078 | 0.1249 | 0.414 | 0.101 | 0.0069 | 0.52 |
| 3 | 1 | 2 - 3 | 2024 | 3 | 0.0025 | 0.1078 | 0.1249 | 0.065 | 0.016 | 0.0011 | 0.08 |
| 4 | 1 | 3 - 4 | 2025 | 3 | 0.0025 | 0.1078 | 0.1249 | 0.065 | 0.016 | 0.0011 | 0.08 |
| 5 | 1 | 4 - 5 | 2026 | 3 | 0.0025 | 0.1078 | 0.1249 | 0.065 | 0.016 | 0.0011 | 0.08 |
| 6 | 1 | 5 - 6 | 2027 | 3 | 0.0025 | 0.1078 | 0.1249 | 0.065 | 0.016 | 0.0011 | 0.08 |
| 7 | 1 | 6 - 7 | 2028 | 3 | 0.0025 | 0.1078 | 0.1249 | 0.065 | 0.016 | 0.0011 | 0.08 |
| 8 | 1 | 7 - 8 | 2029 | 3 | 0.0025 | 0.1078 | 0.1249 | 0.065 | 0.016 | 0.0011 | 0.08 |
| 9 | 1 | 8 - 9 | 2030 | 3 | 0.0025 | 0.1078 | 0.1249 | 0.065 | 0.016 | 0.0011 | 0.08 |
| 10 | 1 | 9 - 10 | 2031 | 3 | 0.0025 | 0.1078 | 0.1249 | 0.065 | 0.016 | 0.0011 | 0.08 |
| 11 | 1 | 10 - 11 | 2032 | 3 | 0.0025 | 0.1078 | 0.1249 | 0.065 | 0.016 | 0.0011 | 0.08 |
| 12 | 1 | 11 - 12 | 2033 | 3 | 0.0025 | 0.1078 | 0.1249 | 0.065 | 0.016 | 0.0011 | 0.08 |
| 13 | 1 | 12 - 13 | 2034 | 3 | 0.0025 | 0.1078 | 0.1249 | 0.065 | 0.016 | 0.0011 | 0.08 |
| 14 | 1 | 13 - 14 | 2035 | 3 | 0.0025 | 0.1078 | 0.1249 | 0.065 | 0.016 | 0.0011 | 0.08 |
| 15 | 1 | 14 - 15 | 2036 | 3 | 0.0025 | 0.1078 | 0.1249 | 0.065 | 0.016 | 0.0011 | 0.08 |
| 16 | 1 | 15 - 16 | 2037 | 3 | 0.0025 | 0.1078 | 0.1249 | 0.065 | 0.016 | 0.0011 | 0.08 |
| 17 | 1 | 16-17 | 2038 | 1 | 0.0025 | 0.1078 | 0.1249 | 0.007 | 0.002 | 0.0001 | 0.01 |
| 18 | 1 | 17-18 | 2039 | 1 | 0.0025 | 0.1078 | 0.1249 | 0.007 | 0.002 | 0.0001 | 0.01 |
| 19 | 1 | 18-19 | 2040 | 1 | 0.0025 | 0.1078 | 0.1249 | 0.007 | 0.002 | 0.0001 | 0.01 |
| 20 | 1 | 19-20 | 2041 | 1 | 0.0025 | 0.1078 | 0.1249 | 0.007 | 0.002 | 0.0001 | 0.01 |
| 21 | 1 | 20-21 | 2042 | 1 | 0.0025 | 0.1078 | 0.1249 | 0.007 | 0.002 | 0.0001 | 0.01 |
| 22 | 1 | 21-22 | 2043 | 1 | 0.0025 | 0.1078 | 0.1249 | 0.007 | 0.002 | 0.0001 | 0.01 |
| 23 | 1 | 22-23 | 2044 | 1 | 0.0025 | 0.1078 | 0.1249 | 0.007 | 0.002 | 0.0001 | 0.01 |
| 24 | 1 | 23-24 | 2045 | 1 | 0.0025 | 0.1078 | 0.1249 | 0.007 | 0.002 | 0.0001 | 0.01 |
| 25 | 1 | 24-25 | 2046 | 1 | 0.0025 | 0.1078 | 0.1249 | 0.007 | 0.002 | 0.0001 | 0.01 |
| 26 | 1 | 25-26 | 2047 | 1 | 0.0025 | 0.1078 | 0.1249 | 0.007 | 0.002 | 0.0001 | 0.01 |
| 27 | 1 | 26-27 | 2048 | 1 | 0.0025 | 0.1078 | 0.1249 | 0.007 | 0.002 | 0.0001 | 0.01 |
| 28 | 1 | 27-28 | 2049 | 1 | 0.0025 | 0.1078 | 0.1249 | 0.007 | 0.002 | 0.0001 | 0.01 |
| 29 | 1 | 28-29 | 2050 | 1 | 0.0025 | 0.1078 | 0.1249 | 0.007 | 0.002 | 0.0001 | 0.01 |
| 30 | 1 | 29-30 | 2051 | 1 | 0.0025 | 0.1078 | 0.1249 | 0.007 | 0.002 | 0.0001 | 0.01 |
| **Total Increased Cancer Risk** | | | | | | | | 1.88 | 0.458 | 0.031 | **2.36** |

| Maximum Hazard Index | Maximum Fugitive PM2.5 | Total PM2.5 |
|---|---|---|
| 0.001 | 0.10 | 0.10 |

* Third trimester of pregnancy

**3141-3155 El Camino Real, Santa Clara, CA - El Camino Real Traffic - TACs & PM2.5**
**AERMOD Risk Modeling Parameters and Maximum Concentrations - Without MERV13 Filtration**
**On-Site 1st - 3rd Floor Residential Receptors (1.5 , 4.5, and 7.6 meter receptor heights)**

| | |
|---|---|
| **Emission Year** | 2024 |
| **Receptor Information** | Maximum On-Site Receptor |
| Number of Receptors | 205 |
| Receptor Height | 1.5, 4.5, and 7.6 meters |
| Receptor Distances | 7 meter grid spacing |

| | |
|---|---|
| **Meteorological Conditions** | |
| BAQMD San Jose Airport Met Data | 2013-2017 |
| Land Use Classification | Urban |
| Wind Speed | Variable |
| Wind Direction | Variable |

## On-Site Cancer Risk Maximum Concentrations

| Meteorological Data Years | Concentration (µg/m3) | | | |
|---|---|---|---|---|
| | DPM | Exhaust TOG | Evaporative TOG | |
| 2013-2017 | 0.0082 | 0.4742 | 0.5495 | 1st Floor |
| 2013-2017 | 0.0069 | 0.2983 | 0.3452 | 2nd Floor |
| 2013-2017 | 0.0043 | 0.1504 | 0.1738 | 3rd Floor |

## On-Site PM2.5 Maximum Concentrations

| Meteorological Data Years | PM2.5 Concentration (µg/m3) | | | |
|---|---|---|---|---|
| | Total PM2.5 | Fugitive PM2.5 | Vehicle PM2.5 | |
| 2013-2017 | 0.4598 | 0.4345 | 0.0253 | 1st Floor |
| 2013-2017 | 0.2870 | 0.2711 | 0.0159 | 2nd Floor |
| 2013-2017 | 0.1440 | 0.1360 | 0.0080 | 3rd Floor |

**3141-3155 El Camino Real, Santa Clara, CA - El Camino Real Cancer Risk**
**Impacts at On-Site 1st Floor Residential Receptors - 1.5 meter receptor height**
**30 Year Residential Exposure - Without MERV13 Filtration**

