DOT & BAR (VALLEY TITLE) MIXED-USE PROJECT AIR QUALITY ASSESSMENT

San José, California

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Prepared for:

Shannon George
Vice President & Principal Project Manager
David J. Powers & Associates, Inc.
1871 The Alameda, Suite 200
San José, CA 95126

Prepared by:

Casey Divine
Bill Popenuck
James A. Reyff

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
429 E. Cotati Avenue
Cotati, CA 94931
(707) 794-0400

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Introduction

The purpose of this report is to address air quality and community health risk impacts associated with the proposed Dot & Bar (Valley Title) Mixed-Use project in downtown San José, California. The air quality impacts from this project would be associated with demolition of the existing land use, construction of the new buildings and infrastructure, and operation of the project. Air pollutants associated with construction and operation of the project were predicted using appropriate computer models. In addition, the potential project health risk impacts (construction and operation) and the impacts of existing toxic air contaminant (TAC) sources affecting the nearby sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description

The approximately 2.8-acre site is located on the block south of San Carlos Street between S. 1st Street and S. 2nd Street in downtown San José. The site is currently developed with an existing three-story, 58,362 square-foot (sf) office building and an approximately 95,000-sf surface parking lot. The existing buildings located in the southwestern corner of the block are not included in the project site and would remain. The project is within the San José Downtown Strategy 2040 Plan area. The project proposes to demolish the existing uses and construct two 20-story mixed use towers, totaling 1,375,028-sf of office and 58,606-sf of retail and community serving uses on the ground floor.[2] Five levels of below-grade parking with a total of 1,227 parking spaces would be constructed by the proposed project. Approximately 10 percent of the electricity demand for the proposed project would be generated on-site by rooftop photovoltaic panels. The remaining 90 percent of the project's electricity demand would be served by SJCE. No electricity storage is proposed.

Stationary Sources

The project would include two 2,500-kilowatt (kW) generators powered by 3,674-horsepower (HP) diesel engines along the S. 2nd Street façade on the first below-grade level. There would also be three cooling towers on Level 20 of the proposed project.

Wastewater Treatment Plant

Wastewater treatment for the proposed project would be provided through a combination of the City's municipal wastewater service and an independent wastewater treatment facility located in the adjacent Bo Town project to the south, across E. San Salvador Street. The independent wastewater treatment facility would have a capacity to treat 30,000 – 35,000 gallons per day of wastewater and would serve both the proposed project and the Bo Town project. Approximately 17,800 gallons of wastewater generated by the proposed project would be treated on the Bo Town site and returned to the project as recycled water and used for non -potable uses including toilet

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

[2] The project land uses have been updated since this analysis. The square footage of the office use has decreased, the square footage of the retail use has increased, and the number of parking spaces increased but the square footage would not change. These changes result in a net reduction in total building square footage. These project modifications would result in a slight decrease in emissions, and would not change the project's impacts, as discussed further in the report.

flushing, irrigation, and temperature regulation within the cooling towers. The remaining wastewater generated by the proposed project would be directed to the City's municipal wastewater conveyance system and treated at the San José-Santa Clara Wastewater Regional Treatment Facility.

The independent wastewater treatment plant would be located within the below-grade parking garage of the Bo Town project. A 12-inch pipe located approximately 10-20 feet below grade would convey wastewater from the Valley Title site to the wastewater treatment facility on the Bo Town site. Additionally, a six-inch pipe at the same depth would return recycled water from the Bo Town site to the proposed project for non-potable uses.

Construction of the wastewater treatment facility would be limited to assembly of pre-manufactured wastewater treatment plant components within the Bo Town project. Assembly of the wastewater treatment facility would occur concurrently with construction of the Bo Town project and independent of the proposed Valley Title project. Construction of the two pipes connecting the two projects would occur concurrently with construction of the proposed project. If the Bo Town project is not approved, 100 percent of the proposed project's wastewater would be conveyed through the municipal sewer system, treated at the Facility, and no pipe connection would be constructed between the two sites.

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.

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. The most recent Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines were published in February of 2015.[3] See *Attachment 1* for a detailed description of the community risk modeling methodology used in this assessment.

Odors

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

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, elementary schools, and parks. 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 the infants and children at the YWCA Childcare Center (0-6 years old) to the east of the site across S. 2nd Street. There are additional sensitive receptors at farther distances surrounding

[3] 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.

the site. There are also children at the Norte Dame High School (ages 14 - 18) southeast of the project site. The project would not 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.[4]

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.[5] 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

[4] USEPA, 2000. *Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*. EPA420-F-00-057. December.
[5] California Air Resources Board, 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. October.

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.

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.[6] 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

[6] See BAAQMD: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program , accessed 2/18/2021.

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.[7] The BAAQMD has identified six communities as impacted: Concord, Richmond/San Pablo, Western Alameda County, San José, Redwood City/East Palo Alto, and Eastern San Francisco. The project site is within the San José CARE area but not within a BAAQMD overburdened area as identified by CalEnviroScreen.

The BAAQMD California Environmental Quality Act (*CEQA) Air Quality Guidelines*[8] 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.

BAAQMD Rules and Regulations

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

- Regulation 2 – Permits
  - Rule 2-1: General Requirements
  - Rule 2-2: New Source Review
- Regulation 6 – Particulate Matter and Visible Emissions
  - Rule 6-3: Wood-Burning Devices
- Regulation 9 – Inorganic Gaseous Pollutants
  - Rule 9-1: Sulfur Dioxide
  - Rule 9-7: Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, And Process Heaters

[7] 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.
[8] Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*. May.

Rule 9-8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines

Permits

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

Rule 2-1-302 requires that written authorization from the BAAQMD in the form of a Permit to Operate (PTO) be secured before any such equipment is used or operated.
Rule 2-1 lists sources that are exempt from permitting. At the proposed facility, the diesel fuel storage tanks are expected to be exempt from permitting.

New Source Review

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

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

Stationary Diesel Airborne Toxic Control Measure

The BAAQMD administers the CARB's Airborne Toxic Control Measure (ACTM) for Stationary Diesel engines (section 93115, title 17 CA Code of Regulations). The project's stationary sources will be new stationary emergency stationary emergency standby diesel engines larger than 50 hp. These limits vary based on maximum engine power. All engines are limited to PM emission rates of 0.15 g/hp-hour, regardless of size. This ACTM limits engine operation 50 hours per year for routine testing and maintenance.

Offsets

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

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

Rule 6-3 applies to emissions from wood-burning devices. Effective November 1, 2016, no person or builder shall install a wood-burning device in a new building construction. Project plans do not depict fireplaces.

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

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

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

BACT for Diesel Generator Engines

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

> I.C. Engine – Compression Ignition >50hp and <1.000hp: BAAQMD applies BACT 2 emission limits based on the ATCM for stationary emergency standby diesel engines larger than 50 brake-horsepower (BHP). NOx emission factor limit is subject to the CARB ACTM that ranges from 3.0 to 3.5 grams per horsepower hour (g/hp-hr). The PM (PM10 or PM2.5) limit is 0.15 g/hp-hr per CARB's ACTM.
>
> I.C. Engine – Compression Ignition <999hp: BAAQMD applies specific BACT emission limits for stationary emergency standby diesel engines equal or larger than 1,000 brake-horsepower (BHP). NOx emission factor limit is subject to the CARB ACTM that ranges from 0.5 g/hp-hr. The PM (PM10 or PM2.5) limit is 0.02 g/hp-hr. POC (i.e., ROG) limits are 0.14 g/hp-hr.

San José Envision 2040 General Plan

The San José Envision 2040 General Plan includes goals, policies, and actions to reduce exposure of the City's sensitive population to exposure of air pollution and toxic air contaminants or TACs.

The following goals, policies, and actions are applicable to the proposed project and this assessment:

Applicable Goals – Air Pollutant Emission Reduction

Goal MS-10 Minimize emissions from new development.

Applicable Policies – Air Pollutant Emission Reduction

MS-10.1 Assess projected air emissions from new development in conformance with the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines and relative to state and federal standards. Identify and implement feasible air emission reduction measures.

MS-10.2 Consider the cumulative air quality impacts from proposed developments for proposed land use designation changes and new development, consistent with the region's Clean Air Plan and State law.

MS-10.3 Promote the expansion and improvement of public transportation services and facilities, where appropriate, to both encourage energy conservation and reduce air pollution.

MS-10.5 In order to reduce vehicle miles traveled and traffic congestion, require new development within 2,000 feet of an existing or planned transit station to encourage the use of public transit and minimize the dependence on the automobile through the application of site design guidelines and transit incentives.

MS-10.7 Encourage regional and statewide air pollutant emission reduction through energy conservation to improve air quality.

MS-10.11 Enforce the City's wood-burning appliance ordinance to limit air pollutant emissions from residential and commercial buildings.

MS-10.13 As a part of City of San José Sustainable City efforts, educate the public about air polluting household consumer products and activities that generate air pollution. Increase public awareness about the alternative products and activities that reduce air pollutant emissions.

Applicable Goals – Toxic Air Contaminants

Goal MS-11 Minimize exposure of people to air pollution and toxic air contaminants such as ozone, carbon monoxide, lead, and particulate matter.

Applicable Policies – Toxic Air Contaminants

MS-11.2 For projects that emit toxic air contaminants, require project proponents to prepare health risk assessments in accordance with BAAQMD-recommended procedures as part of environmental review and employ effective mitigation to reduce possible health risks to a less than significant level. Alternatively, require new projects (such as, but not limited to, industrial, manufacturing, and processing facilities) that are

sources of TACs to be located an adequate distance from residential areas and other sensitive receptors.

MS-11.4 Encourage the installation of appropriate air filtration at existing schools, residences, and other sensitive receptor uses adversely affected by pollution sources.

MS-11.5 Encourage the use of pollution absorbing trees and vegetation in buffer areas between substantial sources of TACs and sensitive land uses.

Actions – Toxic Air Contaminants

MS-11.6 Develop and adopt a comprehensive Community Risk Reduction Plan that includes: baseline inventory of toxic air contaminants (TACs) and particulate matter smaller than 2.5 microns (PM2.5), emissions from all sources, emissions reduction targets, and enforceable emission reduction strategies and performance measures. The Community Risk Reduction Plan will include enforcement and monitoring tools to ensure regular review of progress toward the emission reduction targets, progress reporting to the public and responsible agencies, and periodic updates of the plan, as appropriate

MS-11.7 Consult with BAAQMD to identify stationary and mobile TAC sources and determine the need for and requirements of a health risk assessment for proposed developments.

MS-11.8 For new projects that generate truck traffic, require signage which reminds drivers that the State truck idling law limits truck idling to five minutes.

Applicable Goals – Objectional Odors

Goal MS-12 Minimize and avoid exposure of residents to objectionable odors.

Applicable Policies – Objectional Odors

MS-12.1 For new, expanded, or modified facilities that are potential sources of objectionable odors (such as landfills, green waste and resource recovery facilities, wastewater treatment facilities, asphalt batch plants, and food processors), the City requires an analysis of possible odor impacts and the provision of odor minimization and control measures as mitigation.

Applicable Goals – Construction Air Emissions

Goal MS-13 Minimize air pollutant emissions during demolition and construction activities.

Applicable Policies – Construction Air Emissions

MS-13.1 Include dust, particulate matter, and construction equipment exhaust control measures as conditions of approval for subdivision maps, site development and planned development permits, grading permits, and demolition permits. At minimum, conditions shall conform to construction mitigation measures

recommended in the current BAAQMD CEQA Guidelines for the relevant project size and type.

Applicable Actions – Construction Air Emissions

MS-13.4 Adopt and periodically update dust, particulate, and exhaust control standard measures for demolition and grading activities to include on project plans as conditions of approval based upon construction mitigation measures in the BAAQMD CEQA Guidelines.

Downtown Strategy 2040 Plan

The San José Downtown Strategy (DTS) 2040 Plan[9] is an urban design plan that guides development activities planned within the Downtown area. This strategy would increase the amount of new commercial office by an additional three million sf (approximately 10,000 jobs with the new total being 14.2 million sf of commercial by the year 2040. The residential capacity would be increased up to 4,360 units. The amount of new retail development (1.4 million sf) and hotel room (3,600 rooms) capacities of the DTS 2000 would be maintained. The integrated Final Environmental Impact Report was published December 2018.

The DTS identified less-than-significant construction period emissions if development projects are in conformance with 2017 BAAQMD CEQA Guidelines, GP Policy MS-13.1, and current City requirements that include various levels of construction emissions control measures. All projects are required to implement the following control measures:

City requirements, all projects will be required to implement the following control measures:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- 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.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.

[9] City of San José, *Downtown Strategy 2040 FILE NO. PP15-102* , Web: https://www.sanjoseca.gov/your-government/departments/planning-building-code-enforcement/planning-division/environmental-planning/environmental-review/active-eirs/downtown-strategy-2040#:~:text=The%20proposed%20Downtown%20Strategy%202040,Plan%204%2DYear%20Review%20recommendations.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Future projects developed under the DTS that incorporate these measures and are below the screening levels would not result in a significant impact related to construction emissions of regional criteria pollutants. Projects that exceed the screening levels would be required to complete additional project level analysis of construction-related emissions of criteria pollutants and may require additional measures to ensure that construction emissions would not exceed the threshold for average daily emissions.

Operational emissions of regional criteria air pollutants with measures included to reduce emissions under the DTS were identified as significant and unavoidable. To reduce operational emissions associated with vehicle travel, future development will be required to implement a transportation demand management (TDM) program, consistent with the Downtown Transportation Plan. The TDM programs may incorporate, but would not be limited to, the following Transportation Control Measures (TCMs):

- Rideshare Measures: Implement carpool/vanpool program (e.g., carpool ride matching for employees, assistance with vanpool formation, provision of vanpool vehicles, etc.)
- Transit Measures:
- Construct transit facilities such as bus turnouts/bus bulbs, benches, shelters, etc.
- Design and locate buildings to facilitate transit access (e.g., locate building entrances near transit stops, eliminate building setbacks, etc.)
- Services Measures:
- Provide on-site shops and services for employees, such as cafeteria, bank/ATM, dry cleaners, convenience market, etc.;
- Provide on-site childcare or contribute to off-site childcare within walking distance.
- Shuttle Measures:
- Establish mid-day shuttle service from work site to food service establishments/ commercial areas;
- Provide shuttle service to transit stations/multimodal centers
- Parking Measures:
- Provide preferential parking (e.g., near building entrance, sheltered area, etc.) for carpool and vanpool vehicles;
- Implement parking fees for single occupancy vehicle commuters;
- Implement parking cash-out program for employees (i.e., non-driving employees receive transportation allowance equivalent to value of subsidized parking);
- Bicycle and Pedestrian Measures:
- Provide secure, weather-protected bicycle parking for employees;

- Provide safe, direct access for bicyclists to adjacent bicycle routes;
- Provide showers and lockers for employees bicycling or walking to work;
- Provide secure short-term bicycle parking for retail customers or non-commute trips;
- Provide direct, safe, attractive pedestrian access from Planning Area to transit stops and adjacent development;
- Other Measures:
- Implement compressed work week schedule (e.g., 4 days/40 hours, 9 days/80 hours);
- Implement home-based telecommuting program.

During project-level supplemental review of future individual development projects, the measures will be evaluated for consistency with the DTS 2040 and General Plan policies. All feasible and applicable measures will be required as part of project design or as conditions of approval.

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. Note that the DTS Plan Draft Environmental Impact Report (DEIR) evaluated traffic-related emissions of criteria air pollutants (and their precursors) from planned development that includes the Proposed Project. Stationary source operational emissions would still be required to be analyzed. Operational emissions from the Proposed Project are predicted in this assessment for informational purposes only.

Table 1. BAAQMD 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	*Evaluated in DTS Strategy DEIR*	
NO_x	54		
PM_{10}	82 (Exhaust)		
$PM_{2.5}$	54 (Exhaust)		
CO	Not Applicable		
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 µg/m^3	0.8 µg/m^3	
Odor			
5 confirmed complaints per year averaged over 3 years			

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

Source: Bay Area Air Quality Management District, 2017

AIR QUALITY IMPACTS AND MITIGATION MEASURES

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

BAAQMD is the regional agency responsible for overseeing compliance with State and Federal laws, regulations, and programs within the San Francisco Bay Area Air Basin (SFBAAB). BAAQMD, with assistance from the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC), prepares and implements specific plans to meet the applicable laws, regulations, and programs. The most recent and comprehensive of which is the *Bay Area 2017 Clean Air Plan*.[10] The primary goals of the Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions and protect the climate. The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality and GHG impacts. In formulating compliance strategies, BAAQMD relies on planned land uses established by local general plans. Land use planning affects vehicle travel, which, in turn, affects region-wide emissions of air pollutants and GHGs.

The 2017 Clean Air Plan, adopted by BAAQMD in April 2017, includes control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. Plans must show consistency with the control measures listed within the Clean Air Plan. At the project-level, there are no consistency measures or thresholds. The proposed project would not conflict with the latest Clean Air planning efforts since 1) the project is included in the adopted San José Downtown Strategy (DTS) 2040 Plan, 2) project would have construction and operational emissions below the BAAQMD thresholds (see Impact 2 below), 3) the project would be considered urban infill, 4) the project would be located near employment centers, 5) the project would be located near transit with regional connections.

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

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

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.

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

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.[11] 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 Inputs

Land Use Inputs

The proposed project land uses[12] were entered into CalEEMod as described in Table 2.

Table 1. Summary of Project Construction Land Use Inputs

Project Land Uses	Size	Units	Square Feet	Acreage
General Office Building	1,375.03	1,000 Square Feet	1,375,028	2.8
Regional Shopping Center	58.61	1,000 Square Feet	58,606	
Enclosed Parking with Elevator	1,227	Parking Spaces	528,984	

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 CalEEMod model generates a default set of construction assumptions for "typical construction site scenarios"; however, these are not appropriate for a project like this that involves demolition, excavation, and extensive vertical construction on a relatively small site.[13] For this project, the construction build-out scenario, including equipment list and schedule, were based on data provided by the project applicant. The project construction equipment worksheet 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 April 2023 and the project would be built out 6 days a week

[11] See CARB's EMFAC2021 Emissions Inventory at https://arb.ca.gov/emfac/emissions-inventory

[12] The project land uses have been updated since this analysis. The office square footage would decrease to 1,319,340-sf and the retail square footage would increase to 60,430-sf, for a total building net reduction of 53,864-sf. Also, the number of parking spaces increased from 1,227 to 2,804, but the parking use square footage would not change. Construction activities (i.e., schedule, equipment quantities, hours used) would not change with the new project land uses. Construction criteria pollutant emissions and construction community risk impacts would decrease slightly from these land uses changes. The larger, more conservative scenario was assessed in this analysis and impacts due to the project changes would be slightly less but not change the impact findings.

[13] SCAQMD. 2005. S*ample Construction Scenarios for Projects Less than Five Acres in Size* February. Note that this is the supporting report used to develop CalEEMod default construction inputs (see Appendix E – Technical Source Documentation of the CalEEMod User's Guide).

over a period of approximately 42 months or 1,035 construction workdays. The earliest year of operation was assumed to be 2027.

Construction 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. 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 defaults, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1 and 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 (demolition material export and soil import/export). Since CalEEMod does not address cement or asphalt 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 emission rates from the years 2023-2026 for Santa Clara County were used. Table 3 provides the traffic inputs that were combined with the EMFAC2021 emission database to compute vehicle emissions.

Table 2. 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 25% LDT1 25% LDT2	50% MHDT 50% HHDT	100% HHDT	
Trip Length (miles)	10.8	7.3	20.0 (Demo/Soil) 7.3 (Cement/Asphalt)	CalEEMod default distance with 5-min truck idle time.
Demolition	60	-	532	58,362-sf of existing building demolition and 120,000 tons of pavement demolition. Default worker trips.
Site Preparation	650	-	-	CalEEMod default worker trips.
Grading	3,546	-	36,358	290,867-cy of export soil volumes. CalEEMod default worker trips.
Trenching	750	-	2,240	1,120 cement truck round trips. CalEEMod default worker trips.
Exterior Construction	306,450	144,900	17,958	8,979 cement truck round trips. CalEEMod default worker and vendor trips.
Interior Construction	50,048	-	-	CalEEMod default worker trips.
Sitework	2,507	-	400	200 cement truck round trips. CalEEMod default worker trips.

Notes: [1] Based on 2023-2026 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 unmitigated 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 unmitigated annualized project construction emissions would not exceed the BAAQMD significance thresholds during any year of construction.

Table 3. Construction Period Emissions - Unmitigated

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Construction Emissions Per Year (Tons)				
2023	0.20	1.72	0.10	0.05
2024	0.30	2.76	0.15	0.09
2025	5.53	3.55	0.17	0.11
2026	2.56	1.16	0.07	0.04
Average Daily Construction Emissions Per Year (pounds/day)				
2023 (234 construction workdays)	1.73	14.68	0.87	0.47
2024 (314 construction workdays)	1.90	17.57	0.95	0.54
2025 (313 construction workdays)	35.33	22.71	1.11	0.70
2026 (174 construction workdays)	29.46	13.30	0.79	0.41
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. The DTS requires control measures to implement the standard BAAQMD CEQA Air Quality Guidelines best management practices to control dust and exhaust during construction. However, enhanced measures to control dust are required for this project's community health risk impact. *Mitigation Measure AQ-1 would implement BAAQMD's standard and enhanced best management practices*.

Mitigation Measure AQ-1: Implement BAAQMD-Recommended Standard and Enhanced Measures to Control Particulate Matter Emissions during Construction.

Measures to reduce fugitive dust (i.e., $PM_{2.5}$) emissions from construction are recommended to and ensure that health impacts to nearby sensitive receptors are minimized. During any construction period ground disturbance, the applicant shall ensure that the project contractor implements both basic and additional measures to control dust and exhaust. Implementation of the dust control measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. The contractor shall implement the following enhanced best management practices:

1. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
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 mph.

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. All 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.
7. 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.
8. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
9. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
10. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
11. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
12. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
13. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.
14. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
15. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes. Clear signage shall be provided for construction workers at all access points.

Effectiveness of Mitigation Measure AQ-1

Mitigation Measure AQ-1 represents standard and enhanced mitigation measures that would achieve greater than an 80 percent reduction in on-site fugitive $PM_{2.5}$ emissions. These measures are consistent with recommendations in the BAAMQD CEQA Guidance for providing "best management practices" to control construction emissions.

Operational Period Emissions

The impact of operational emissions was addressed in the DTS DEIR and found to be significant and unavoidable for the entire plan. Emissions from the project were computed for informational purposes. Operational air emissions from the project would be generated primarily from the project generator and autos driven by employees and customers. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are typical emissions from

these types of uses. CalEEMod was used to estimate emissions from operation of the proposed project assuming full build-out.

CalEEMod Inputs

Land Uses

The project land uses were entered into CalEEMod as described above for the construction period modeling.

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest full year of operation would be 2027 if construction begins in 2023. Emissions associated with build-out later than 2027 would be lower.

Traffic Information

CalEEMod allows the user to enter specific vehicle trip generation rates. Therefore, the project-specific daily trip generation rate provided by the traffic consultant was entered into the model.[14] The project would produce approximately 10,707 net daily trips when considering the *Location Based Reduction* adjustments applied in the traffic analysis.[15] The daily trip generation was calculated using the size of the project and the adjusted total automobile trips. The Saturday and Sunday trip rates were adjusted by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips to the default weekday rate with the project-specific daily weekday trip rate. The default trip lengths and trip types specified by CalEEMod were used.

The project would be required to implement a TDM program consistent with the Downtown Transportation Plan. The project's proposed TDM is targeted to reduce vehicles miles travelled (VMT) and trips by 14 percent.[16] Some of the TDM measures required to reduce trips and VMT include commute trip reduction marketing/education, subsidized or discounted transit program, and telecommuting and alternative work schedule program. The 14 percent TDM VMT reduction was applied to the CalEEMod output of operational mobile emissions.

[14] Email correspondence with Carolyn Neer, Project Manager, David J. Powers & Associates, Inc., September 13, 2021, Attachment: *20210909_Valley_Title_Trip_Gen.pdf.*

[15] Due to the project land use changes, the daily trip generation has also changed since this analysis. The project's daily trips would be reduced from 10,707trips to 10,390 trips. Operational criteria pollutant emissions would decrease slightly from this project daily trip reduction. The larger, more conservative scenario was assessed in this analysis and impacts due to the project changes would be slightly less but not change the impact findings.

[16] Email correspondence with Carolyn Neer, Project Manager, David J. Powers & Associates, Inc., November 4, 2021, Attachment: *SJ VMT Output.pdf*

EMFAC2021 Adjustment

The vehicle emission factors and fleet mix used in CalEEMod are based on EMFAC2014, which is an older CARB emission inventory for on road and off road mobile sources. Since the release of CalEEMod Version 2020.4.0, new emission factors have been produced by CARB. EMFAC2021 became available for use in January 2021. It includes the latest data on California's car and truck fleets and travel activity. The CalEEMod vehicle emission factors and fleet mix were updated with the emission rates and fleet mix from EMFAC2021, which were adjusted with the CARB EMFAC off-model adjustment factors. On road emission rates from 2027 Santa Clara County were used (See *Attachment 3*). More details about the updates in emissions calculation methodologies and data are available in the EMFAC2021 Technical Support Document.[17]

Consumer Product Adjustment

CalEEMod computes emissions associated with consumer products for all land uses, regardless of their types.[18] However, the emission rate in the model has not been updated since the development of CalEEMod in 2011 that used data published in 2008. ROG emissions from consumer products are forecasted to decrease, as shown in the CARB county emissions forecasts for 2010 through 2030. A factor to adjust the ROG consumer was developed based on the change in the per population ROG consumer emissions between 2008 and 2030. Essentially, the 2027 rate is anticipated to be 80 percent of the 2008 rate that CalEEMod uses.

Climate Smart San José

Climate Smart San José is a plan to reduce air pollution, save water, and create a stronger and healthier community. The City approved goals and milestones in February 2018 to ensure the City can substantially reduce GHG emissions through reaching the following goals and milestones:

- All new residential buildings will be Zero Net Carbon Emissions (ZNE) by 2020 and all new commercial buildings will be ZNE by 2030 (Note that ZNE buildings would be all electric with a carbon-free electricity source).
- San José Clean Energy (SJCE) will provide 100-percent carbon-free base power by 2021.
- One gigawatt of solar power will be installed in San José by 2040.
- 61 percent of passenger vehicles will be powered by electricity by 2030.

The California Energy Commission (CEC) updates the California Building Energy Efficiency Standards every three years, in alignment with the California Code of regulations. Title 24 Parts 6 and 11 of the California Building Energy Efficiency Standards and the California Green Building Standards Code (CALGreen) address the need for regulations to improve energy efficiency and combat climate change. The 2019 CAL Green standards include substantial changes intended to

[17] See CARB 2021: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-modeling-tools-emfac

[18] Per the CalEEMod User's Guide: "Consumer products are chemically formulated products used by household and institutional consumers, including, but not limited to, detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products"

increase the energy efficiency of buildings. For example, the code encourages the installation of solar and heat pump water heaters in low-rise residential buildings. The 2019 California Code went before City Council in October 2019 for approval, with an effective date of January 1, 2020. As part of this action, the City adopted a "reach code" that requires development projects to exceed the minimum Building Energy Efficiency requirements.[19] The City's reach code applies only to new residential and non-residential construction in San José. It incentivizes all-electric construction, requires increased energy efficiency and electrification-readiness for those choosing to maintain the presence of natural gas. The code requires that non-residential construction include solar readiness. It also requires additional EV charging readiness and/or electric vehicle service equipment (EVSE) installation for all development types.

Energy – Electricity

CalEEMod defaults for energy use were used, which include the 2019 Title 24 Building Standards. GHG emissions modeling includes those indirect emissions from electricity consumption. The electricity produced emission rate was modified in CalEEMod. CalEEMod has a default emission factor of 807.98 pounds of CO_2 per megawatt of electricity produced, which is based on San José Clean Energy (SJCE)'s 2021 emissions rate. This intensity factor was used in the model along with the assumption that the project would use electricity supplied by SJCE. SJCE would provide electricity that would be 100-percent carbon free by 2021 before the project becomes operational.[20] Electricity was assumed to be 100-percent carbon free in the model since this project would be operational post-2021. Electricity emissions only affect indirect emission of GHG.

Energy – Natural Gas

The City of San José passed an ordinance in December 2020 that prohibits the use of natural gas infrastructure in new residential, office, and most retail-type buildings.[21] This ordinance applies to any new construction starting August 1, 2021. Natural gas use for the office land use was set to zero and assigned to electricity use. Natural gas use was assumed for the retail use as a restaurant (which is allowed to use natural gas) could occupy the "Market Hall" space.

Project Generator

The project proposes to include two stand-by emergency diesel generators along the S. 2nd Street façade on the first below-grade level. Each generator would be 2,500-kilowatts (kW) powered by a 3,674 horsepower (HP) diesel engine. The generators would be tested periodically and power the buildings in the event of a power failure. For modeling purposes, it was assumed that the generators would be operated primarily for testing and maintenance purposes. CARB and BAAQMD requirements limit these engine operations to 50 hours each per year of non-emergency operation. During testing periods, the engines would typically be run for less than one hour. The engines

[19] City of San José Transportation and Environmental Committee, *Building Reach Code for New Construction Memorandum,* August 2019.
[20] Kerrie Romanow and Rosalynn Hughey, City of San José, 2019. *Building reach Code for New Construction Memorandum*. August. Web: https://sanjose.legistar.com/LegislationDetail.aspx?ID=4090015&GUID=278596A7-1A2B-4248-B794-7A34E2279E85
[21] City of San Jose, 2020. "Expand Natural Gas Ban", December. Web: https://www.sanjoseca.gov/Home/Components/News/News/2210/4699

would be required to meet CARB and EPA emission standards and consume commercially available California low-sulfur diesel fuel. Additionally, the generators would have to meet BAAQMD BACT requirements for IC Engine-Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump sources. Based on the size of the proposed generators, these include emission limits similar to U.S. EPA Tier 4 engines. The generators' emissions, including BACT engine requirements, were modeled using CalEEMod.