### 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) | | | 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* | 2024 | 10 | 0.0082 | 0.4742 | 0.5495 | 0.112 | 0.037 | 0.0025 | 0.15 |
| 1 | 1 | 0 - 1 | 2024 | 10 | 0.0082 | 0.4742 | 0.5495 | 1.350 | 0.445 | 0.0304 | 1.83 |
| 2 | 1 | 1 - 2 | 2025 | 10 | 0.0082 | 0.4742 | 0.5495 | 1.350 | 0.445 | 0.0304 | 1.83 |
| 3 | 1 | 2 - 3 | 2026 | 3 | 0.0082 | 0.4742 | 0.5495 | 0.213 | 0.070 | 0.0048 | 0.29 |
| 4 | 1 | 3 - 4 | 2027 | 3 | 0.0082 | 0.4742 | 0.5495 | 0.213 | 0.070 | 0.0048 | 0.29 |
| 5 | 1 | 4 - 5 | 2028 | 3 | 0.0082 | 0.4742 | 0.5495 | 0.213 | 0.070 | 0.0048 | 0.29 |
| 6 | 1 | 5 - 6 | 2029 | 3 | 0.0082 | 0.4742 | 0.5495 | 0.213 | 0.070 | 0.0048 | 0.29 |
| 7 | 1 | 6 - 7 | 2030 | 3 | 0.0082 | 0.4742 | 0.5495 | 0.213 | 0.070 | 0.0048 | 0.29 |
| 8 | 1 | 7 - 8 | 2031 | 3 | 0.0082 | 0.4742 | 0.5495 | 0.213 | 0.070 | 0.0048 | 0.29 |
| 9 | 1 | 8 - 9 | 2032 | 3 | 0.0082 | 0.4742 | 0.5495 | 0.213 | 0.070 | 0.0048 | 0.29 |
| 10 | 1 | 9 - 10 | 2033 | 3 | 0.0082 | 0.4742 | 0.5495 | 0.213 | 0.070 | 0.0048 | 0.29 |
| 11 | 1 | 10 - 11 | 2034 | 3 | 0.0082 | 0.4742 | 0.5495 | 0.213 | 0.070 | 0.0048 | 0.29 |
| 12 | 1 | 11 - 12 | 2035 | 3 | 0.0082 | 0.4742 | 0.5495 | 0.213 | 0.070 | 0.0048 | 0.29 |
| 13 | 1 | 12 - 13 | 2036 | 3 | 0.0082 | 0.4742 | 0.5495 | 0.213 | 0.070 | 0.0048 | 0.29 |
| 14 | 1 | 13 - 14 | 2037 | 3 | 0.0082 | 0.4742 | 0.5495 | 0.213 | 0.070 | 0.0048 | 0.29 |
| 15 | 1 | 14 - 15 | 2038 | 3 | 0.0082 | 0.4742 | 0.5495 | 0.213 | 0.070 | 0.0048 | 0.29 |
| 16 | 1 | 15 - 16 | 2039 | 3 | 0.0082 | 0.4742 | 0.5495 | 0.213 | 0.070 | 0.0048 | 0.29 |
| 17 | 1 | 16-17 | 2040 | 1 | 0.0082 | 0.4742 | 0.5495 | 0.024 | 0.008 | 0.0005 | 0.03 |
| 18 | 1 | 17-18 | 2041 | 1 | 0.0082 | 0.4742 | 0.5495 | 0.024 | 0.008 | 0.0005 | 0.03 |
| 19 | 1 | 18-19 | 2042 | 1 | 0.0082 | 0.4742 | 0.5495 | 0.024 | 0.008 | 0.0005 | 0.03 |
| 20 | 1 | 19-20 | 2043 | 1 | 0.0082 | 0.4742 | 0.5495 | 0.024 | 0.008 | 0.0005 | 0.03 |
| 21 | 1 | 20-21 | 2044 | 1 | 0.0082 | 0.4742 | 0.5495 | 0.024 | 0.008 | 0.0005 | 0.03 |
| 22 | 1 | 21-22 | 2045 | 1 | 0.0082 | 0.4742 | 0.5495 | 0.024 | 0.008 | 0.0005 | 0.03 |
| 23 | 1 | 22-23 | 2046 | 1 | 0.0082 | 0.4742 | 0.5495 | 0.024 | 0.008 | 0.0005 | 0.03 |
| 24 | 1 | 23-24 | 2047 | 1 | 0.0082 | 0.4742 | 0.5495 | 0.024 | 0.008 | 0.0005 | 0.03 |
| 25 | 1 | 24-25 | 2048 | 1 | 0.0082 | 0.4742 | 0.5495 | 0.024 | 0.008 | 0.0005 | 0.03 |
| 26 | 1 | 25-26 | 2049 | 1 | 0.0082 | 0.4742 | 0.5495 | 0.024 | 0.008 | 0.0005 | 0.03 |
| 27 | 1 | 26-27 | 2050 | 1 | 0.0082 | 0.4742 | 0.5495 | 0.024 | 0.008 | 0.0005 | 0.03 |
| 28 | 1 | 27-28 | 2051 | 1 | 0.0082 | 0.4742 | 0.5495 | 0.024 | 0.008 | 0.0005 | 0.03 |
| 29 | 1 | 28-29 | 2052 | 1 | 0.0082 | 0.4742 | 0.5495 | 0.024 | 0.008 | 0.0005 | 0.03 |
| 30 | 1 | 29-30 | 2053 | 1 | 0.0082 | 0.4742 | 0.5495 | 0.024 | 0.008 | 0.0005 | 0.03 |
| **Total Increased Cancer Risk** | | | | | | | | 6.12 | 2.015 | 0.138 | **8.27** |

| Maximum Hazard Index | Maximum Fugitive PM2.5 | Total PM2.5 |
|---|---|---|
| 0.002 | 0.43 | 0.46 |

* Third trimester of pregnancy

**3141-3155 El Camino Real, Santa Clara, CA - El Camino Real Cancer Risk**
**Impacts at On-Site 2nd Floor Residential Receptors - 4.5 meter receptor height**
**30 Year Residential Exposure - Without MERV13 Filtration**