Project Cooling Towers

The project would include three cooling towers on Level 20 of the proposed building. Particulate matter emissions from evaporative cooling can occur and are a result of evaporation of liquid water entrained in the discharge air stream and carried out of the tower as "drift" droplets that contain dissolved solids in the water. Drift droplets that evaporate can produce small particulate matter (i.e., PM_{10} and $PM_{2.5}$) emissions. These emissions are generated when the drift droplets evaporate and leave the particulate matter formed by crystallization of dissolved solids.

PM_{10} and $PM_{2.5}$ emissions from evaporative cooling were calculated based on a worst-case assumptions including use of evaporative cooling for 100 percent of the time, a water flow rate of 3,680 gallons per minute (gpm), use of 0.005 percent drift eliminators, a total dissolved solids (TDS) concentration of 1,500 parts per million (ppm) in the recirculating water.[22] Based on a calculated total drift rate, recirculating water TDS concentration of 1,500 ppm, and PM fractions based on SCAQMD,[23] the PM_{10} emissions were calculated as 2.3 pounds per day and annual emissions of 0.4 tons per year. $PM_{2.5}$ emissions were calculated as 1.4 pounds per day and annual emissions of 0.3 tons per year. The cooling towers are not expected to produce emissions of volatile organic compounds (VOCs) or other criteria pollutants.[24] Cooling tower particulate matter emissions are included in *Attachment 4*.

Wastewater Treatment Plant

Wastewater treatment for the proposed project would be provided through a combination of the City's municipal wastewater service and an independent wastewater treatment facility located in the adjacent Bo Town project to the south, across E. San Salvador Street. The treated recycled water would be used for non -potable uses including toilet flushing, irrigation, and temperature regulation within the cooling towers. If the Bo Town project is not approved, 100 percent of the proposed project's wastewater would be conveyed through the municipal sewer system and treated at the City's Facility. The wastewater treatment plant would be electrically operated and would therefore not be a source of criteria pollutant emissions.

[22] Recirculating water flow rate and maximum TDS concentration provided by the applicant.
[23] South Coast AQMD, *Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM2.5 Significance Thresholds, Appendix A.* October 2006. Web: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/particulate-matter-(pm)-2.5-significance-thresholds-and-calculation-methodology/final_pm2_5methodology.pdf
[24] South Coast AQMD, *Guidelines for Calculating Emissions from Cooling Towers*, November 2019. Web: https://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/guidelines-for-calculating-emissions-from-cooling-towers---november-2017-final.pdf?sfvrsn=12

Existing Uses

The existing site consist of an office building and associated parking lot. A CalEEMod model run was developed to compute emissions from use of the existing land uses as if it were operating in 2027. Inputs for the existing modeling scenario included 58,362-sf entered as "General Office Building" and 95,000-sf entered as "Parking Lot". The existing trip generation rates and other inputs were applied to the existing modeling in the same manner described for the proposed project. Historical energy usage was applied.

Summary of Computed Operational Emissions

Annual emissions were predicted using CalEEMod and daily emissions were estimating assuming 365 days of operation. Table 5 shows net average daily operational emissions of ROG, NO_X, total PM_{10}, and total $PM_{2.5}$ during operation of the project. The operational period emissions would not exceed the BAAQMD significance thresholds.

Table 5. Operational Period Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2027 Annual Project Operational Emissions (*tons/year*)	9.65	2.82	5.84	1.49
Cooling Tower Emissions (*tons/year*)	--	--	0.42	0.25
2027 Existing Use Emissions (*tons/year*)	0.43	0.15	0.25	0.06
Net Annual Emissions (*tons/year*)	9.22	2.67	6.01	1.68
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Threshold?	*No*	*No*	*No*	*No*
2027 Daily Project Operational Emissions (*pounds/day*)[1]	50.52	14.62	32.95	9.18
BAAQMD Thresholds (pounds/day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	*No*	*No*	*No*	*No*
Notes: [1]Assumes 365-day operation.				

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

Project impacts related to increased community risk can occur either by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity or by significantly exacerbating existing cumulative TAC impacts. This project would introduce new sources of TACs during construction (i.e., on-site construction and truck hauling emissions) and operation (i.e., stationary and mobile sources).

Project construction activity would generate dust and equipment exhaust that would affect nearby sensitive receptors. The project would also include the installation of stand-by generators powered by diesel engines, cooling towers, and would generate some traffic consisting of mostly light-duty vehicles, which would produce TAC and air pollutant emissions.

Project impacts to existing sensitive receptors were addressed for temporary construction activities and long-term operational conditions. There are also several sources of existing TACs and localized air pollutants in the vicinity of the project. The impact of the existing sources of TAC was also assessed in terms of the cumulative risk which includes the project contribution.

Community Risk Methodology for Construction and Operation

Community risk impacts were addressed by predicting increased cancer risk, the increase in annual $PM_{2.5}$ concentrations and computing the Hazard Index (HI) for non-cancer health risks. The risk impacts from the project are the combination of risks from construction and operation sources. These sources include on-site construction activity, construction truck hauling, project generators, and increased traffic from the project. To evaluate the increased cancer risks from the project, a 30-year exposure period was used, per BAAQMD guidance,[25] with the sensitive receptors being exposed to both project construction and operation emissions during this timeframe.

The project increased cancer risk is computed by summing the project construction cancer risk and operation cancer risk contributions. Unlike, the increased maximum cancer risk, the annual $PM_{2.5}$ concentration and HI values are not additive but based on the annual maximum risk for the entirety of the project. The project maximally exposed individual (MEI) is identified as the sensitive receptor that is most impacted by the project's construction and operation.

The methodology for computing community risks impacts is contained in *Attachment 1*. This involved the calculation of TAC and $PM_{2.5}$ emissions, dispersion modeling of these emissions, and computations of cancer risk and non-cancer health effects.

Modeled Sensitive Receptors

Receptors for this assessment included locations where sensitive populations would be present for extended periods of time (i.e., chronic exposures). This includes all existing childcare and residences to the east and surrounding the project site, as shown in Figure 1. Residential receptors are assumed to include all receptor groups (i.e., third trimester, infants, children, and adults) with almost continuous exposure to project emissions. Community risks were also computed for infants and children at the YWCA Childcare Center (ages 0-6) and students at the Notre Dame High School (ages 14-18).

Community Risks from Project Construction

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust air pollutant emissions would not be considered to contribute substantially to existing or projected air quality violations. Construction exhaust emissions may still pose health risks for sensitive receptors such as surrounding residents. The primary community risk impact issue associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[26] This assessment included dispersion modeling to predict the offsite and onsite concentrations resulting from project construction, so that increased cancer risks and non-cancer health effects could be evaluated.

[25] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines.* December 2016.
[26] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

Construction Emissions

The CalEEMod and EMFAC2021 models 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 of 0.17 tons (337 pounds). The on-road emissions are a result of haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. A trip length of half a mile was used to represent vehicle travel while at or near the construction site. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod as 0.12 tons (244 pounds) for the overall construction period.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict DPM and $PM_{2.5}$ concentrations at sensitive receptors (childcare, residences, high school) 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.[27] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

Construction Sources

Combustion equipment DPM exhaust emissions were modeled as a series of point sources with a nine-foot release height (construction equipment exhaust stack height) placed at 23 feet (7 meter) intervals throughout the construction site. This resulted in 234 individual point sources being used to represent mobile equipment DPM exhaust emissions in the construction area, with DPM emissions occurring throughout the project construction site. In addition, the following stack parameters were used: a vertical release, a stack diameter of 2.5 inches, an exhaust temperature of 918˚F, and an exit velocity of 309 feet per second. Since these are point sources, plume rise is calculated by the AERMOD dispersion model. Emissions from vehicle travel on- and off-site were also distributed among the point sources throughout the site. The locations of the point sources used for the modeling are identified in Figure 1.

For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 7 feet (2 meters) was used for the area source. 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.

[27] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.

AERMOD Inputs and Meteorological Data

Since there are a number of tall buildings adjacent to or in close proximity to the project construction site, the effects of building downwash on the construction equipment exhaust plumes were included in the modeling analysis. The locations of the point sources used for the modeling and the buildings that were evaluated for potential downwash effects are identified in Figure 1.

The modeling used a five-year meteorological data set (2013-2017) from the San José Airport prepared for use with the AERMOD model by the BAAQMD. Construction emissions were modeled as occurring between 7:00 a.m. to 10:00 p.m. Monday through Friday and 7:00 a.m. to 7:00 p.m. on Saturday per the project applicant's construction schedule. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2023-2026 period were computed by the model. DPM and $PM_{2.5}$ concentrations were computed at nearby sensitive receptor locations. Receptor heights of 5 feet (1.5 meters), 15 feet (4.5 meters), 20 feet (6.1 meters), 25 feet (7.6 meters), 30 feet (9.1 meters), and 35 feet (10.7 meters) were used to represent the breathing heights of residents on the first and second residential levels in nearby mixed-use commercial/residential buildings, apartment buildings, and single-family homes, respectively.[28] A receptor height of 3 feet (1 meter) was used to represent the breathing height of infants and children at the childcare and high school.

Summary of Construction Community Risk Impacts

The increased cancer risk calculations were based on applying the BAAQMD recommended age sensitivity factors to the TAC concentrations, as described in *Attachment 1*. 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. Infants and children at the childcare center were assumed to be between the ages of 0 and 6 years old and students at the high school were assumed to be between the ages of 14 and 18 years old. The infant (ages 0 through 2 years old) and child (ages 2 through 16 years old) cancer risk parameters were used to calculate the increased cancer risk for the childcare students and the child cancer risk parameters were used to calculate the increased cancer risk for the high school students.

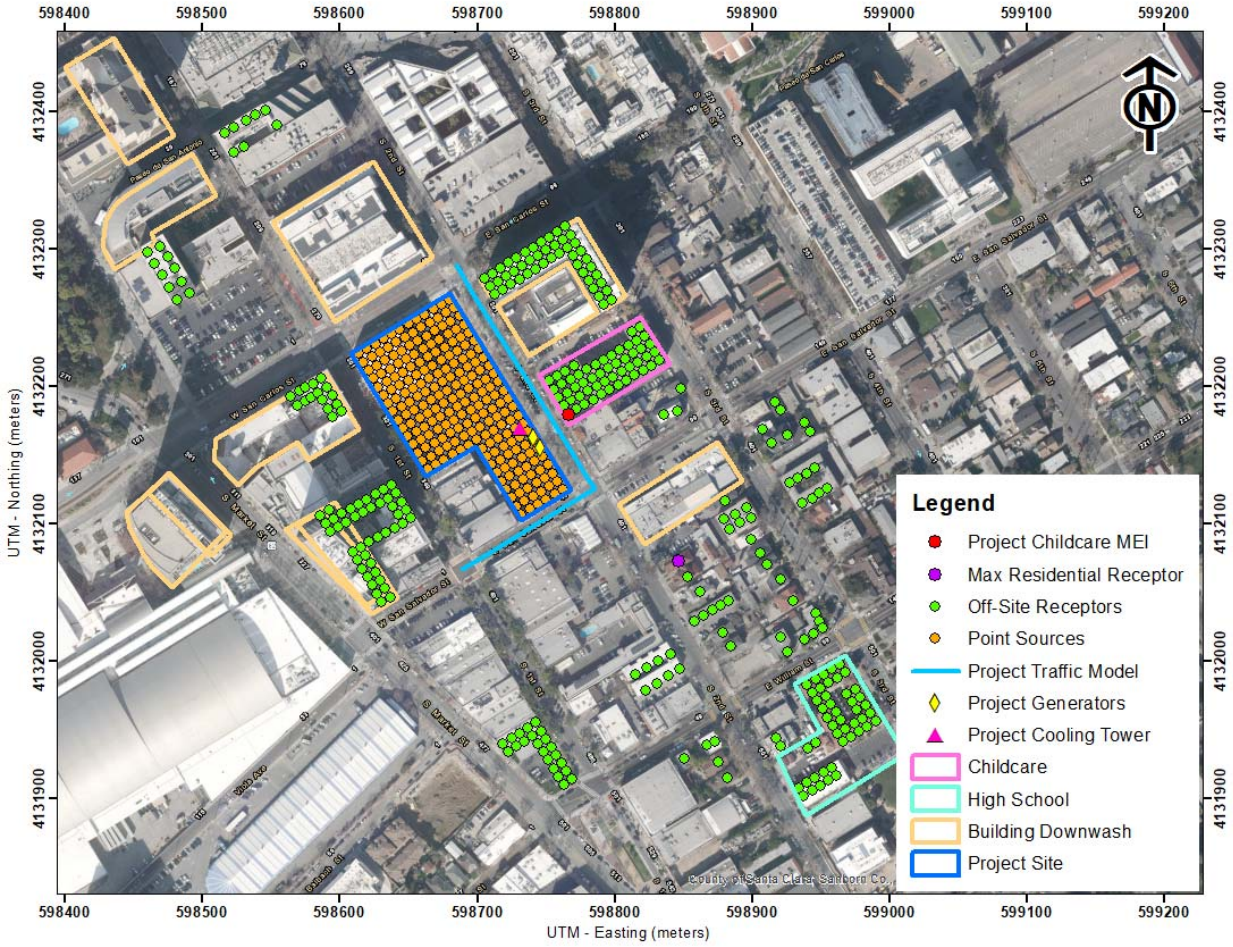
The maximum modeled annual $PM_{2.5}$ concentration was calculated based on combined exhaust and fugitive concentrations. The maximum computed HI values was based on the ratio of the maximum DPM concentration modeled and the chronic inhalation reference exposure level of 5 $\mu g/m^3$.

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 to find the MEI. Results of this assessment indicated that the construction MEI was located on the first floor (3 feet above ground) of the YWCA Childcare Center to the east of the project site opposite S. 2nd Street. The maximum cancer risk occurred when exposure begins in 2024. Modeling results also identified the residential receptor with the maximum construction impacts, which were less than that of the

[28] 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

childcare MEI. The location of the childcare MEI, residential maximum receptor, and nearby sensitive receptors are shown in Figure 1. Table 6 lists the community risks from construction at the location of the childcare MEI and residential maximum receptor. *Attachment 4* to this report includes the emission calculations used for the construction modeling and the cancer risk calculations.

Figure 1. Locations of Project Construction Site, DPM Point Sources, Project Traffic, Project Generators and Cooling Towers, Buildings Evaluated for Downwash Effects, and Maximum TAC Location (MEI)



Community Risks from Project Operation – Traffic and Stationary Sources

Operation of the project would have long-term emissions from mobile sources (i.e., traffic) and stationary sources (i.e., generators and cooling towers). While these emissions would not be as intensive at or near the site as construction activity, they would contribute to long-term effects to sensitive receptors.