### 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* | 2024 | 10 | 0.0069 | 0.2983 | 0.3452 | 0.094 | 0.023 | 0.0016 | 0.12 |
| 1 | 1 | 0 - 1 | 2024 | 10 | 0.0069 | 0.2983 | 0.3452 | 1.138 | 0.280 | 0.0191 | 1.44 |
| 2 | 1 | 1 - 2 | 2025 | 10 | 0.0069 | 0.2983 | 0.3452 | 1.138 | 0.280 | 0.0191 | 1.44 |
| 3 | 1 | 2 - 3 | 2026 | 3 | 0.0069 | 0.2983 | 0.3452 | 0.179 | 0.044 | 0.0030 | 0.23 |
| 4 | 1 | 3 - 4 | 2027 | 3 | 0.0069 | 0.2983 | 0.3452 | 0.179 | 0.044 | 0.0030 | 0.23 |
| 5 | 1 | 4 - 5 | 2028 | 3 | 0.0069 | 0.2983 | 0.3452 | 0.179 | 0.044 | 0.0030 | 0.23 |
| 6 | 1 | 5 - 6 | 2029 | 3 | 0.0069 | 0.2983 | 0.3452 | 0.179 | 0.044 | 0.0030 | 0.23 |
| 7 | 1 | 6 - 7 | 2030 | 3 | 0.0069 | 0.2983 | 0.3452 | 0.179 | 0.044 | 0.0030 | 0.23 |
| 8 | 1 | 7 - 8 | 2031 | 3 | 0.0069 | 0.2983 | 0.3452 | 0.179 | 0.044 | 0.0030 | 0.23 |
| 9 | 1 | 8 - 9 | 2032 | 3 | 0.0069 | 0.2983 | 0.3452 | 0.179 | 0.044 | 0.0030 | 0.23 |
| 10 | 1 | 9 - 10 | 2033 | 3 | 0.0069 | 0.2983 | 0.3452 | 0.179 | 0.044 | 0.0030 | 0.23 |
| 11 | 1 | 10 - 11 | 2034 | 3 | 0.0069 | 0.2983 | 0.3452 | 0.179 | 0.044 | 0.0030 | 0.23 |
| 12 | 1 | 11 - 12 | 2035 | 3 | 0.0069 | 0.2983 | 0.3452 | 0.179 | 0.044 | 0.0030 | 0.23 |
| 13 | 1 | 12 - 13 | 2036 | 3 | 0.0069 | 0.2983 | 0.3452 | 0.179 | 0.044 | 0.0030 | 0.23 |
| 14 | 1 | 13 - 14 | 2037 | 3 | 0.0069 | 0.2983 | 0.3452 | 0.179 | 0.044 | 0.0030 | 0.23 |
| 15 | 1 | 14 - 15 | 2038 | 3 | 0.0069 | 0.2983 | 0.3452 | 0.179 | 0.044 | 0.0030 | 0.23 |
| 16 | 1 | 15 - 16 | 2039 | 3 | 0.0069 | 0.2983 | 0.3452 | 0.179 | 0.044 | 0.0030 | 0.23 |
| 17 | 1 | 16-17 | 2040 | 1 | 0.0069 | 0.2983 | 0.3452 | 0.020 | 0.005 | 0.0003 | 0.03 |
| 18 | 1 | 17-18 | 2041 | 1 | 0.0069 | 0.2983 | 0.3452 | 0.020 | 0.005 | 0.0003 | 0.03 |
| 19 | 1 | 18-19 | 2042 | 1 | 0.0069 | 0.2983 | 0.3452 | 0.020 | 0.005 | 0.0003 | 0.03 |
| 20 | 1 | 19-20 | 2043 | 1 | 0.0069 | 0.2983 | 0.3452 | 0.020 | 0.005 | 0.0003 | 0.03 |
| 21 | 1 | 20-21 | 2044 | 1 | 0.0069 | 0.2983 | 0.3452 | 0.020 | 0.005 | 0.0003 | 0.03 |
| 22 | 1 | 21-22 | 2045 | 1 | 0.0069 | 0.2983 | 0.3452 | 0.020 | 0.005 | 0.0003 | 0.03 |
| 23 | 1 | 22-23 | 2046 | 1 | 0.0069 | 0.2983 | 0.3452 | 0.020 | 0.005 | 0.0003 | 0.03 |
| 24 | 1 | 23-24 | 2047 | 1 | 0.0069 | 0.2983 | 0.3452 | 0.020 | 0.005 | 0.0003 | 0.03 |
| 25 | 1 | 24-25 | 2048 | 1 | 0.0069 | 0.2983 | 0.3452 | 0.020 | 0.005 | 0.0003 | 0.03 |
| 26 | 1 | 25-26 | 2049 | 1 | 0.0069 | 0.2983 | 0.3452 | 0.020 | 0.005 | 0.0003 | 0.03 |
| 27 | 1 | 26-27 | 2050 | 1 | 0.0069 | 0.2983 | 0.3452 | 0.020 | 0.005 | 0.0003 | 0.03 |
| 28 | 1 | 27-28 | 2051 | 1 | 0.0069 | 0.2983 | 0.3452 | 0.020 | 0.005 | 0.0003 | 0.03 |
| 29 | 1 | 28-29 | 2052 | 1 | 0.0069 | 0.2983 | 0.3452 | 0.020 | 0.005 | 0.0003 | 0.03 |
| 30 | 1 | 29-30 | 2053 | 1 | 0.0069 | 0.2983 | 0.3452 | 0.020 | 0.005 | 0.0003 | 0.03 |
| **Total Increased Cancer Risk** | | | | | | | | 5.16 | 1.268 | 0.086 | **6.51** |

| Maximum Hazard Index | Maximum Fugitive PM2.5 | Total PM2.5 |
|---|---|---|
| 0.0014 | 0.27 | 0.29 |

* Third trimester of pregnancy

**3141-3155 El Camino Real, Santa Clara, CA - El Camino Real Cancer Risk**
**Impacts at On-Site 3rd Floor Residential Receptors - 7.6 meter receptor height**
**30 Year Residential Exposure - Without MERV13 Filtration**

### 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* | 2024 | 10 | 0.0043 | 0.1504 | 0.1738 | 0.059 | 0.012 | 0.0008 | 0.07 |
| 1 | 1 | 0 - 1 | 2024 | 10 | 0.0043 | 0.1504 | 0.1738 | 0.710 | 0.141 | 0.0096 | 0.86 |
| 2 | 1 | 1 - 2 | 2025 | 10 | 0.0043 | 0.1504 | 0.1738 | 0.710 | 0.141 | 0.0096 | 0.86 |
| 3 | 1 | 2 - 3 | 2026 | 3 | 0.0043 | 0.1504 | 0.1738 | 0.112 | 0.022 | 0.0015 | 0.14 |
| 4 | 1 | 3 - 4 | 2027 | 3 | 0.0043 | 0.1504 | 0.1738 | 0.112 | 0.022 | 0.0015 | 0.14 |
| 5 | 1 | 4 - 5 | 2028 | 3 | 0.0043 | 0.1504 | 0.1738 | 0.112 | 0.022 | 0.0015 | 0.14 |
| 6 | 1 | 5 - 6 | 2029 | 3 | 0.0043 | 0.1504 | 0.1738 | 0.112 | 0.022 | 0.0015 | 0.14 |
| 7 | 1 | 6 - 7 | 2030 | 3 | 0.0043 | 0.1504 | 0.1738 | 0.112 | 0.022 | 0.0015 | 0.14 |
| 8 | 1 | 7 - 8 | 2031 | 3 | 0.0043 | 0.1504 | 0.1738 | 0.112 | 0.022 | 0.0015 | 0.14 |
| 9 | 1 | 8 - 9 | 2032 | 3 | 0.0043 | 0.1504 | 0.1738 | 0.112 | 0.022 | 0.0015 | 0.14 |
| 10 | 1 | 9 - 10 | 2033 | 3 | 0.0043 | 0.1504 | 0.1738 | 0.112 | 0.022 | 0.0015 | 0.14 |
| 11 | 1 | 10 - 11 | 2034 | 3 | 0.0043 | 0.1504 | 0.1738 | 0.112 | 0.022 | 0.0015 | 0.14 |
| 12 | 1 | 11 - 12 | 2035 | 3 | 0.0043 | 0.1504 | 0.1738 | 0.112 | 0.022 | 0.0015 | 0.14 |
| 13 | 1 | 12 - 13 | 2036 | 3 | 0.0043 | 0.1504 | 0.1738 | 0.112 | 0.022 | 0.0015 | 0.14 |
| 14 | 1 | 13 - 14 | 2037 | 3 | 0.0043 | 0.1504 | 0.1738 | 0.112 | 0.022 | 0.0015 | 0.14 |
| 15 | 1 | 14 - 15 | 2038 | 3 | 0.0043 | 0.1504 | 0.1738 | 0.112 | 0.022 | 0.0015 | 0.14 |
| 16 | 1 | 15 - 16 | 2039 | 3 | 0.0043 | 0.1504 | 0.1738 | 0.112 | 0.022 | 0.0015 | 0.14 |
| 17 | 1 | 16-17 | 2040 | 1 | 0.0043 | 0.1504 | 0.1738 | 0.012 | 0.002 | 0.0002 | 0.02 |
| 18 | 1 | 17-18 | 2041 | 1 | 0.0043 | 0.1504 | 0.1738 | 0.012 | 0.002 | 0.0002 | 0.02 |
| 19 | 1 | 18-19 | 2042 | 1 | 0.0043 | 0.1504 | 0.1738 | 0.012 | 0.002 | 0.0002 | 0.02 |
| 20 | 1 | 19-20 | 2043 | 1 | 0.0043 | 0.1504 | 0.1738 | 0.012 | 0.002 | 0.0002 | 0.02 |
| 21 | 1 | 20-21 | 2044 | 1 | 0.0043 | 0.1504 | 0.1738 | 0.012 | 0.002 | 0.0002 | 0.02 |
| 22 | 1 | 21-22 | 2045 | 1 | 0.0043 | 0.1504 | 0.1738 | 0.012 | 0.002 | 0.0002 | 0.02 |
| 23 | 1 | 22-23 | 2046 | 1 | 0.0043 | 0.1504 | 0.1738 | 0.012 | 0.002 | 0.0002 | 0.02 |
| 24 | 1 | 23-24 | 2047 | 1 | 0.0043 | 0.1504 | 0.1738 | 0.012 | 0.002 | 0.0002 | 0.02 |
| 25 | 1 | 24-25 | 2048 | 1 | 0.0043 | 0.1504 | 0.1738 | 0.012 | 0.002 | 0.0002 | 0.02 |
| 26 | 1 | 25-26 | 2049 | 1 | 0.0043 | 0.1504 | 0.1738 | 0.012 | 0.002 | 0.0002 | 0.02 |
| 27 | 1 | 26-27 | 2050 | 1 | 0.0043 | 0.1504 | 0.1738 | 0.012 | 0.002 | 0.0002 | 0.02 |
| 28 | 1 | 27-28 | 2051 | 1 | 0.0043 | 0.1504 | 0.1738 | 0.012 | 0.002 | 0.0002 | 0.02 |
| 29 | 1 | 28-29 | 2052 | 1 | 0.0043 | 0.1504 | 0.1738 | 0.012 | 0.002 | 0.0002 | 0.02 |
| 30 | 1 | 29-30 | 2053 | 1 | 0.0043 | 0.1504 | 0.1738 | 0.012 | 0.002 | 0.0002 | 0.02 |
| **Total Increased Cancer Risk** | | | | | | | | 3.22 | 0.639 | 0.044 | **3.90** |