The wastewater treatment facility would be limited to assembly of pre-manufactured wastewater treatment plant components within the Bo Town project and not the proposed project. The plant

would be an enclosed system and also be electrically operated. Therefore, the plant would not be a source of project construction or operational TAC emissions.

Project Operational Traffic

An analysis was conducted of the impacts of TACs and $PM_{2.5}$ from local roadways increase in traffic due to the project. The project would generate 10,707 net daily trips.[29] A majority of these trips would be from light-duty, gasoline vehicles (i.e., passenger cars). To address the added community risks, the impact from this traffic was assessed using the CT-EMFAC 2017 emissions model, AERMOD dispersion model and cancer risk calculations following BAAQMD methodology described in *Attachment 1*. Figure 1 shows the modeled roadway segment.

Traffic Emissions

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ roadway emissions in the project area using the Caltrans version of the EMFAC2017 emission model, known as CT-EMFAC2017.[30] 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),[31] traffic mix assigned by CT-EMFAC2017 for the county, year of analysis (2027 – project operational year), and season (annual).

Project operation was assumed to begin in 2027 or thereafter. To calculate the increased cancer risk from increased traffic volumes due to the project traffic, the community risks were adjusted for exposure duration to account for the childcare MEI being exposed to construction for the first 3 years (maximum cancer risk occurred when exposure begins in 2024) of the 6-year period (childcare ages from 0-6 years old). The exposure duration from roadway traffic was adjusted for 3 years of exposure (2027-2029). In order to estimate TAC and $PM_{2.5}$ emissions over the exposure period for calculating increased cancer risks to exiting childcare students from project traffic, the CT-EMFAC2017 model was used to develop vehicle emission factors for the year 2027. Year 2027 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated (3 years) from the roadway traffic, since, as discussed above, overall vehicle emissions, and in particular diesel truck emissions will decrease in the

[29] Email correspondence with Carolyn Neer, Project Manager, David J. Powers & Associates, Inc., September 13, 2021, Attachment: *20210909_Valley_Title_Trip_Gen.pdf*.
[30] Note that Caltrans has not yet updated their version of EMFAC to incorporate EMFAC2021 emission rates for traffic modeling studies.
[31] 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

future. The exposure duration from roadway traffic was adjusted for 27 years of exposure at the residential maximum receptor.

Traffic Dispersion Modeling Inputs

A conservative analysis was conducted based on project driveway locations where all project traffic emissions from on- and near-site travel were assumed to be divided evenly along S. 2nd Street and E. San Salvador Street. These roadways are closest to the childcare MEI and nearby sensitive receptors. The project's trip generation provided by the traffic consultant of 10,707 net daily trips was used to assess project traffic impacts. [32] The average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,[33] which were then applied to the trip volumes to obtain estimated hourly traffic volumes and emissions for the roadways. For all hours of the day, the average speed of 20 mph on both roadways was assumed for all vehicles based on posted speed limit signs on the roadways.

Dispersion Modeling

Operational traffic roadway travel emissions were modeled with the AERMOD model using a series of adjacent area sources along a line (line area sources) to represent traffic emissions on the roadway segment where all of the project traffic would occur. Five years (2013-2017) of hourly meteorological data from the San José Airport prepared for use with the AERMOD model by the BAAQMD, were used for the modeling. TAC and $PM_{2.5}$ concentrations for 2027 were calculated by the model at the same sensitive receptor locations with the same receptor heights of 3 feet (1 meter) used for the construction health risk modeling at the MEI location and 5 feet (1.5 meter) at the residential maximum receptor.

Figure 1 shows the project roadway segments modeled, childcare MEI receptor location, and residential maximum receptor location used in the modeling. Table 6 lists the project roadway risks and hazards at the location of the childcare MEI and residential maximum receptor. The emission rates and roadway calculations used in the project impact analysis are shown in *Attachment 4*.

Project Operational Stand-By Diesel Generators

The project proposes to include two stand-by emergency diesel generators along the S. 2nd Street façade on the first below-grade level of the project building. Site plans show the generator rooms' exhaust stacks extend to the top of the first floor. Therefore, it was assumed that the generators emissions would be release near the top of the first floor along the boundaries of the building's generator rooms (see Figure 1). Each generator would be 2,500-kW powered by a 3,674-HP diesel engine.

[32] Email correspondence with Carolyn Neer, Project Manager, David J. Powers & Associates, Inc., September 13, 2021, Attachment: *20210909_Valley_Title_Trip_Gen.pdf*.
[33] The Burden output from EMFAC2007, a previous version of CARB's EMFAC model, was used for this since the current web-based version of EMFAC2021 does not include Burden type output with hour by hour traffic volume information.

Operation of a diesel generator would be a source of TAC emissions. The generators would be operated for testing and maintenance purposes, with a maximum of 50 hours per year of non-emergency operation under normal conditions. During testing periods, the engine would typically be run for less than one hour under light engine loads. The generator engines would be required to meet EPA emission standards and consume commercially available low sulfur diesel fuel. Additionally, the generators would have to meet BAAQMD BACT requirements for IC Engine-Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump sources. Based on the size of the proposed generator, these include emission limits similar to U.S. EPA Tier 4 engines. The emissions from the operation of the generators were calculated using the CalEEMod model.

These diesel engines would be subject to CARB's Stationary Diesel Airborne Toxics Control Measure (ATCM) and require permits from the BAAQMD, since it will be equipped with an engine larger than 50-HP. BACT requirements would apply to these generators that would limit DPM emissions. As part of the BAAQMD permit requirements for toxics screening analysis, the engine emissions will have to meet Best Available Control Technology for Toxics (BACT) and pass the toxic risk screening level of less than ten in a million. The risk assessment would be prepared by BAAQMD. Depending on results, BAAQMD would set limits for DPM emissions (e.g., more restricted engine operation periods). Sources of air pollutant emissions complying with all applicable BAAQMD regulations generally will not be considered to have a significant air quality community risk impact.

To obtain an estimate of potential cancer risks and $PM_{2.5}$ impacts from operation of the emergency generators, the U.S. EPA AERMOD dispersion model was used to calculate the maximum annual DPM concentration at off-site sensitive receptor locations (nearby childcare/school and residences). The same receptors, breathing heights, and BAAQMD San José International Airport meteorological data used in the construction dispersion modeling were used for the generator models. Stack parameters for modeling the generators were either based on project-specific generator parameters (i.e., engine size, exhaust gas flowrate, stack height, and exhaust gas temperature) or based on BAAQMD default parameters (stack diameter) for stand-by diesel generators if that project-specific information were not available.[34] Annual average DPM and $PM_{2.5}$ concentrations were modeled assuming that generator testing could occur at any time of the day (24 hours per day, 365 days per year).

To calculate the increased cancer risk from the generators at the childcare MEI, the cancer risks were also adjusted for exposure duration to account for the childcare MEI being exposed to construction for the first 3 years (maximum cancer risk occurred when exposure begins in 2024) of the 6-year period. The exposure duration was adjusted for 3 years of exposure for the childcare MEI and 27 years of exposure for the residential maximum receptor. Table 6 lists the community risks from stand-by diesel generators at the location of childcare MEI and residential maximum receptor. The emissions and health risk calculations for the proposed generators are included in *Attachment 4*.

[34] Bay Area Air Quality Management District, San Francisco Department of Public Health, and San Francisco Planning Department, 2012. *The San Francisco Community Risk Reduction Plan: Technical Support Document,* BAAQMD, December. Web: https://www.gsweventcenter.com/Appeal_Response_References/2012_1201_BAAQMD.pdf

Project Cooling Towers

The project would include three cooling towers on Level 20 of the proposed building. Particulate matter emissions from evaporative cooling can occur and are a result of evaporation of liquid water entrained in the discharge air stream and carried out of the tower as "drift" droplets that contain dissolved solids in the water. Drift droplets that evaporate can produce small particulate matter (i.e., PM_{10} and $PM_{2.5}$) emissions. These emissions are generated when the drift droplets evaporate and leave the particulate matter formed by crystallization of dissolved solids. The cooling towers are not powered by a diesel engine, so no DPM emissions would be produced.

For the health risk assessment, the $PM_{2.5}$ emissions from evaporative cooling were calculated based on a worst-case assumptions including use of evaporative cooling for 100 percent of the time, a water flow rate of 3,680 gallons per minute (gpm), use of 0.005 percent drift eliminators, a total dissolved solids (TDS) concentration of 1,500 parts per million (ppm) in the recirculating water.[35] Based on a calculated total drift rate, recirculating water TDS concentration of 1,500 ppm, and PM fractions based on SCAQMD,[36] the $PM_{2.5}$ emissions were calculated as 0.3 tons per year.

To obtain an estimate of potential $PM_{2.5}$ concentrations from operation of the cooling towers, the U.S. EPA AERMOD dispersion model was used to calculate the annual $PM_{2.5}$ concentration at off-site sensitive receptor locations (nearby childcare/school and residences). The same receptors, breathing heights, and BAAQMD San José International Airport meteorological data used in the construction dispersion modeling were used for the generator models. Volume source parameters for modeling the cooling tower were based on project-specific cooling tower parameters (i.e., length of side, release height, emission rate (flow rate, TDS, mist eliminator efficiency)). Annual $PM_{2.5}$ concentrations were modeled assuming that cooling tower would operate at any time of the day (24 hours per day, 365 days per year).

The annual $PM_{2.5}$ concentration were based on an annual maximum risk. Table 6 lists the community risks from cooling towers at the location of childcare MEI and residential maximum receptor. The particulate matter emissions for the proposed cooling towers are included in *Attachment 4*.

Cumulative Community Risks of all TAC Sources at Project MEI

The cumulative risk impacts from a project are the combination of construction and operation sources. These sources include on-site construction activity, project generators and cooling towers, and increased traffic from the project. The project impact is computed by adding the construction cancer risk for an infant/child to the increased cancer risk for the project operational conditions for the roadway, generators, and cooling towers at the MEI.

[35] Recirculating water flow rate and maximum TDS concentration provided by the applicant.
[36] South Coast AQMD, *Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM2.5 Significance Thresholds, Appendix A.* October 2006. Web: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/particulate-matter-(pm)-2.5-significance-thresholds-and-calculation-methodology/final_pm2_5methodology.pdf

For this project, the sensitive receptor identified in Figure 1 as the construction childcare MEI is also the project childcare MEI. Infants and children could be present at this site for up to 6 years. At this location, the childcare MEI would be exposed to 3 years of construction cancer risks (maximum cancer risk occurred when exposure begins in 2024) and 3 years of operational (includes traffic, stand-by generators, and cooling towers) cancer risks. The residential maximum receptor would be exposed to 27 years of operational cancer risk. The cancer risks from construction and operation of the project were summed together. Unlike, the increased maximum cancer risk, the annual $PM_{2.5}$ concentration and HI risks are not additive but based on an annual maximum risk for the entirety of the project.

Project risk impacts are shown in Table 6. The unmitigated maximum cancer risks and annual $PM_{2.5}$ concentration from construction activities at the project childcare MEI location would exceed the single-source significance thresholds. However, with the incorporation of the *Mitigation Measure AQ-1 and AQ-2*, the mitigated cancer risk and annual $PM_{2.5}$ concentration would no longer exceed the BAAQMD single-source significance thresholds. The cancer risk impacts at the residential maximum receptor would also exceed the single-source threshold, but with the implementation of *Mitigation Measure AQ-1 and AQ-2* would be reduced to below the threshold. The unmitigated non-cancer hazards at the childcare MEI from project construction and operation activities would be below the single-source significance threshold.

Table 6. Construction and Operation Risk Impacts at the Off-Site Receptors

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project YWCA Childcare Center MEI				
Project Construction (Years 0-3)	Unmitigated	**82.42 (infant)**	**0.84**	0.03
	Mitigated*	8.06 (infant)	0.09	<0.01
Project Traffic on S. 2nd and E. San Salvador Streets (Years 4-6)		0.14	0.04	<0.01
Project Generators, Two 2,500-kW, 3,674-HP (Years 4-6)		<0.01	<0.01	<0.01
Project Cooling Towers (Years 4-6)		-	0.01	-
Total/Maximum Project Impact (Years 0-6)	Unmitigated	**82.57 (infant)**	**0.84**	0.03
	Mitigated*	8.21 (infant)	0.09	<0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	***Yes***	***Yes***	*No*
	Mitigated*	*No*	*No*	*No*
Most Affected Nearby Residence – First Floor (1.5 meter) Receptor				
Project Construction (Years 0-3)	Unmitigated	**33.32 (infant)**	0.28	0.02
	Mitigated*	3.81 (infant)	0.05	<0.01
Project Traffic (Years 4-30)		0.23	0.04	<0.01
Project Generators (Years 4-30)		0.14	<0.01	<0.01
Project Cooling Towers (Years 4-30)		-	0.01	-
Unmitigated Total/Maximum Project (Years 0-30)	Unmitigated	**33.69 (infant)**	0.28	0.02
	Mitigated*	4.18 (infant)	0.05	<0.01
BAAQMD Single-Source Threshold		***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	Unmitigated	***Yes***	*No*	*No*
	Mitigated*	*No*	*No*	*No*

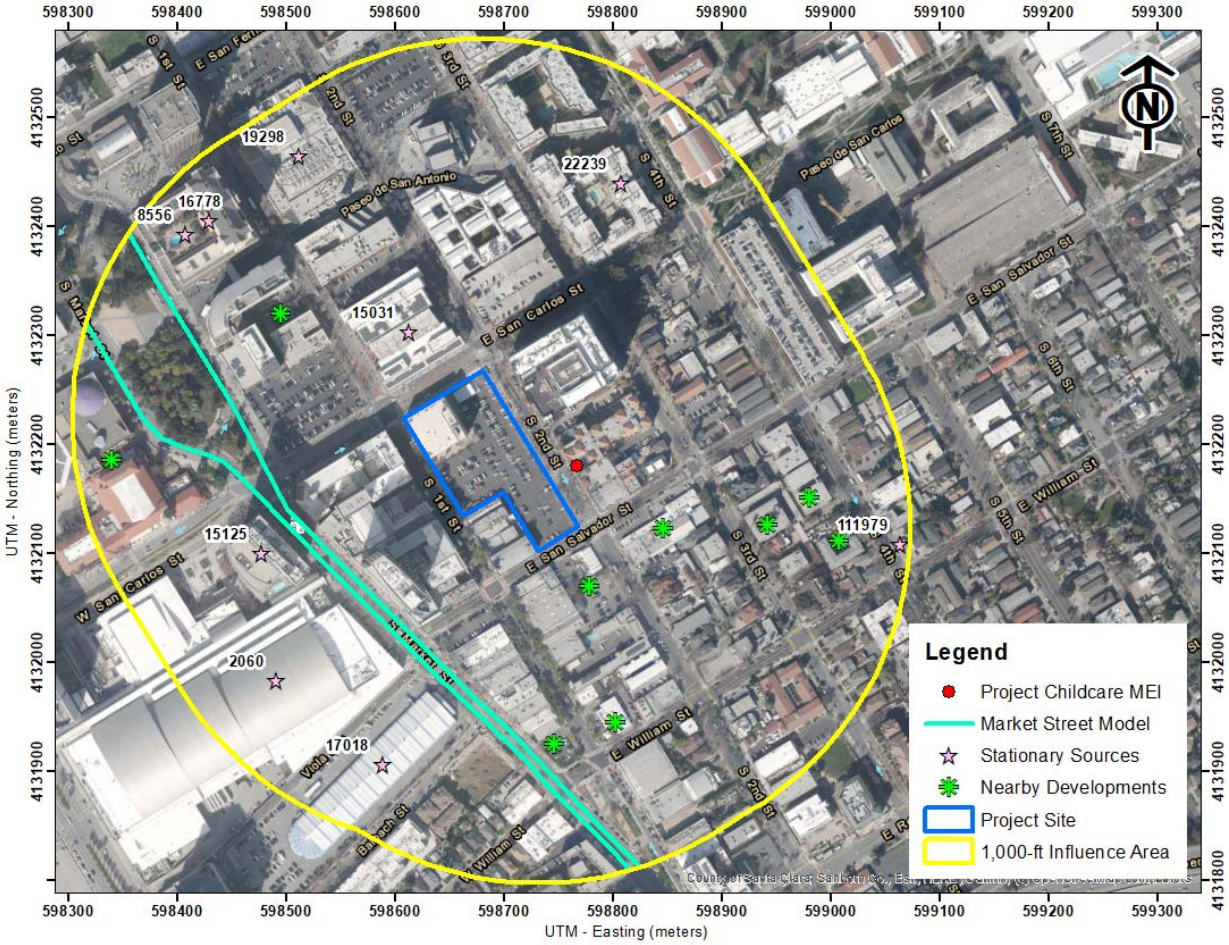
* Construction equipment with Tier 4 Final engines, electric cranes, and enhanced BMPs as Mitigation.

Cumulative Community Risks of all TAC Sources at the Off-Site Project Childcare 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 and based on provided traffic information indicates that traffic on S. Market Street 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 map website identified nine stationary sources with the potential to affect the project childcare MEI. In addition, there are several development projects whose construction would contribute to the cumulative risk. The risk impacts from these developments are included within the analysis. Figure 2 shows the location of the sources affecting the MEI. Community risk impacts from these sources upon the MEI reported in Table 7. 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 – S. Market Street

A refined analysis of potential health impacts from vehicle traffic on the S. Market Street 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 how community risk impacts are computed.

Traffic Emissions Modeling

The development of roadway emissions for traffic on S. Market Street was done in the same manner as the project roadway emissions above using CT-EMFAC2017. 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),[37] traffic mix assigned by CT-EMFAC2017 for the county, year of analysis (2023 – construction start year), and season (annual).

To estimate TAC and $PM_{2.5}$ emissions over the 6-year exposure period used for calculating the increased cancer risks for sensitive receptors at the childcare MEI, the CT-EMFAC2017 model was used to develop vehicle emission factors for the year 2023 (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 2023 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated since overall vehicle emissions, and in particular diesel truck emissions, will decrease in the future.

The ADT on S. Market Street was based on AM and PM peak-hour background traffic volumes for the nearby roadway provided by the project's traffic consultant.[38] Assuming a 1 percent per year increase, the predicted ADT on the roadway would be 18,508 vehicles. Average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,[39] 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 speed of 30 mph on the roadway was assumed for all vehicles based on posted speed limit signs on the roadway. Traffic speeds during the peak a.m. and p.m. periods were assumed to be 5 miles per hour slower (i.e., 25 mph) to account for downtown congestion and the amount of access in the area.

[37] 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

[38] Email correspondence with Carolyn Neer, Project Manager, David J. Powers & Associates, Inc., September 13, 2021, Attachment: *Valley_Title_FinalVolumes IR_updated 9-14-2021.xlsx.*

[39] 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.

Dispersion Modeling

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the U.S. EPA AERMOD dispersion model, which is recommended by the BAAQMD for this type of analysis.[40] TAC and $PM_{2.5}$ emissions from traffic on S. Market Street within about 1,000 feet of the project site was evaluated with the model. Emissions from vehicle traffic were modeled in AERMOD using a series of area sources along a line (line area sources), with line segments used to represent the northbound and southbound travel lanes 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 and heights. Annual TAC and $PM_{2.5}$ concentrations for 2023 from traffic on the roadway were calculated using the model. Concentrations were calculated at the project childcare MEI with receptor heights of 3 feet (1 meter) to represent the breathing heights on the first floor of the childcare center.

Computed Cancer and Non-Cancer Health Impacts

The cancer risk, $PM_{2.5}$ concentration, and HI impacts from S. Market Street on the project childcare MEI are shown in Table 7. Figure 2 shows the roadway links used for the modeling and receptor locations where concentrations were calculated. Details of the emission calculations, dispersion modeling, and cancer risk calculations for the receptors with the maximum cancer risk from S. Market Street traffic are provided 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,[41] 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. Nine sources were identified using this tool with eight sources being diesel generators and one being a gas dispensing facility. The BAAQMD GIS website and previous stationary source requests provided screening risks and hazards for these sources, so a stationary source information request was not required to be submitted to BAAQMD.

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 and Gas Dispensing Facilities*. Community risk impacts from the stationary sources upon the childcare MEI are reported in Table 7.

<u>Construction Risk Impacts from Nearby Developments</u>

From the City's website,[42] the following planned or approved projects are located within 1,000 feet of the proposed project:

[40] BAAQMD. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May 2012
[41] BAAQMD, https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65
[42] City of San Jose, Private / Key Economic Development Projects Map, Web: https://gis.sanjoseca.gov/maps/devprojects/

- **City View Plaza** – this project is located at 150 Almaden Boulevard and plans include construction of three 19-story buildings with up to 3.8 million square feet of office and commercial space. The City View Plaza project site the edge of this site is approximately 1,000 feet from the project site. This project has been approved, but construction has not started. The majority of the construction area is outside of 1,000f feet from the proposed project site. Therefore, this would not result in a cumulative construction impact.

- **Gateway Tower** – this project is located at 455 S. 1st Street, approximately 430 feet southwest of the project site. This mixed-use project would include construction of a 25-story tower with 308 residential units and approximately 8,000 square feet of ground-level retail. This project has been approved but not constructed. While the construction schedule is unknown at this time, construction could occur simultaneously.

- **South Market Mixed-Use** – this project is located at 477 S. Market Street, approximately 590 feet southwest of the project site. This six-story mixed-use building would include 130 residential units and approximately 5,000 square feet of commercial space. This project has been approved and has already begun construction. Construction of this project should be completed prior to construction of the proposed project. This would not result in a cumulative construction impact.

- **Tribute Hotel** – this project is located at 211 S. 1st Street, which is about 215 feet north of the project site. This project has been approved but not constructed. It consists of a 24-story, 279-room hotel integrated into a historical building. While the construction schedule is unknown at this time, construction could occur simultaneously.

- **Park Habitat (formerly Museum Place)** – this project is located at 180 Park Avenue, which is about 925 feet northwest of the project site. This project has been approved but not constructed. It consists of a 24-story mixed-use building with approximately 214,000 square feet of office, 13,402 square feet of ground-level retail, 60,000 square feet of museum space, 184 hotel rooms, and 306 residential units. While the construction schedule is unknown at this time, construction could occur simultaneously.

- **The Mark** – this project is located at 459 SouS.th 4th Street, which is about 715 feet southeast of the project site. This project is pending and includes the construction of a 23-story multi-family residential building. While the construction schedule is unknown at this time, construction could occur simultaneously.

- **Bo Town Residential** – this project is located at 409 S. 2nd Street, which is south of the site, opposite E. San Salvador Street. This project is in the review process and consists of a 29-story high-rise with up to 520 residential units and approximately 6,400 square feet of ground-floor retail. Construction for Bo Town is proposed to start in late 2022, which means there could be overlapping periods with the proposed project. While the construction schedules may change for both projects, construction could occur simultaneously.

- **420 South 2nd Street** – this project is located at 420 S. 2nd Street, which is southeast of the project site, opposite the E. San Salvador Street/S. 2nd Street intersection. This project is in

the review process and consists of a two 12- and 22-story mixed-use towers with a total of 234 residential units and approximately 8,000 square feet of ground-floor retail. While the construction schedule is unknown at this time, construction could occur simultaneously.

- **420 South 3rd Street** – this project is located at 420 S. 3rd Street, which is approximately 470 feet southeast of the project site. This project is in the review process and consists of a 20-story mixed-use tower with a total of 146 residential units and approximately 3,000 square feet of ground-floor retail. While the construction schedule is unknown at this time, construction could occur simultaneously.

- **San José Stage/Home 2 Hotel** – this project is located at 490 S. 1st Street, which is approximately 465 feet south of the site, and is in the review process. This project consists of a new 132,000 square-foot mixed-use building (seven stories) with a total of 151 hotel rooms and 17,000 square feet of performance theater/auditorium space. While the construction schedule is unknown at this time, construction could occur simultaneously.

- **South 4th Street Mixed-Use** – this project is located at 439 S. 4th Street, which is approximately 625 feet southeast of the site, and is in the review process. This project consists of an 18-story mixed-use building with 218 residential units, approximately 1,345 square feet of commercial use space, and approximately 12,381 square feet of public eating. While the construction schedule is unknown at this time, construction could occur simultaneously.

The mitigated construction risks and hazard impact values for certain developments were available from their air quality technical reports either conducted by *Illingworth & Rodin, Inc*. or on the City of San José Environmental Review website for Active EIRs,[43] Completed EIRs,[44] or Negative Declaration / Initial Studies.[45] For developments that did not have available construction impact results at the time of this study, it was assumed the construction risks would be less than the BAAQMD single-source thresholds for community risks and hazards. If the nearby developments were more than 500 feet from the project site, the construction risks were assumed to be half of the BAAQMD single-source thresholds due to the distance and dispersion between the source and receptors. For the purpose of this analysis, it was conservatively assumed the entire construction period from the proposed project would overlap with the nearby developments' construction schedule. This approach likely provides an overestimate of the community risk and hazard levels because it assumes that maximum impacts from the nearby development occurs concurrently with the proposed project at the proposed project's MEI. The mitigated construction risks reported in that air quality assessment were included in the cumulative risks Table 7.

[43] City of San José, *Active EIRs*, https://www.sanjoseca.gov/your-government/departments/planning-building-code-enforcement/planning-division/environmental-planning/environmental-review/active-eirs
[44] City of San José, *Completed EIRs*, https://www.sanjoseca.gov/your-government/departments/planning-building-code-enforcement/planning-division/environmental-planning/environmental-review/completed-eirs
[45] City of San José, *Negative Declaration / Initial Studies*, https://www.sanjoseca.gov/your-government/departments/planning-building-code-enforcement/planning-division/environmental-planning/environmental-review/negative-declaration-initial-studies

Summary of Cumulative Risks at the Project Childcare MEI

Table 7 reports both the project and cumulative community risk impacts at the sensitive receptors most affected by project construction and operation (i.e., the project childcare MEI). The project would have an exceedance with respect to community risk caused by project construction and operation activities, since the maximum unmitigated cancer risk and annual $PM_{2.5}$ concentration exceed the BAAQMD single-source thresholds. The combined unmitigated annual $PM_{2.5}$ concentration would also exceed the BAAQMD cumulative-source threshold. With the implementation of *Mitigation Measure AQ-1 and AQ-2*, the project's cancer risk would be lowered to a level below the single-source thresholds. However, the combined annual $PM_{2.5}$ concentration, which includes unmitigated and mitigated impacts, could exceed its cumulative thresholds due to the concentration from the simultaneous construction of nearby developments. The cumulative threshold would be exceeded in the case where all construction activity occurs simultaneously. The cancer risk and HI does not exceed the cumulative thresholds.

Table 7. Cumulative Community Risk Impacts at the Project Childcare MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impacts				
Total/Maximum Project Impact	Unmitigated	**82.57 (infant)**	**0.84**	0.03
	Mitigated	8.21 (infant)	0.09	<0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	***Yes***	***Yes***	*No*
	Mitigated	*No*	*No*	*No*
Cumulative Operational Sources				
S. Market Street, ADT 18,508		0.17	0.01	<0.01
Team San Jose (Facility ID #2060, Generator), MEI at 790 feet		1.20	0.04	<0.01
FMT SJ, LLC dba Fairmont Hotel, San Jose (Facility ID #8556, Generator), MEI at +1,000 feet		0.40	0.02	<0.01
Robert F Peckham Federal Building (Facility ID #15031, Generator), MEI at 500 feet		0.19	0.02	<0.01
San Jose Marriott Hotel (Facility ID #15125, Generator), MEI at 860 feet		0.06	0.01	<0.01
Owl Energy Resources Inc (Facility ID #16778, Generator), MEI at +1,000 feet		0.57	0.11	<0.01
San Jose Redevelopment Agency (Facility ID #17018, Generator), MEI at 805 feet		0.01	--	--
DataPipe Inc (Facility ID #19298, Generator), MEI at +1,000 feet		2.51	<0.01	<0.01
G&K Management (Facility ID #22239, Generator), MEI at 800 feet		0.06	<0.01	<0.01
Super Gas & Mart (Facility ID #111979, Gas Station), MEI at 980 feet		0.04	--	<0.01
Cumulative Temporary Construction Sources				
Gateway Tower Mitigated Construction Emissions – 430 feet southwest		<4.90	<0.06	<0.01
Tribute Hotel Mitigated Construction Emissions – 215 feet north		<0.90	<0.15	<0.01
Park Habitat Mitigated Construction Emissions – 925 feet northwest		<3.40	<0.03	<0.01
The Mark Mixed-use Mitigated Construction Emissions – 715 feet southeast		<9.45	<0.05	<0.01
Bo Town Mitigated Construction Emissions – 50 feet south		<11.63	<0.08	<0.01
420 S. 2nd Street Mitigated Construction Emissions – 100 feet southeast		<10.00	<0.30	<1.00
420 S. 3rd Street Mitigated Construction Emissions – 470 feet southeast		<10.00	<0.30	<1.00
San José Stage/Home 2 Hotel Mitigated Construction Emissions – 465 feet south		<3.20	<0.17	<0.01
S. 4th Street Mixed-Use Mitigated Construction Emissions – 625 feet southeast		<8.60	<0.09	<0.03
Combined Sources	Unmitigated	**<149.86**	**<2.30**	<2.21
	Mitigated	<75.50	**<1.55**	<2.19
BAAQMD Cumulative Source Threshold		***100***	***0.8***	***10.0***
Exceed Threshold?	Unmitigated	***Yes***	***Yes***	*No*
	Mitigated	*No*	***Yes***	*No*

Mitigation Measure AQ-2: Use construction equipment that has low diesel particulate matter exhaust 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 25 horsepower used at the site for more than two continuous days or 20 hours total shall meet U.S. EPA Tier 4 final emission standards for particulate matter (PM_{10} and $PM_{2.5}$), if feasible, otherwise,

    a. If use of Tier 4 equipment is not available, alternatively use equipment that meets U.S. EPA emission standards for Tier 3 engines and include particulate matter emissions control equivalent to CARB Level 3 verifiable diesel emission control devices that altogether achieve an 88 percent or greater reduction in particulate matter exhaust in comparison to uncontrolled equipment.

    b. Use of alternatively fueled or electric equipment.