| Maximum Hazard Index | Maximum Fugitive PM2.5 | Total PM2.5 |
|---|---|---|
| 0.0009 | 0.14 | 0.14 |

* Third trimester of pregnancy

**3141-3155 El Camino Real, Santa Clara, CA - El Camino Real Traffic - TACs & PM2.5**
**AERMOD Risk Modeling Parameters and Maximum Concentrations - With MERV13 Filtration**
**On-Site 1st - 3rd Floor Residential Receptors (1.5 , 4.5, and 7.6 meter receptor heights)**

| | |
|---|---|
| **Emission Year** | 2024 |
| **Receptor Information** | Maximum On-Site Receptor |
| Number of Receptors | 205 |
| Receptor Height | 1.5, 4.5, and 7.6 meters |
| Receptor Distances | 7 meter grid spacing |

| | |
|---|---|
| **Meteorological Conditions** | |
| BAQMD San Jose Airport Met Data | 2013-2017 |
| Land Use Classification | Urban |
| Wind Speed | Variable |
| Wind Direction | Variable |

## On-Site Cancer Risk Maximum Concentrations

| Meteorological Data Years | Concentration (µg/m3) | | | |
|---|---|---|---|---|
| | DPM | Exhaust TOG | Evaporative TOG | |
| 2013-2017 | 0.0025 | 0.4742 | 0.5495 | 1st Floor |
| 2013-2017 | 0.0021 | 0.2983 | 0.3452 | 2nd Floor |
| 2013-2017 | 0.0013 | 0.1504 | 0.1738 | 3rd Floor |

## On-Site PM2.5 Maximum Concentrations

| Meteorological Data Years | PM2.5 Concentration (µg/m3) | | | |
|---|---|---|---|---|
| | Total PM2.5 | Fugitive PM2.5 | Vehicle PM2.5 | |
| 2013-2017 | 0.1379 | 0.1304 | 0.0076 | 1st Floor |
| 2013-2017 | 0.0861 | 0.0813 | 0.0048 | 2nd Floor |
| 2013-2017 | 0.0432 | 0.0408 | 0.0024 | 3rd Floor |

**3141-3155 El Camino Real, Santa Clara, CA - El Camino Real Cancer Risk**
**Impacts at On-Site 1st Floor Residential Receptors - 1.5 meter receptor height**
**30 Year Residential Exposure - With MERV13 Filtration**

### 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* | 2024 | 10 | 0.0025 | 0.4742 | 0.5495 | 0.034 | 0.037 | 0.0025 | 0.07 |
| 1 | 1 | 0 - 1 | 2024 | 10 | 0.0025 | 0.4742 | 0.5495 | 0.405 | 0.445 | 0.0304 | 0.88 |
| 2 | 1 | 1 - 2 | 2025 | 10 | 0.0025 | 0.4742 | 0.5495 | 0.405 | 0.445 | 0.0304 | 0.88 |
| 3 | 1 | 2 - 3 | 2026 | 3 | 0.0025 | 0.4742 | 0.5495 | 0.064 | 0.070 | 0.0048 | 0.14 |
| 4 | 1 | 3 - 4 | 2027 | 3 | 0.0025 | 0.4742 | 0.5495 | 0.064 | 0.070 | 0.0048 | 0.14 |
| 5 | 1 | 4 - 5 | 2028 | 3 | 0.0025 | 0.4742 | 0.5495 | 0.064 | 0.070 | 0.0048 | 0.14 |
| 6 | 1 | 5 - 6 | 2029 | 3 | 0.0025 | 0.4742 | 0.5495 | 0.064 | 0.070 | 0.0048 | 0.14 |
| 7 | 1 | 6 - 7 | 2030 | 3 | 0.0025 | 0.4742 | 0.5495 | 0.064 | 0.070 | 0.0048 | 0.14 |
| 8 | 1 | 7 - 8 | 2031 | 3 | 0.0025 | 0.4742 | 0.5495 | 0.064 | 0.070 | 0.0048 | 0.14 |
| 9 | 1 | 8 - 9 | 2032 | 3 | 0.0025 | 0.4742 | 0.5495 | 0.064 | 0.070 | 0.0048 | 0.14 |
| 10 | 1 | 9 - 10 | 2033 | 3 | 0.0025 | 0.4742 | 0.5495 | 0.064 | 0.070 | 0.0048 | 0.14 |
| 11 | 1 | 10 - 11 | 2034 | 3 | 0.0025 | 0.4742 | 0.5495 | 0.064 | 0.070 | 0.0048 | 0.14 |
| 12 | 1 | 11 - 12 | 2035 | 3 | 0.0025 | 0.4742 | 0.5495 | 0.064 | 0.070 | 0.0048 | 0.14 |
| 13 | 1 | 12 - 13 | 2036 | 3 | 0.0025 | 0.4742 | 0.5495 | 0.064 | 0.070 | 0.0048 | 0.14 |
| 14 | 1 | 13 - 14 | 2037 | 3 | 0.0025 | 0.4742 | 0.5495 | 0.064 | 0.070 | 0.0048 | 0.14 |
| 15 | 1 | 14 - 15 | 2038 | 3 | 0.0025 | 0.4742 | 0.5495 | 0.064 | 0.070 | 0.0048 | 0.14 |
| 16 | 1 | 15 - 16 | 2039 | 3 | 0.0025 | 0.4742 | 0.5495 | 0.064 | 0.070 | 0.0048 | 0.14 |
| 17 | 1 | 16-17 | 2040 | 1 | 0.0025 | 0.4742 | 0.5495 | 0.007 | 0.008 | 0.0005 | 0.02 |
| 18 | 1 | 17-18 | 2041 | 1 | 0.0025 | 0.4742 | 0.5495 | 0.007 | 0.008 | 0.0005 | 0.02 |
| 19 | 1 | 18-19 | 2042 | 1 | 0.0025 | 0.4742 | 0.5495 | 0.007 | 0.008 | 0.0005 | 0.02 |
| 20 | 1 | 19-20 | 2043 | 1 | 0.0025 | 0.4742 | 0.5495 | 0.007 | 0.008 | 0.0005 | 0.02 |
| 21 | 1 | 20-21 | 2044 | 1 | 0.0025 | 0.4742 | 0.5495 | 0.007 | 0.008 | 0.0005 | 0.02 |
| 22 | 1 | 21-22 | 2045 | 1 | 0.0025 | 0.4742 | 0.5495 | 0.007 | 0.008 | 0.0005 | 0.02 |
| 23 | 1 | 22-23 | 2046 | 1 | 0.0025 | 0.4742 | 0.5495 | 0.007 | 0.008 | 0.0005 | 0.02 |
| 24 | 1 | 23-24 | 2047 | 1 | 0.0025 | 0.4742 | 0.5495 | 0.007 | 0.008 | 0.0005 | 0.02 |
| 25 | 1 | 24-25 | 2048 | 1 | 0.0025 | 0.4742 | 0.5495 | 0.007 | 0.008 | 0.0005 | 0.02 |
| 26 | 1 | 25-26 | 2049 | 1 | 0.0025 | 0.4742 | 0.5495 | 0.007 | 0.008 | 0.0005 | 0.02 |
| 27 | 1 | 26-27 | 2050 | 1 | 0.0025 | 0.4742 | 0.5495 | 0.007 | 0.008 | 0.0005 | 0.02 |
| 28 | 1 | 27-28 | 2051 | 1 | 0.0025 | 0.4742 | 0.5495 | 0.007 | 0.008 | 0.0005 | 0.02 |
| 29 | 1 | 28-29 | 2052 | 1 | 0.0025 | 0.4742 | 0.5495 | 0.007 | 0.008 | 0.0005 | 0.02 |
| 30 | 1 | 29-30 | 2053 | 1 | 0.0025 | 0.4742 | 0.5495 | 0.007 | 0.008 | 0.0005 | 0.02 |
| **Total Increased Cancer Risk** | | | | | | | | 1.84 | 2.015 | 0.138 | **3.99** |

| Maximum Hazard Index | Maximum Fugitive PM2.5 | Total PM2.5 |
|---|---|---|
| 0.0005 | 0.13 | 0.14 |

* Third trimester of pregnancy

**3141-3155 El Camino Real, Santa Clara, CA - El Camino Real Cancer Risk**
**Impacts at On-Site 2nd Floor Residential Receptors - 4.5 meter receptor height**
**30 Year Residential Exposure - With MERV13 Filtration**

### 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* | 2024 | 10 | 0.0021 | 0.2983 | 0.3452 | 0.028 | 0.023 | 0.0016 | 0.05 |
| 1 | 1 | 0 - 1 | 2024 | 10 | 0.0021 | 0.2983 | 0.3452 | 0.341 | 0.280 | 0.0191 | 0.64 |
| 2 | 1 | 1 - 2 | 2025 | 10 | 0.0021 | 0.2983 | 0.3452 | 0.341 | 0.280 | 0.0191 | 0.64 |
| 3 | 1 | 2 - 3 | 2026 | 3 | 0.0021 | 0.2983 | 0.3452 | 0.054 | 0.044 | 0.0030 | 0.10 |
| 4 | 1 | 3 - 4 | 2027 | 3 | 0.0021 | 0.2983 | 0.3452 | 0.054 | 0.044 | 0.0030 | 0.10 |
| 5 | 1 | 4 - 5 | 2028 | 3 | 0.0021 | 0.2983 | 0.3452 | 0.054 | 0.044 | 0.0030 | 0.10 |
| 6 | 1 | 5 - 6 | 2029 | 3 | 0.0021 | 0.2983 | 0.3452 | 0.054 | 0.044 | 0.0030 | 0.10 |
| 7 | 1 | 6 - 7 | 2030 | 3 | 0.0021 | 0.2983 | 0.3452 | 0.054 | 0.044 | 0.0030 | 0.10 |
| 8 | 1 | 7 - 8 | 2031 | 3 | 0.0021 | 0.2983 | 0.3452 | 0.054 | 0.044 | 0.0030 | 0.10 |
| 9 | 1 | 8 - 9 | 2032 | 3 | 0.0021 | 0.2983 | 0.3452 | 0.054 | 0.044 | 0.0030 | 0.10 |
| 10 | 1 | 9 - 10 | 2033 | 3 | 0.0021 | 0.2983 | 0.3452 | 0.054 | 0.044 | 0.0030 | 0.10 |
| 11 | 1 | 10 - 11 | 2034 | 3 | 0.0021 | 0.2983 | 0.3452 | 0.054 | 0.044 | 0.0030 | 0.10 |
| 12 | 1 | 11 - 12 | 2035 | 3 | 0.0021 | 0.2983 | 0.3452 | 0.054 | 0.044 | 0.0030 | 0.10 |
| 13 | 1 | 12 - 13 | 2036 | 3 | 0.0021 | 0.2983 | 0.3452 | 0.054 | 0.044 | 0.0030 | 0.10 |
| 14 | 1 | 13 - 14 | 2037 | 3 | 0.0021 | 0.2983 | 0.3452 | 0.054 | 0.044 | 0.0030 | 0.10 |
| 15 | 1 | 14 - 15 | 2038 | 3 | 0.0021 | 0.2983 | 0.3452 | 0.054 | 0.044 | 0.0030 | 0.10 |
| 16 | 1 | 15 - 16 | 2039 | 3 | 0.0021 | 0.2983 | 0.3452 | 0.054 | 0.044 | 0.0030 | 0.10 |
| 17 | 1 | 16-17 | 2040 | 1 | 0.0021 | 0.2983 | 0.3452 | 0.006 | 0.005 | 0.0003 | 0.01 |
| 18 | 1 | 17-18 | 2041 | 1 | 0.0021 | 0.2983 | 0.3452 | 0.006 | 0.005 | 0.0003 | 0.01 |
| 19 | 1 | 18-19 | 2042 | 1 | 0.0021 | 0.2983 | 0.3452 | 0.006 | 0.005 | 0.0003 | 0.01 |
| 20 | 1 | 19-20 | 2043 | 1 | 0.0021 | 0.2983 | 0.3452 | 0.006 | 0.005 | 0.0003 | 0.01 |
| 21 | 1 | 20-21 | 2044 | 1 | 0.0021 | 0.2983 | 0.3452 | 0.006 | 0.005 | 0.0003 | 0.01 |
| 22 | 1 | 21-22 | 2045 | 1 | 0.0021 | 0.2983 | 0.3452 | 0.006 | 0.005 | 0.0003 | 0.01 |
| 23 | 1 | 22-23 | 2046 | 1 | 0.0021 | 0.2983 | 0.3452 | 0.006 | 0.005 | 0.0003 | 0.01 |
| 24 | 1 | 23-24 | 2047 | 1 | 0.0021 | 0.2983 | 0.3452 | 0.006 | 0.005 | 0.0003 | 0.01 |
| 25 | 1 | 24-25 | 2048 | 1 | 0.0021 | 0.2983 | 0.3452 | 0.006 | 0.005 | 0.0003 | 0.01 |
| 26 | 1 | 25-26 | 2049 | 1 | 0.0021 | 0.2983 | 0.3452 | 0.006 | 0.005 | 0.0003 | 0.01 |
| 27 | 1 | 26-27 | 2050 | 1 | 0.0021 | 0.2983 | 0.3452 | 0.006 | 0.005 | 0.0003 | 0.01 |
| 28 | 1 | 27-28 | 2051 | 1 | 0.0021 | 0.2983 | 0.3452 | 0.006 | 0.005 | 0.0003 | 0.01 |
| 29 | 1 | 28-29 | 2052 | 1 | 0.0021 | 0.2983 | 0.3452 | 0.006 | 0.005 | 0.0003 | 0.01 |
| 30 | 1 | 29-30 | 2053 | 1 | 0.0021 | 0.2983 | 0.3452 | 0.006 | 0.005 | 0.0003 | 0.01 |
| **Total Increased Cancer Risk** | | | | | | | | 1.55 | 1.268 | 0.086 | **2.90** |