2. Stationary cranes shall be powered by electricity.

Alternatively, the applicant could develop a separate feasible plan that reduces on- and near-site construction diesel particulate matter emissions by 88 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 U.S. EPA Tier 4 Final engines standards and electric stationary cranes were used along with enhanced BAAQMD best management practices for construction. With these implemented, the project's construction cancer risk levels (assuming infant and child exposure) would be reduced by 90 percent to 8.21 chances per million. The project's annual $PM_{2.5}$ concentrations would be reduced by 89 percent to 0.09 $\mu g/m^3$. The project's risk impacts would no longer exceed the BAAQMD single-source significance thresholds. This would reduce the cumulative cancer risk to less than 75.50 chances per million and the cumulative $PM_{2.5}$ concentration risk to less than 1.55 $\mu g/m^3$. The $PM_{2.5}$ concentration would still exceed the cumulative threshold due to the overwhelming contribution of non-project sources.

Mitigation Measure AQ-1 and *AQ-2* represent the best available measures to reduce project construction period emissions. The $PM_{2.5}$ concentration from existing sources alone exceeds the cumulative threshold at 1.46 $\mu g/m^3$. Cumulative risks exceed the $PM_{2.5}$ concentration threshold because of the overwhelming influence of the potentially simultaneous nearby developments at the childcare MEI. The project's mitigated $PM_{2.5}$ concentration only represents 6 percent of the total mitigated cumulative concentration. In addition, according to BAAQMD health risks would be less-than-significant to the MEI if the risks from the project are reduced below the single-source

thresholds.[46] Therefore, the project would not substantially contribute to the total cumulative $PM_{2.5}$ concentration. The project would not be cumulatively considerable and no additional mitigation would be required on the part of the project to mitigate the exceedance of the cumulative source threshold for annual $PM_{2.5}$ concentration. Note that the project would apply best practices in reducing construction emissions, including those of $PM_{2.5}$.

Impact 4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Construction activities in the Project area could result in odorous emissions from diesel exhaust associated with construction equipment. Because of the temporary nature of these emissions and the highly diffusive properties of diesel exhaust, exposure of receptors to these emissions would be limited. Therefore, odors from construction that could cause complaints from the general public and affect a substantial number of people are not expected.

BAAQMD has identified a variety of land uses and types of operations that produce emissions that may lead to odors in their CEQA Air Quality Guidelines. The identified land uses include wastewater treatment plants. Additionally, according to the BAAQMD CEQA Guidelines, an odor source with five or more confirmed complaints per year averaged over three years is considered to cause frequent odor complaints, and therefore, have a significant impact.

The proposed project would have some of its wastewater treated at an independent wastewater treatment facility located in the first below-grade level of the proposed adjacent Bo Town project. The wastewater treatment facility could generate odors from many phases of the treatment process. The anaerobic biological activity in the treatment system of the wastewater and solids produces most of the hydrogen sulfide and ammonia type odors. Odors can be mitigated through modern design, appropriate chemical treatment, proper ventilation, and facility maintenance. The wastewater treatment facility is designed to be a completely enclosed system within the first below-grade level of the of the Bo Town site. The new pre-manufactured wastewater equipment would be equipped with modern technology that should minimize the release of any odors and the proposed treatment plant does not include any lagoons, exposed treatment water, or biosolid piles that would emit odors. Typically, wastewater treatment plants include odor control plans to address potential odor and odor complaints. An odor control plan for this treatment plant would be included with the Bo Town project and not with the proposed project. The wastewater treatment odors would also be regulated by BAAQMD in the event of odor complaints.

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

Supporting Documentation

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

Attachment 2 includes the CalEEMod output for project construction and operational criteria air pollutant. The operational outputs for existing uses are also included in this attachment. 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 health risk assessment. This includes the summary of the dispersion modeling and the cancer risk calculations for construction and operation. The 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 MEI.

Attachment 1: Health Risk Calculation Methodology

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.[47] 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.[48] 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.[49] 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, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95th percentile 8-hour breathing rates.

[47] 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.
[48] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[49] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

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

* An 8-hour breathing rate (8HrBR) is used for worker and school child exposures.

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-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*

* For worker exposures (adult) the exposure duration and frequency are 25 years 250 days/year and FAH is not applicable.

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 Input Assumptions and Outputs

Air Quality/Noise Construction Information Data Request

Project Name: San Jose - Valley Title

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load factor

Project Size	0	Dwelling Units	2.8	total project acres disturbed	
	0	s.f. residential			**Pile Driving? Y/N? - No pile on this project**
	58,606	s.f. retail			
	1,375,028	s.f. office/commercial			**Project include OPERATIONAL GENERATOR OR FIRE PUMP on-site? Y/N? ____**
		s.f. other, specify:			**IF YES (if BOTH separate values) --> Yes - the completed building will have a generator and fire pump**
	528,984	s.f. parking garage	1227	spaces	**Kilowatts/Horsepower: TBD - Pending Engineering_____**
		s.f. parking lot		spaces	**Fuel Type: TBD - Pending Engineering_____**
Construction Hours:	7:00		10:00		
Monday-Friday	AM 7:00	to	PM 7:00 PM		**Location in project (Plans Desired if Available): See attached floor plans**
Saturday	AM				

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

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	Annual Hours	Comments
	Demolition	**Start Date:**	**4/3/2023**	**Total phase:**	**6**			**Overall Import/Export Volumes**
		End Date:	**4/10/2023**					
1	Concrete/Industrial Saws	81	0.73	4	6	4	24	**Demolition Volume**
1	Excavators	158	0.38	8	3	4	24	120,000 SF of AC Parking Lot (thickness 2"-3")
1	Rubber-Tired Dozers	247	0.4	5	3	2.5	15	Demo of Existing Sidewalk (thickness 4")
1	Tractors/Loaders/Backhoes	97	0.37	4	3	2	12	Demo of existing curb and planter walls
	Site Preparation	**Start Date:**	**4/4/2023**	**Total phase:**	**65**			
		End Date:	**7/3/2023**					
1	Graders	187	0.41	5	5	0.38461538	25	
1	Rubber Tired Dozers	247	0.4	3	28	1.29230769	84	
2	Tractors/Loaders/Backhoes	97	0.37	7	30	3.23076923	420	
	Grading / Excavation	**Start Date:**	**7/4/2023**	**Total phase:**	**197**			
		End Date:	**4/19/2024**					**Soil Hauling Volume**
2	Excavators	158	0.38	8	175	7.10659898	2800	Export volume = 290,867 CY
1	Graders	187	0.41	2	30	0.30456853	60	Import volume = No Import
1	Rubber Tired Dozers	247	0.4	4	95	1.92893401	380	
2	Concrete/Industrial Saws	81	0.73	8	10	0.40609137	160	
1	Tractors/Loaders/Backhoes	97	0.37	4	60	1.21827411	240	
	Trenching/Foundation	**Start Date:**	**4/19/2024**	**Total phase:**	**30**			
		End Date:	**6/1/2024**					
1	Tractor/Loader/Backhoe	97	0.37	4	10	1.33333333	40	
1	Excavators	158	0.38	7	15	3.5	105	
2	Cranes	231	0.29	8	30	8	480	
1120	Cement and Mortar Mixers	9	0.56	8	2	0.53333333	17920	We will have cement truck, no onsite mixers
	Building - Superstructure/Exterior	**Start Date:**	**6/1/2024**	**Total phase:**	**450**			Cement Trucks = 99,695 CY/8,979 trips
		End Date:	**3/20/2026**					
2	Cranes	231	0.29	8	375	6.66666667	6000	Tower cranes will be electric
4	Forklifts	89	0.2	4	300	2.66666667	4800	Forklifts will be diesel
0	Generator Sets	84	0.74	0	0	0	0	
10	Aerial Lifts	63	0.31	7	300	4.66666667	21000	
7859	Cement and Mortar Mixers	9	0.56	8	88	1.56444444	5532736	We will have cement truck, no onsite mixers
	Building - Cores/Elevators/Finishes	**Start Date:**	**3/15/2025**	**Total phase:**	**368**			
		End Date:	**9/5/2026**					
4	Industrial Saws	81	0.73	4	304	3.30434783	4864	
10	Aerial Lift	62	0.31	4	304	3.30434783	12160	
	Sitework	**Start Date:**	**3/18/2026**	**Total phase:**	**109**			No paving under sitework. New building will take up existing parking lot. Some minor misc paving anticipated a city street areas/patchwork
		Start Date:	**8/23/2026**					New sitework to consist of planters, walking paths, dining areas & landscape
200	Cement and Mortar Mixers	9	0.56	8	5	0.36697248	8000	We will have cement truck, no onsite mixers
1	Paving Equipment	132	0.36	8	1	0.0733945	8	
1	Rollers	80	0.38	8	2	0.14678899	16	
1	Tractors/Loaders/Backhoes	97	0.37	8	10	0.73394495	80	
	Finals/CX/Raindays	**Start Date:**	**4/6/2026**	**Total phase:**	**130**			
		Start Date:	**10/6/2026**					

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 horepower or load factor, as appropriate

Complete one sheet for each project component

Traffic Consultant Trip Gen						CalEEMod Default		
Land Use		**Size**	**Daily Trips**	**New Trips**	**Weekday Trip Gen**	**Weekday**	**Sat**	**Sun**
Office	1,000-sf	1375.028	13393	9241	***6.72***	9.74	2.21	0.7
Location Based Reduction	31%		*-4152*			*Rev*	***1.52***	***0.48***
Retail	1,000-sf	58.606	2212	1858	***31.70***	37.75	46.12	21.1
Location Based Reduction	16%		*-354*			*Rev*	***38.73***	***17.72***
EXISTING USE								
Office	1,000-sf	58.362	568	392	***6.72***	9.74	2.21	0.7
Location Based Reduction	31%		*-176*			*Rev*	***1.52***	***0.48***
		NET NEW TRIPS	10707					

Appendix A - Project Trip Generation Estimates

ITE Land Use (Code)	Location	% of Vehicle Mode Share	% Reduction	Size	Unit	Daily	
						Rate (Trips per 1000 GSF)	Trips
Proposed Land Uses							
Office (710)[1]				1,375,028	GSF	9.74	13,393
Location Based Reduction[2]	Central City Urban	69%	31%				*(4,152)*
Retail (820)				58,606	GSF	37.75	2,212
Location Based Reduction[2]	Central City Urban	84%	16%				*(354)*
Existing Land Uses							
Office (710)[1]				58,362	GSF	9.74	568
Location Based Reduction[2]	Central City Urban	69%	31%				*(176)*
					Valley Title Net New Trips		***10,707***

Notes:

[1] Source: *ITE Trip Generation Manual, 10th Edition* , 2017, average trip generation rates.

[2] The project site is located within a central city urban area based on the City of San Josè VMT Evaluation Tool (March 14, 2018). The location based vehicle mode shares a The trip reductions are based on the percent of mode share for all of the other modes of travel besides vehicle.

CITY OF SAN JOSE VEHICLE MILES TRAVELED EVALUATION TOOL SUMMARY REPORT

PROJECT:

Name: Valley Title
Location: 300 1st Street
Parcel: 46746081 Parcel Type: Central City Urban

Tool Version: 2/29/2019
Date: 11/3/2021

Proposed Parking Spaces Vehicles: 1,227 Bicycles: 323

LAND USE:

Residential:		Percent of All Residential Units	
Single Family	0 DU	Extremely Low Income (≤ 30% MFI)	0 % Affordable
Multi Family	0 DU	Very Low Income (> 30% MFI, ≤ 50% MFI)	0 % Affordable
Subtotal	0 DU	Low Income (> 50% MFI, ≤ 80% MFI)	0 % Affordable
Office:	1375 KSF		
Retail:	58.6 KSF		
Industrial:	0 KSF		

VMT REDUCTION STRATEGIES

Tier 1 - Project Characteristics

Increase Residential Density
- Existing Density (DU/Residential Acres in half-mile buffer) 22
- With Project Density (DU/Residential Acres in half-mile buffer) 22

Increase Development Diversity
- Existing Activity Mix Index 0.87
- With Project Activity Mix Index 0.83

Integrate Affordable and Below Market Rate
- Extremely Low Income BMR units . . . . . 0 %
- Very Low Income BMR units . . . . . 0 %
- Low Income BMR units . . . . . 0 %

Increase Employment Density
- Existing Density (Jobs/Commercial Acres in half-mile buffer) 89
- With Project Density (Jobs/Commercial Acres in half-mile buffer) 108

Tier 2 - Multimodal Infrastructure

Tier 3 - Parking

Limit Parking Supply
- Minimum Parking Required by Municipal Code . . . . . 2922 spaces
- Total Parking Spaces Available to Employees . . . . . 1227 spaces
- Does the surrounding street parking have RPP, meters, or time limits? . . . . . No

End of Trip Bike Facilities
- Bicycle Parking Spaces Provided by Project . . . . . 323 spaces
- Project Provides Additional End-of-Trip Facilities Beyond Parking? . . . . . Yes

Tier 4 - TDM Programs

Commute Trip Reduction Marketing/ Education
- Percent of Eligible Employees . . . . . 75 %

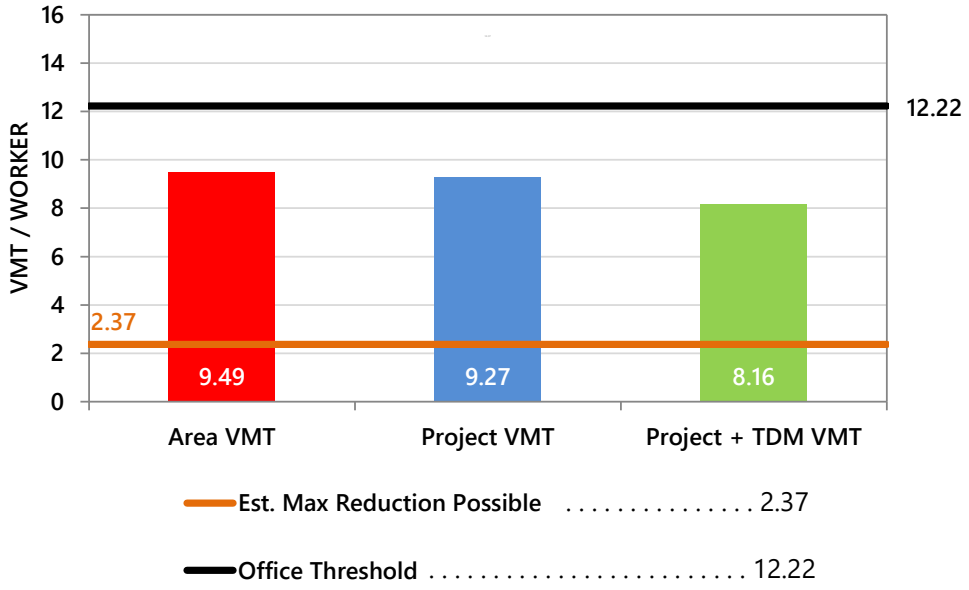
Subsidized or Discounted Transit Program
- Percent of Transit Subsidy . . . . . 100 %

Telecommuting and Alternative Work Schedule Program

Alternative Work Schedule	9/80 Schedule
Percent of Eligible Eemployees	50 %

EMPLOYMENT ONLY

The tool estimates that the project would generate per non-industrial worker VMT below the City's threshold.