| Maximum Hazard Index | Maximum Fugitive PM2.5 | Total PM2.5 |
|---|---|---|
| 0.0004 | 0.08 | 0.09 |

* Third trimester of pregnancy

**3141-3155 El Camino Real, Santa Clara, CA - El Camino Real Cancer Risk**
**Impacts at On-Site 3rd Floor Residential Receptors - 7.6 meter receptor height**
**30 Year Residential Exposure - With MERV13 Filtration**

### 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) | | | 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* | 2024 | 10 | 0.0013 | 0.1504 | 0.1738 | 0.018 | 0.012 | 0.0008 | 0.03 |
| 1 | 1 | 0 - 1 | 2024 | 10 | 0.0013 | 0.1504 | 0.1738 | 0.213 | 0.141 | 0.0096 | 0.36 |
| 2 | 1 | 1 - 2 | 2025 | 10 | 0.0013 | 0.1504 | 0.1738 | 0.213 | 0.141 | 0.0096 | 0.36 |
| 3 | 1 | 2 - 3 | 2026 | 3 | 0.0013 | 0.1504 | 0.1738 | 0.034 | 0.022 | 0.0015 | 0.06 |
| 4 | 1 | 3 - 4 | 2027 | 3 | 0.0013 | 0.1504 | 0.1738 | 0.034 | 0.022 | 0.0015 | 0.06 |
| 5 | 1 | 4 - 5 | 2028 | 3 | 0.0013 | 0.1504 | 0.1738 | 0.034 | 0.022 | 0.0015 | 0.06 |
| 6 | 1 | 5 - 6 | 2029 | 3 | 0.0013 | 0.1504 | 0.1738 | 0.034 | 0.022 | 0.0015 | 0.06 |
| 7 | 1 | 6 - 7 | 2030 | 3 | 0.0013 | 0.1504 | 0.1738 | 0.034 | 0.022 | 0.0015 | 0.06 |
| 8 | 1 | 7 - 8 | 2031 | 3 | 0.0013 | 0.1504 | 0.1738 | 0.034 | 0.022 | 0.0015 | 0.06 |
| 9 | 1 | 8 - 9 | 2032 | 3 | 0.0013 | 0.1504 | 0.1738 | 0.034 | 0.022 | 0.0015 | 0.06 |
| 10 | 1 | 9 - 10 | 2033 | 3 | 0.0013 | 0.1504 | 0.1738 | 0.034 | 0.022 | 0.0015 | 0.06 |
| 11 | 1 | 10 - 11 | 2034 | 3 | 0.0013 | 0.1504 | 0.1738 | 0.034 | 0.022 | 0.0015 | 0.06 |
| 12 | 1 | 11 - 12 | 2035 | 3 | 0.0013 | 0.1504 | 0.1738 | 0.034 | 0.022 | 0.0015 | 0.06 |
| 13 | 1 | 12 - 13 | 2036 | 3 | 0.0013 | 0.1504 | 0.1738 | 0.034 | 0.022 | 0.0015 | 0.06 |
| 14 | 1 | 13 - 14 | 2037 | 3 | 0.0013 | 0.1504 | 0.1738 | 0.034 | 0.022 | 0.0015 | 0.06 |
| 15 | 1 | 14 - 15 | 2038 | 3 | 0.0013 | 0.1504 | 0.1738 | 0.034 | 0.022 | 0.0015 | 0.06 |
| 16 | 1 | 15 - 16 | 2039 | 3 | 0.0013 | 0.1504 | 0.1738 | 0.034 | 0.022 | 0.0015 | 0.06 |
| 17 | 1 | 16-17 | 2040 | 1 | 0.0013 | 0.1504 | 0.1738 | 0.004 | 0.002 | 0.0002 | 0.01 |
| 18 | 1 | 17-18 | 2041 | 1 | 0.0013 | 0.1504 | 0.1738 | 0.004 | 0.002 | 0.0002 | 0.01 |
| 19 | 1 | 18-19 | 2042 | 1 | 0.0013 | 0.1504 | 0.1738 | 0.004 | 0.002 | 0.0002 | 0.01 |
| 20 | 1 | 19-20 | 2043 | 1 | 0.0013 | 0.1504 | 0.1738 | 0.004 | 0.002 | 0.0002 | 0.01 |
| 21 | 1 | 20-21 | 2044 | 1 | 0.0013 | 0.1504 | 0.1738 | 0.004 | 0.002 | 0.0002 | 0.01 |
| 22 | 1 | 21-22 | 2045 | 1 | 0.0013 | 0.1504 | 0.1738 | 0.004 | 0.002 | 0.0002 | 0.01 |
| 23 | 1 | 22-23 | 2046 | 1 | 0.0013 | 0.1504 | 0.1738 | 0.004 | 0.002 | 0.0002 | 0.01 |
| 24 | 1 | 23-24 | 2047 | 1 | 0.0013 | 0.1504 | 0.1738 | 0.004 | 0.002 | 0.0002 | 0.01 |
| 25 | 1 | 24-25 | 2048 | 1 | 0.0013 | 0.1504 | 0.1738 | 0.004 | 0.002 | 0.0002 | 0.01 |
| 26 | 1 | 25-26 | 2049 | 1 | 0.0013 | 0.1504 | 0.1738 | 0.004 | 0.002 | 0.0002 | 0.01 |
| 27 | 1 | 26-27 | 2050 | 1 | 0.0013 | 0.1504 | 0.1738 | 0.004 | 0.002 | 0.0002 | 0.01 |
| 28 | 1 | 27-28 | 2051 | 1 | 0.0013 | 0.1504 | 0.1738 | 0.004 | 0.002 | 0.0002 | 0.01 |
| 29 | 1 | 28-29 | 2052 | 1 | 0.0013 | 0.1504 | 0.1738 | 0.004 | 0.002 | 0.0002 | 0.01 |
| 30 | 1 | 29-30 | 2053 | 1 | 0.0013 | 0.1504 | 0.1738 | 0.004 | 0.002 | 0.0002 | 0.01 |
| **Total Increased Cancer Risk** | | | | | | | | 0.96 | 0.639 | 0.044 | **1.65** |

| Maximum Hazard Index | Maximum Fugitive PM2.5 | Total PM2.5 |
|---|---|---|
| 0.0003 | 0.04 | 0.04 |

* Third trimester of pregnancy

**3141-3155 El Camino Real, Santa Clara, CA - El Camino Real Traffic - TACs & PM2.5**
**AERMOD Risk Modeling Parameters and Minimum Concentrations- Without MERV13 Filtration at On-Site 1st Floor Residential Receptors (1.5 meter receptor heights)**

| | |
|---|---|
| **Emission Year** | 2024 |
| **Receptor Information** | Minimum Ground Floor On-Site Receptor |
| Number of Receptors | 205 |
| Receptor Height | 1.5 meters |
| Receptor Distances | 7 meter grid spacing |

**Meteorological Conditions**

| | |
|---|---|
| BAQMD San Jose Airport Met Data | 2013-2017 |
| Land Use Classification | Urban |
| Wind Speed | Variable |
| Wind Direction | Variable |

**GroundFloor On-Site Cancer Risk Minimum Concentrations**

| Meteorological Data Years | Concentration (µg/m3) | | |
|---|---|---|---|
| | DPM | Exhaust TOG | Evaporative TOG |
| 2013-2017 | 0.0028 | 0.1203 | 0.1394 |

**GroundFloor On-Site PM2.5 Minimum Concentrations**

| Meteorological Data Years | PM2.5 Concentration (µg/m3) | | |
|---|---|---|---|
| | Total PM2.5 | Fugitive PM2.5 | Vehicle PM2.5 |
| 2013-2017 | 0.1167 | 0.1103 | 0.0064 |

**3141-3155 El Camino Real, Santa Clara, CA - El Camino Real Cancer Risk & PM2.5**
**Impacts at On-Site 1st Floor Residential Receptors - 1.5 meter receptor height**
**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* | 2022 | 10 | 0.0028 | 0.1203 | 0.1394 | 0.038 | 0.009 | 0.0006 | 0.05 |
| 1 | 1 | 0 - 1 | 2022 | 10 | 0.0028 | 0.1203 | 0.1394 | 0.460 | 0.113 | 0.0077 | 0.58 |
| 2 | 1 | 1 - 2 | 2023 | 10 | 0.0028 | 0.1203 | 0.1394 | 0.460 | 0.113 | 0.0077 | 0.58 |
| 3 | 1 | 2 - 3 | 2024 | 3 | 0.0028 | 0.1203 | 0.1394 | 0.072 | 0.018 | 0.0012 | 0.09 |
| 4 | 1 | 3 - 4 | 2025 | 3 | 0.0028 | 0.1203 | 0.1394 | 0.072 | 0.018 | 0.0012 | 0.09 |
| 5 | 1 | 4 - 5 | 2026 | 3 | 0.0028 | 0.1203 | 0.1394 | 0.072 | 0.018 | 0.0012 | 0.09 |
| 6 | 1 | 5 - 6 | 2027 | 3 | 0.0028 | 0.1203 | 0.1394 | 0.072 | 0.018 | 0.0012 | 0.09 |
| 7 | 1 | 6 - 7 | 2028 | 3 | 0.0028 | 0.1203 | 0.1394 | 0.072 | 0.018 | 0.0012 | 0.09 |
| 8 | 1 | 7 - 8 | 2029 | 3 | 0.0028 | 0.1203 | 0.1394 | 0.072 | 0.018 | 0.0012 | 0.09 |
| 9 | 1 | 8 - 9 | 2030 | 3 | 0.0028 | 0.1203 | 0.1394 | 0.072 | 0.018 | 0.0012 | 0.09 |
| 10 | 1 | 9 - 10 | 2031 | 3 | 0.0028 | 0.1203 | 0.1394 | 0.072 | 0.018 | 0.0012 | 0.09 |
| 11 | 1 | 10 - 11 | 2032 | 3 | 0.0028 | 0.1203 | 0.1394 | 0.072 | 0.018 | 0.0012 | 0.09 |
| 12 | 1 | 11 - 12 | 2033 | 3 | 0.0028 | 0.1203 | 0.1394 | 0.072 | 0.018 | 0.0012 | 0.09 |
| 13 | 1 | 12 - 13 | 2034 | 3 | 0.0028 | 0.1203 | 0.1394 | 0.072 | 0.018 | 0.0012 | 0.09 |
| 14 | 1 | 13 - 14 | 2035 | 3 | 0.0028 | 0.1203 | 0.1394 | 0.072 | 0.018 | 0.0012 | 0.09 |
| 15 | 1 | 14 - 15 | 2036 | 3 | 0.0028 | 0.1203 | 0.1394 | 0.072 | 0.018 | 0.0012 | 0.09 |
| 16 | 1 | 15 - 16 | 2037 | 3 | 0.0028 | 0.1203 | 0.1394 | 0.072 | 0.018 | 0.0012 | 0.09 |
| 17 | 1 | 16-17 | 2038 | 1 | 0.0028 | 0.1203 | 0.1394 | 0.008 | 0.002 | 0.0001 | 0.01 |
| 18 | 1 | 17-18 | 2039 | 1 | 0.0028 | 0.1203 | 0.1394 | 0.008 | 0.002 | 0.0001 | 0.01 |
| 19 | 1 | 18-19 | 2040 | 1 | 0.0028 | 0.1203 | 0.1394 | 0.008 | 0.002 | 0.0001 | 0.01 |
| 20 | 1 | 19-20 | 2041 | 1 | 0.0028 | 0.1203 | 0.1394 | 0.008 | 0.002 | 0.0001 | 0.01 |
| 21 | 1 | 20-21 | 2042 | 1 | 0.0028 | 0.1203 | 0.1394 | 0.008 | 0.002 | 0.0001 | 0.01 |
| 22 | 1 | 21-22 | 2043 | 1 | 0.0028 | 0.1203 | 0.1394 | 0.008 | 0.002 | 0.0001 | 0.01 |
| 23 | 1 | 22-23 | 2044 | 1 | 0.0028 | 0.1203 | 0.1394 | 0.008 | 0.002 | 0.0001 | 0.01 |
| 24 | 1 | 23-24 | 2045 | 1 | 0.0028 | 0.1203 | 0.1394 | 0.008 | 0.002 | 0.0001 | 0.01 |
| 25 | 1 | 24-25 | 2046 | 1 | 0.0028 | 0.1203 | 0.1394 | 0.008 | 0.002 | 0.0001 | 0.01 |
| 26 | 1 | 25-26 | 2047 | 1 | 0.0028 | 0.1203 | 0.1394 | 0.008 | 0.002 | 0.0001 | 0.01 |
| 27 | 1 | 26-27 | 2048 | 1 | 0.0028 | 0.1203 | 0.1394 | 0.008 | 0.002 | 0.0001 | 0.01 |
| 28 | 1 | 27-28 | 2049 | 1 | 0.0028 | 0.1203 | 0.1394 | 0.008 | 0.002 | 0.0001 | 0.01 |
| 29 | 1 | 28-29 | 2050 | 1 | 0.0028 | 0.1203 | 0.1394 | 0.008 | 0.002 | 0.0001 | 0.01 |
| 30 | 1 | 29-30 | 2051 | 1 | 0.0028 | 0.1203 | 0.1394 | 0.008 | 0.002 | 0.0001 | 0.01 |
| **Total Increased Cancer Risk** | | | | | | | | 2.08 | 0.511 | 0.035 | **2.63** |

| Maximum Hazard Index | Maximum Fugitive PM2.5 | Total PM2.5 |
|---|---|---|
| 0.001 | 0.11 | 0.12 |

* 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** | **9/28/2021** |
| **Contact Name** | Casey Divine |
| **Affiliation** | Illingworth & Rodkin, Inc. |
| **Phone** | 707-794-0400 x103 |
| **Email** | cdivine@illingworthrodkin.com |
| **Project Name** | 3141-3155 El Camino Real |
| **Address** | 3141-3155 El Camino Real |
| **City** | Santa Clara |
| **County** | Santa Clara |
| **Type (residential, commercial, mixed use, industrial, etc.)** | Residential |
| **Project Size (# of units or building square feet)** | 60du |