AREA	SRC_TYPE	CATEGORY	SUBCATEGORY	POLLUTANT	SEASON	CONTROL_TYPE	2008	2010	2030	v1.05_RF11
SANTA CLARA	AREAWIDE	SOLVENT EVAPORATION	CONSUMER PRODUCTS	ROG	ANNUAL AVERAGE	GROWN AND CONTROLLED	11.5533	10.4949	11.2269	v1.05_RF11

						Interpolated
			2008	2010	2030	**2027**
	Consumer Products	ROG	11.5533	10.495	11.227	**11.1172**
		Population	1,790,185	1,790,185	2,223,743	**2,158,709**
		Rate	0.006453691	0.005862523	0.005048695	**0.005170769**
				0.908398466	0.782295788	**80%**
					0.861181317	

	CalEEMod	0.0000214
	Adjusted	0.00001712
		0.8

Construction Criteria Air Pollutants						
Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	**CO2e**	
Year	Tons				MT	
Construction Equipment						
2023	0.05	0.49	0.02	0.02	100.44	
2024	0.11	1.19	0.04	0.04	222.59	
2025	5.35	2.06	0.07	0.07	450.38	
2026	2.47	0.36	0.01	0.01	91.07	
EMFAC						
2023	0.15	1.22	0.08	0.03	1020.08	
2024	0.19	1.57	0.10	0.04	1345.09	
2025	0.18	1.50	0.10	0.04	1316.14	
2026	0.09	0.80	0.06	0.02	717.88	
Total Construction Emissions by Year						
2023	0.20	1.72	0.10	0.05	1120.52	
2024	0.30	2.76	0.15	0.09	1567.68	
2025	5.53	3.55	0.17	0.11	1766.52	
2026	2.56	1.16	0.07	0.04	808.95	
	Total Construction Emissions					
Tons	8.59	9.19	0.49	0.29	5263.67	
Pounds/Workdays	*Average Daily Emissions*				Workdays	
2023	1.73	14.68	0.87	0.47		**234**
2024	1.90	17.57	0.95	0.54		**314**
2025	35.33	22.71	1.11	0.70		**313**
2026	29.46	13.30	0.79	0.41		**174**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		
	Total Construction Emissions					
Pounds	68.42	68.27	3.73	2.12	0.00	
Average	16.60	17.76	0.96	0.55	0.00	1035.00
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		

Operational Criteria Air Pollutants						
Unmitigated	ROG	NOX	Total PM10	Total PM2.5		
Year	Tons					
Area	5.27	0.0002	0.0001	0.0001		
Energy	0.001	0.01	0.001	0.001		
Mobile	4.74	3.10	6.78	1.72		
Mobile adjustment*	-0.66	-0.43	-0.95	-0.24		
*Mobile TDM VMT Adjustment						
Stationary	0.30	0.15	0.01	0.01		
Cooling Tower	--	--	0.42	0.25		
Total	9.65	2.82	6.26	1.74		
	Existing Use Emissions					
Total	0.43	0.16	0.25	0.07		
	Net Annual Operational Emissions					
Tons/year	9.22	2.67	6.01	1.68		
Threshold - Tons/year	**10.0**	**10.0**	**15.0**	**10.0**		
	Average Daily Emissions					
Pounds Per Day	50.52	14.62	32.95	9.18		
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		

Category	**CO2e**			
	Project	Existing	Project 2030	Existing
Area	0.05	0.00		
Energy	7.36	431.14		
Mobile	6554.77	233.48		
Mobile adjustment*	-917.67			
Waste	674.05	27.29		
Water	843.13	42.91		
TOTAL	7161.70	734.83	0.00	0.00
Net GHG Emissions		6426.87		0.00
Service Population	5500			
Per Capita Emissions		1.30		0.00

1375.028 units
4 epsf

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

Dot & Bar (Valley Title)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1,375.03	1000sqft	2.80	1,375,028.00	0
Enclosed Parking with Elevator	1,227.00	Space	0.00	528,984.00	0
Regional Shopping Center	58.61	1000sqft	0.00	58,606.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2027
Utility Company	San Jose Clean Energy				
CO2 Intensity (lb/MWhr)	807.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SJ Clean Energy (but goes to all renewable by project start year)

Land Use - Based on Provided Construction Information Data Request and PD

Construction Phase - Based on Construction Information Data Request

Off-road Equipment - Based on Construction Information Data Request

Off-road Equipment - Cranes electric, cement and mortar mixers from trucks Based on Constr. Information Request

Off-road Equipment - Based on Construction Information Data Request

Off-road Equipment - Based on Constr. Information Request

Off-road Equipment - Based on Construction Information Data Request

Off-road Equipment - Added cement pumps Based on Constr. Information Request

Off-road Equipment - Based on Construction Information Data Request

Date: 11/5/2021 11:14 AM

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

Off-road Equipment - added cement pumps for 2 days Based on Constr. Information Request

Trips and VMT - 0 Trip for EMFAC2021 adjustment, asphalt demo = 120,000-sf, building = 8,979 cement trips, treching = 1120 cement trips, sitework = 200 cement trips

Demolition - 58,362-sf existing office building demo

Grading - grading = 290,867-cy export

Vehicle Trips - Traffic provided trip gen rates and reductions

Vehicle Emission Factors - EMFAC2021 Vehicle Emissions Factors Santa Clara Co 2027

Energy Use - no natural gas (San Jose Reach Code), all electric office use, assume natural gas for retail use in case restaurant use

Water And Wastewater - SJ Wastewater Treatment, no lagoons or septic tanks

Construction Off-road Equipment Mitigation - Enhanced BMPs, Tier 4 final engines, electric cranes mitigation

Energy Mitigation - SJCE 100% renewable no carbon electricity

Fleet Mix - EMFAC2021 Fleet Mix Santa Clara Co 2027

Stationary Sources - Emergency Generators and Fire Pumps - two, 2,500-kw generator with 3,674-hp diesel engine, 50hrs/year

Stationary Sources - User Defined -

Stationary Sources - Emergency Generators and Fire Pumps EF - Gen Specs - CO= 0.67, >1,000-hp generator requires BACT mitigation, NOx = 0.5, PM = 0.02

Consumer Products - Adjusted ROG for Santa Clara County 2027

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	20.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	18.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	10.00	368.00
tblConstructionPhase	NumDays	220.00	450.00
tblConstructionPhase	NumDays	20.00	6.00
tblConstructionPhase	NumDays	6.00	197.00
tblConstructionPhase	NumDays	10.00	109.00
tblConstructionPhase	NumDays	3.00	65.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00

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

tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConsumerProducts	ROG_EF	2.14E-05	1.712E-05
tblEnergyUse	NT24NG	0.06	0.00
tblEnergyUse	T24NG	16.14	0.00
tblFleetMix	HHD	6.2400e-003	7.6390e-003
tblFleetMix	HHD	6.2400e-003	7.6390e-003
tblFleetMix	HHD	6.2400e-003	7.6390e-003
tblFleetMix	LDA	0.58	0.52
tblFleetMix	LDA	0.58	0.52
tblFleetMix	LDA	0.58	0.52
tblFleetMix	LDT1	0.06	0.04
tblFleetMix	LDT1	0.06	0.04
tblFleetMix	LDT1	0.06	0.04
tblFleetMix	LDT2	0.18	0.23
tblFleetMix	LDT2	0.18	0.23
tblFleetMix	LDT2	0.18	0.23
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD2	5.2570e-003	5.9190e-003
tblFleetMix	LHD2	5.2570e-003	5.9190e-003
tblFleetMix	LHD2	5.2570e-003	5.9190e-003
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MH	2.6240e-003	2.4420e-003

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tblFleetMix	MH	2.6240e-003	2.4420e-003
tblFleetMix	MH	2.6240e-003	2.4420e-003
tblFleetMix	MHD	8.1590e-003	9.5300e-003
tblFleetMix	MHD	8.1590e-003	9.5300e-003
tblFleetMix	MHD	8.1590e-003	9.5300e-003
tblFleetMix	OBUS	8.7700e-004	1.0620e-003
tblFleetMix	OBUS	8.7700e-004	1.0620e-003
tblFleetMix	OBUS	8.7700e-004	1.0620e-003
tblFleetMix	SBUS	8.7400e-004	6.8400e-004
tblFleetMix	SBUS	8.7400e-004	6.8400e-004
tblFleetMix	SBUS	8.7400e-004	6.8400e-004
tblFleetMix	UBUS	3.5600e-004	4.0600e-004
tblFleetMix	UBUS	3.5600e-004	4.0600e-004
tblFleetMix	UBUS	3.5600e-004	4.0600e-004
tblGrading	MaterialExported	0.00	290,867.00
tblLandUse	LandUseSquareFeet	1,375,030.00	1,375,028.00
tblLandUse	LandUseSquareFeet	490,800.00	528,984.00
tblLandUse	LandUseSquareFeet	58,610.00	58,606.00
tblLandUse	LotAcreage	31.57	2.80
tblLandUse	LotAcreage	11.04	0.00
tblLandUse	LotAcreage	1.35	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
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	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.40
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.70
tblOffRoadEquipment	UsageHours	7.00	2.70
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.30
tblOffRoadEquipment	UsageHours	8.00	0.40
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.10
tblOffRoadEquipment	UsageHours	8.00	0.10
tblOffRoadEquipment	UsageHours	8.00	2.50
tblOffRoadEquipment	UsageHours	8.00	1.90
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	7.00	1.20
tblOffRoadEquipment	UsageHours	8.00	0.70
tblOffRoadEquipment	UsageHours	7.00	3.20
tblOffRoadEquipment	UsageHours	8.00	0.00
tblStationaryGeneratorsPumpsEF	CO_EF	2.60	0.67
tblStationaryGeneratorsPumpsEF	NOX_EF	4.56	0.50
tblStationaryGeneratorsPumpsEF	PM10_EF	0.15	0.02
tblStationaryGeneratorsPumpsEF	PM2_5_EF	0.15	0.02

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	3,674.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	265.00	0.00
tblTripsAndVMT	HaulingTripNumber	36,358.00	0.00
tblTripsAndVMT	VendorTripNumber	322.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	25.00	0.00
tblTripsAndVMT	WorkerTripNumber	681.00	0.00
tblTripsAndVMT	WorkerTripNumber	136.00	0.00
tblTripsAndVMT	WorkerTripNumber	23.00	0.00
tblVehicleEF	HHD	0.02	0.22
tblVehicleEF	HHD	0.05	0.11
tblVehicleEF	HHD	6.31	5.12
tblVehicleEF	HHD	0.41	0.71
tblVehicleEF	HHD	6.0890e-003	7.8200e-004
tblVehicleEF	HHD	991.82	777.09
tblVehicleEF	HHD	1,327.03	1,519.26
tblVehicleEF	HHD	0.05	0.01
tblVehicleEF	HHD	0.16	0.13
tblVehicleEF	HHD	0.21	0.24
tblVehicleEF	HHD	4.0000e-006	7.0000e-006
tblVehicleEF	HHD	5.29	3.97
tblVehicleEF	HHD	2.62	1.63
tblVehicleEF	HHD	2.32	2.75
tblVehicleEF	HHD	2.3520e-003	1.9390e-003
tblVehicleEF	HHD	0.06	0.08

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	2.2500e-003	1.8490e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8950e-003	8.7840e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	2.0000e-006	9.2000e-005
tblVehicleEF	HHD	7.1000e-005	2.9000e-005
tblVehicleEF	HHD	0.42	0.32
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	3.1000e-005	2.6100e-004
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	HHD	9.2270e-003	6.7480e-003
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	2.0000e-006	9.2000e-005
tblVehicleEF	HHD	7.1000e-005	2.9000e-005
tblVehicleEF	HHD	0.49	0.57
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	0.07	0.12
tblVehicleEF	HHD	3.1000e-005	2.6100e-004
tblVehicleEF	HHD	3.0000e-006	0.00
tblVehicleEF	LDA	1.2360e-003	1.5380e-003
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.45	0.54
tblVehicleEF	LDA	1.86	2.42
tblVehicleEF	LDA	214.18	230.34

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

tblVehicleEF	LDA	45.42	59.41
tblVehicleEF	LDA	3.4320e-003	3.5100e-003
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.14	0.20
tblVehicleEF	LDA	0.04	7.1090e-003
tblVehicleEF	LDA	1.1160e-003	1.0170e-003
tblVehicleEF	LDA	1.5010e-003	1.7230e-003
tblVehicleEF	LDA	0.02	2.4880e-003
tblVehicleEF	LDA	1.0270e-003	9.3500e-004
tblVehicleEF	LDA	1.3800e-003	1.5840e-003
tblVehicleEF	LDA	0.03	0.25
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	4.3670e-003	5.6030e-003
tblVehicleEF	LDA	0.03	0.19
tblVehicleEF	LDA	0.15	0.24
tblVehicleEF	LDA	2.1190e-003	2.2770e-003
tblVehicleEF	LDA	4.5000e-004	5.8700e-004
tblVehicleEF	LDA	0.03	0.25
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	6.3460e-003	8.1650e-003
tblVehicleEF	LDA	0.03	0.19
tblVehicleEF	LDA	0.16	0.26
tblVehicleEF	LDT1	2.3950e-003	4.4930e-003
tblVehicleEF	LDT1	0.04	0.09
tblVehicleEF	LDT1	0.65	1.12
tblVehicleEF	LDT1	2.00	4.20

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tblVehicleEF	LDT1	258.06	311.08
tblVehicleEF	LDT1	55.33	80.98
tblVehicleEF	LDT1	4.5300e-003	7.3650e-003
tblVehicleEF	LDT1	0.02	0.04
tblVehicleEF	LDT1	0.05	0.09
tblVehicleEF	LDT1	0.17	0.32
tblVehicleEF	LDT1	0.04	9.1980e-003
tblVehicleEF	LDT1	1.3260e-003	1.5760e-003
tblVehicleEF	LDT1	1.7710e-003	2.4760e-003
tblVehicleEF	LDT1	0.02	3.2190e-003
tblVehicleEF	LDT1	1.2200e-003	1.4490e-003
tblVehicleEF	LDT1	1.6290e-003	2.2770e-003
tblVehicleEF	LDT1	0.06	0.51
tblVehicleEF	LDT1	0.12	0.14
tblVehicleEF	LDT1	0.05	0.00
tblVehicleEF	LDT1	9.7520e-003	0.02
tblVehicleEF	LDT1	0.07	0.39
tblVehicleEF	LDT1	0.20	0.42
tblVehicleEF	LDT1	2.5540e-003	3.0750e-003
tblVehicleEF	LDT1	5.4800e-004	8.0100e-004
tblVehicleEF	LDT1	0.06	0.51
tblVehicleEF	LDT1	0.12	0.14
tblVehicleEF	LDT1	0.05	0.00
tblVehicleEF	LDT1	0.01	0.03
tblVehicleEF	LDT1	0.07	0.39
tblVehicleEF	LDT1	0.22	0.46
tblVehicleEF	LDT2	2.2120e-003	2.2390e-003
tblVehicleEF	LDT2	0.05	0.07
tblVehicleEF	LDT2	0.62	0.71