**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 lue 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 (Map B on right). 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 485 | 3850 | El Camino Body Shop Inc | 3160 EL CAMINO REAL | | 0.002 | | | Auto Body Coating Operation | | 2018 Dataset |
| 500 | 10142 | F&S Auto Body Ltd Co | 3100 El Camino Real Ste J | | 0.0002 | | | Auto Body Coating Operation | | 2018 Dataset |
| 450 | 17236 | City of Santa Clara - Well Site: Zone 1, 7 | 1693 Pomeroy Avenue | 11.22 | 0.02 | 0.01 | | (1) Generator | | 2018 Dataset |
| 950 | 110711 | El Camino Valero | 3305 El Camino Real | 17.24 | 0.08 | | | Gas Dispensing Facility | | 2018 Dataset |

### Construction MEI

| Distance Adjustment Multiplier | Adjusted Cancer Risk Estimate | Adjusted Hazard Risk | Adjusted PM2.5 |
|---|---|---|---|
| 0.36 | #VALUE! | 0.001 | #VALUE! |
| 0.35 | #VALUE! | 0.0001 | #VALUE! |
| 0.14 | 1.57 | 0.002 | 0.002 |
| 0.02 | 0.27 | 0.001 | #VALUE! |

Footnotes:

1. Maximally exposed individual

### Project Site

| Distance from Receptor (feet) or MEI[1] | FACID (Plant No.) | Distance Adjustment Multiplier | Adjusted Cancer Risk Estimate | Adjusted Hazard Risk | Adjusted PM2.5 |
|---|---|---|---|---|---|
| 180 | 3850 | 0.66 | #VALUE! | 0.001 | #VALUE! |
| 150 | 10142 | 0.70 | #VALUE! | 0.0001 | #VALUE! |
| 465 | 17236 | 0.14 | 1.57 | 0.002 | 0.002 |
| 930 | 110711 | 0.02 | 0.28 | 0.001 | #VALUE! |

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.

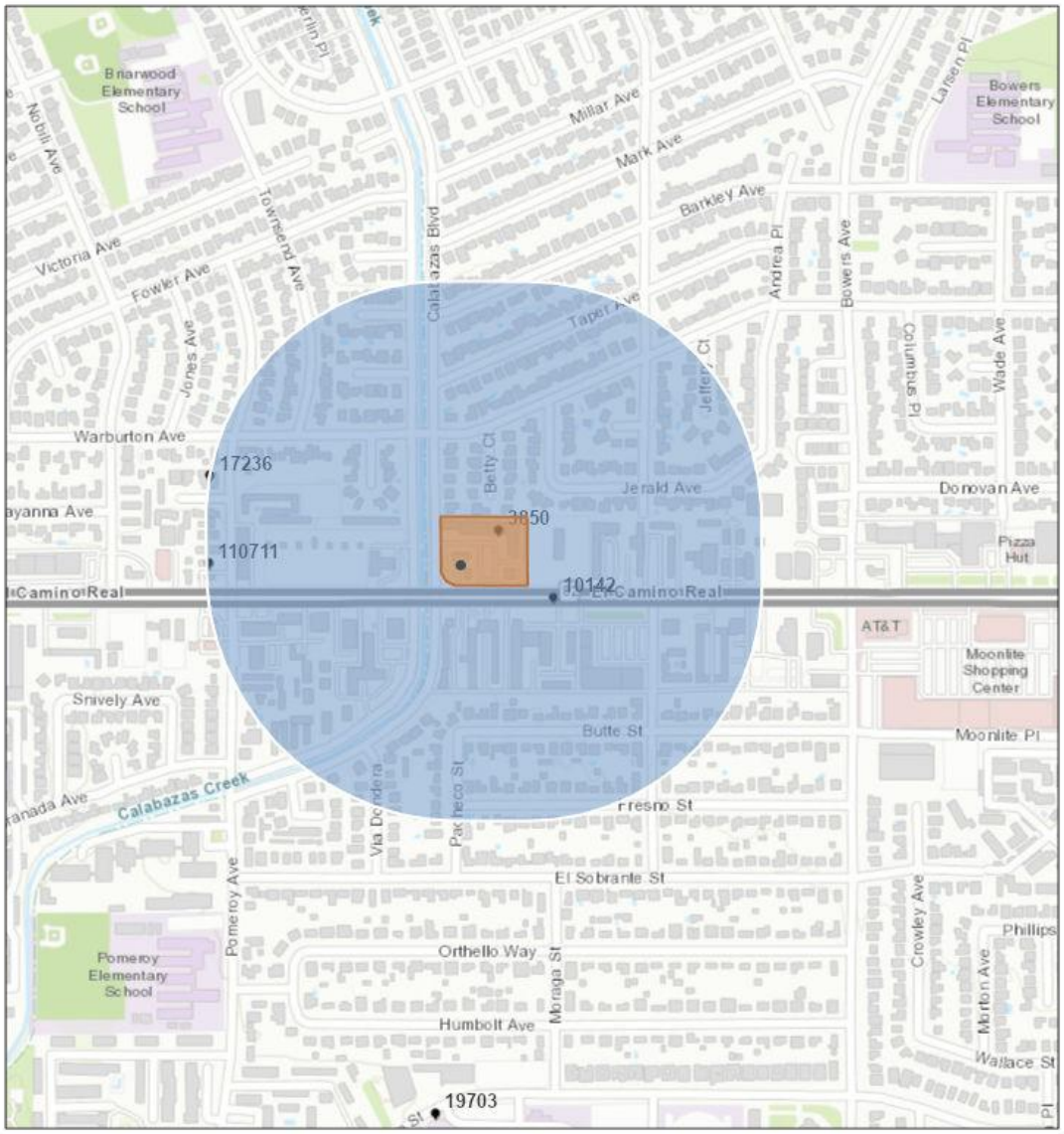
Date last updated:
03/13/2018

# Stationary Source Risk & Hazards Screening Report

## Area of Interest (AOI) Information

Area : 4,536,089.24 ft²

Sep 17 2021 15:16:28 Pacific Daylight Time



## Summary

| Name | Count | Area(ft²) | Length(ft) |
|---|---|---|---|
| Permitted Facilities 2018 | 4 | N/A | N/A |

## Permitted Facilities 2018

| # | FACID | Name | Address | City | St |
|---|---|---|---|---|---|
| 1 | 3850 | El Camino Body Shop Inc | 3160 EL CAMINO REAL | SANTA CLARA | CA |
| 2 | 10142 | F&S Auto Body Ltd Co | 3100 El Camino Real Ste J | Santa Clara | CA |
| 3 | 17236 | City of Santa Clara - Well Site: Zone 1, 7 | 1693 Pomeroy Avenue | Santa Clara | CA |
| 4 | 110711 | El Camino Valero | 3305 El Camino Real | Santa Clara | CA |

| # | Zip | County | Cancer | Hazard | PM_25 | Type | Count |
|---|---|---|---|---|---|---|---|
| 1 | 95051 | Santa Clara | 0.000 | 0.000 | 0.000 | Contact BAAQMD | 1 |
| 2 | 95051 | Santa Clara | 0.000 | 0.000 | 0.000 | Contact BAAQMD | 1 |
| 3 | 95051 | Santa Clara | 11.220 | 0.020 | 0.010 | Generators | 1 |
| 4 | 95051 | Santa Clara | 17.240 | 0.080 | 0.000 | Gas Dispensing Facility | 1 |

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

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