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tblVehicleEF	LDT2	2.44	3.08
tblVehicleEF	LDT2	271.88	320.53
tblVehicleEF	LDT2	58.84	81.54
tblVehicleEF	LDT2	4.6700e-003	5.0850e-003
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.04	0.05
tblVehicleEF	LDT2	0.20	0.28
tblVehicleEF	LDT2	0.04	8.8520e-003
tblVehicleEF	LDT2	1.1980e-003	1.1830e-003
tblVehicleEF	LDT2	1.5540e-003	1.9260e-003
tblVehicleEF	LDT2	0.02	3.0980e-003
tblVehicleEF	LDT2	1.1030e-003	1.0890e-003
tblVehicleEF	LDT2	1.4290e-003	1.7710e-003
tblVehicleEF	LDT2	0.05	0.27
tblVehicleEF	LDT2	0.10	0.07
tblVehicleEF	LDT2	0.05	0.00
tblVehicleEF	LDT2	8.6200e-003	8.4950e-003
tblVehicleEF	LDT2	0.06	0.20
tblVehicleEF	LDT2	0.23	0.31
tblVehicleEF	LDT2	2.6900e-003	3.1680e-003
tblVehicleEF	LDT2	5.8200e-004	8.0600e-004
tblVehicleEF	LDT2	0.05	0.27
tblVehicleEF	LDT2	0.10	0.07
tblVehicleEF	LDT2	0.05	0.00
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.20
tblVehicleEF	LDT2	0.25	0.34
tblVehicleEF	LHD1	4.5230e-003	4.8530e-003
tblVehicleEF	LHD1	6.3000e-003	5.7620e-003

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tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.18	0.19
tblVehicleEF	LHD1	0.57	0.71
tblVehicleEF	LHD1	0.96	2.15
tblVehicleEF	LHD1	8.56	8.33
tblVehicleEF	LHD1	734.83	729.06
tblVehicleEF	LHD1	10.77	17.05
tblVehicleEF	LHD1	7.3900e-004	6.2200e-004
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	0.05	0.04
tblVehicleEF	LHD1	0.44	0.46
tblVehicleEF	LHD1	0.26	0.38
tblVehicleEF	LHD1	8.8400e-004	6.8500e-004
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	9.8520e-003	9.4090e-003
tblVehicleEF	LHD1	8.1460e-003	0.01
tblVehicleEF	LHD1	2.2600e-004	1.7400e-004
tblVehicleEF	LHD1	8.4600e-004	6.5600e-004
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.4630e-003	2.3520e-003
tblVehicleEF	LHD1	7.7480e-003	0.01
tblVehicleEF	LHD1	2.0700e-004	1.6000e-004
tblVehicleEF	LHD1	1.6310e-003	0.11
tblVehicleEF	LHD1	0.06	0.03
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	8.6800e-004	0.00
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	0.18	0.16

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tblVehicleEF	LHD1	0.06	0.10
tblVehicleEF	LHD1	8.3000e-005	8.1000e-005
tblVehicleEF	LHD1	7.1690e-003	7.1170e-003
tblVehicleEF	LHD1	1.0700e-004	1.6900e-004
tblVehicleEF	LHD1	1.6310e-003	0.11
tblVehicleEF	LHD1	0.06	0.03
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	8.6800e-004	0.00
tblVehicleEF	LHD1	0.10	0.08
tblVehicleEF	LHD1	0.18	0.16
tblVehicleEF	LHD1	0.06	0.10
tblVehicleEF	LHD2	2.7350e-003	2.7890e-003
tblVehicleEF	LHD2	5.8140e-003	5.4840e-003
tblVehicleEF	LHD2	6.0230e-003	0.01
tblVehicleEF	LHD2	0.13	0.14
tblVehicleEF	LHD2	0.52	0.46
tblVehicleEF	LHD2	0.53	1.16
tblVehicleEF	LHD2	13.44	13.54
tblVehicleEF	LHD2	713.12	776.37
tblVehicleEF	LHD2	6.94	9.14
tblVehicleEF	LHD2	1.7040e-003	1.6800e-003
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.08	0.08
tblVehicleEF	LHD2	0.54	0.66
tblVehicleEF	LHD2	0.15	0.21
tblVehicleEF	LHD2	1.4770e-003	1.4220e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01

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tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	1.1400e-004	7.4000e-005
tblVehicleEF	LHD2	1.4140e-003	1.3600e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	2.7030e-003	2.6620e-003
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	1.0400e-004	6.8000e-005
tblVehicleEF	LHD2	7.8300e-004	0.06
tblVehicleEF	LHD2	0.03	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	4.3200e-004	0.00
tblVehicleEF	LHD2	0.10	0.10
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	LHD2	1.2800e-004	1.3000e-004
tblVehicleEF	LHD2	6.8810e-003	7.4740e-003
tblVehicleEF	LHD2	6.9000e-005	9.0000e-005
tblVehicleEF	LHD2	7.8300e-004	0.06
tblVehicleEF	LHD2	0.03	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.3200e-004	0.00
tblVehicleEF	LHD2	0.12	0.11
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	MCY	0.32	0.15
tblVehicleEF	MCY	0.25	0.17
tblVehicleEF	MCY	17.99	11.71
tblVehicleEF	MCY	9.14	7.90
tblVehicleEF	MCY	209.89	186.47

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tblVehicleEF	MCY	59.90	45.31
tblVehicleEF	MCY	0.07	0.04
tblVehicleEF	MCY	0.02	7.0870e-003
tblVehicleEF	MCY	1.14	0.54
tblVehicleEF	MCY	0.27	0.12
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	2.0840e-003	1.9590e-003
tblVehicleEF	MCY	2.9100e-003	3.4510e-003
tblVehicleEF	MCY	5.0400e-003	4.2000e-003
tblVehicleEF	MCY	1.9450e-003	1.8300e-003
tblVehicleEF	MCY	2.7280e-003	3.2360e-003
tblVehicleEF	MCY	0.90	3.85
tblVehicleEF	MCY	0.65	3.56
tblVehicleEF	MCY	0.48	0.00
tblVehicleEF	MCY	2.15	0.96
tblVehicleEF	MCY	0.49	3.78
tblVehicleEF	MCY	1.90	1.23
tblVehicleEF	MCY	2.0770e-003	1.8430e-003
tblVehicleEF	MCY	5.9300e-004	4.4800e-004
tblVehicleEF	MCY	0.90	0.08
tblVehicleEF	MCY	0.65	3.56
tblVehicleEF	MCY	0.48	0.00
tblVehicleEF	MCY	2.69	1.17
tblVehicleEF	MCY	0.49	3.78
tblVehicleEF	MCY	2.07	1.34
tblVehicleEF	MDV	2.3750e-003	2.6750e-003
tblVehicleEF	MDV	0.05	0.08
tblVehicleEF	MDV	0.63	0.76
tblVehicleEF	MDV	2.55	3.20

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tblVehicleEF	MDV	327.97	384.38
tblVehicleEF	MDV	69.67	97.04
tblVehicleEF	MDV	6.1060e-003	6.4690e-003
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.05	0.07
tblVehicleEF	MDV	0.22	0.32
tblVehicleEF	MDV	0.04	8.9330e-003
tblVehicleEF	MDV	1.2330e-003	1.1780e-003
tblVehicleEF	MDV	1.5830e-003	1.8910e-003
tblVehicleEF	MDV	0.02	3.1260e-003
tblVehicleEF	MDV	1.1370e-003	1.0850e-003
tblVehicleEF	MDV	1.4560e-003	1.7380e-003
tblVehicleEF	MDV	0.06	0.31
tblVehicleEF	MDV	0.11	0.08
tblVehicleEF	MDV	0.06	0.00
tblVehicleEF	MDV	9.5210e-003	0.01
tblVehicleEF	MDV	0.06	0.24
tblVehicleEF	MDV	0.26	0.37
tblVehicleEF	MDV	3.2410e-003	3.7980e-003
tblVehicleEF	MDV	6.8900e-004	9.5900e-004
tblVehicleEF	MDV	0.06	0.31
tblVehicleEF	MDV	0.11	0.08
tblVehicleEF	MDV	0.06	0.00
tblVehicleEF	MDV	0.01	0.02
tblVehicleEF	MDV	0.06	0.24
tblVehicleEF	MDV	0.28	0.41
tblVehicleEF	MH	6.9300e-003	8.8150e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.58	0.77

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tblVehicleEF	MH	1.80	2.17
tblVehicleEF	MH	1,418.06	1,669.13
tblVehicleEF	MH	16.70	21.21
tblVehicleEF	MH	0.06	0.07
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	1.17	1.40
tblVehicleEF	MH	0.24	0.30
tblVehicleEF	MH	0.13	0.04
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	2.3200e-004	2.6700e-004
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	3.2900e-003	3.3210e-003
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	2.1400e-004	2.4600e-004
tblVehicleEF	MH	0.47	26.64
tblVehicleEF	MH	0.04	6.73
tblVehicleEF	MH	0.18	0.00
tblVehicleEF	MH	0.05	0.07
tblVehicleEF	MH	9.6720e-003	0.16
tblVehicleEF	MH	0.08	0.10
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	1.6500e-004	2.1000e-004
tblVehicleEF	MH	0.47	26.64
tblVehicleEF	MH	0.04	6.73
tblVehicleEF	MH	0.18	0.00
tblVehicleEF	MH	0.06	0.08
tblVehicleEF	MH	9.6720e-003	0.16
tblVehicleEF	MH	0.09	0.11

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tblVehicleEF	MHD	3.6950e-003	0.01
tblVehicleEF	MHD	1.2530e-003	9.5450e-003
tblVehicleEF	MHD	8.5300e-003	7.5570e-003
tblVehicleEF	MHD	0.40	0.66
tblVehicleEF	MHD	0.18	0.22
tblVehicleEF	MHD	0.94	0.88
tblVehicleEF	MHD	68.38	154.32
tblVehicleEF	MHD	1,034.78	1,175.45
tblVehicleEF	MHD	8.72	7.64
tblVehicleEF	MHD	9.8750e-003	0.02
tblVehicleEF	MHD	0.13	0.15
tblVehicleEF	MHD	7.4170e-003	5.5230e-003
tblVehicleEF	MHD	0.37	0.81
tblVehicleEF	MHD	1.44	0.81
tblVehicleEF	MHD	1.70	1.37
tblVehicleEF	MHD	2.4000e-004	1.1860e-003
tblVehicleEF	MHD	0.13	0.04
tblVehicleEF	MHD	7.0420e-003	8.3150e-003
tblVehicleEF	MHD	1.1100e-004	9.3000e-005
tblVehicleEF	MHD	2.3000e-004	1.1340e-003
tblVehicleEF	MHD	0.06	0.02
tblVehicleEF	MHD	6.7300e-003	7.9470e-003
tblVehicleEF	MHD	1.0200e-004	8.5000e-005
tblVehicleEF	MHD	3.1800e-004	0.02
tblVehicleEF	MHD	0.02	4.6660e-003
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	1.7500e-004	0.00
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	0.02	0.04

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tblVehicleEF	MHD	0.04	0.04
tblVehicleEF	MHD	6.4900e-004	1.4270e-003
tblVehicleEF	MHD	9.8700e-003	0.01
tblVehicleEF	MHD	8.6000e-005	7.6000e-005
tblVehicleEF	MHD	3.1800e-004	0.02
tblVehicleEF	MHD	0.02	4.6660e-003
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	1.7500e-004	0.00
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.05	0.04
tblVehicleEF	OBUS	7.0730e-003	7.5660e-003
tblVehicleEF	OBUS	2.7540e-003	0.01
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.62	0.54
tblVehicleEF	OBUS	0.33	0.37
tblVehicleEF	OBUS	1.69	1.70
tblVehicleEF	OBUS	96.38	89.08
tblVehicleEF	OBUS	1,261.24	1,320.54
tblVehicleEF	OBUS	14.17	13.66
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.13	0.16
tblVehicleEF	OBUS	0.02	0.01
tblVehicleEF	OBUS	0.41	0.36
tblVehicleEF	OBUS	1.44	0.90
tblVehicleEF	OBUS	1.12	1.00
tblVehicleEF	OBUS	1.3500e-004	3.7200e-004
tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	7.6000e-003	0.01

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tblVehicleEF	OBUS	1.5100e-004	1.2700e-004
tblVehicleEF	OBUS	1.3000e-004	3.5600e-004
tblVehicleEF	OBUS	0.06	0.02
tblVehicleEF	OBUS	7.2580e-003	0.01
tblVehicleEF	OBUS	1.3900e-004	1.1700e-004
tblVehicleEF	OBUS	1.0730e-003	0.07
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.04
tblVehicleEF	OBUS	4.8500e-004	0.00
tblVehicleEF	OBUS	0.02	0.04
tblVehicleEF	OBUS	0.04	0.08
tblVehicleEF	OBUS	0.08	0.08
tblVehicleEF	OBUS	9.1500e-004	8.4100e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	1.4000e-004	1.3500e-004
tblVehicleEF	OBUS	1.0730e-003	0.07
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.06	0.05
tblVehicleEF	OBUS	4.8500e-004	0.00
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	0.04	0.08
tblVehicleEF	OBUS	0.09	0.09
tblVehicleEF	SBUS	0.06	0.08
tblVehicleEF	SBUS	5.1390e-003	0.09
tblVehicleEF	SBUS	5.5510e-003	5.0470e-003
tblVehicleEF	SBUS	2.58	1.76
tblVehicleEF	SBUS	0.42	0.81
tblVehicleEF	SBUS	0.77	0.68
tblVehicleEF	SBUS	343.48	187.75

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tblVehicleEF	SBUS	1,012.23	995.30
tblVehicleEF	SBUS	4.55	3.88
tblVehicleEF	SBUS	0.05	0.02
tblVehicleEF	SBUS	0.13	0.12
tblVehicleEF	SBUS	5.5840e-003	4.6260e-003
tblVehicleEF	SBUS	3.12	1.26
tblVehicleEF	SBUS	3.92	2.08
tblVehicleEF	SBUS	1.00	0.51
tblVehicleEF	SBUS	2.7970e-003	1.0210e-003
tblVehicleEF	SBUS	0.74	0.04
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	5.7000e-005	4.3000e-005
tblVehicleEF	SBUS	2.6760e-003	9.7600e-004
tblVehicleEF	SBUS	0.32	0.02
tblVehicleEF	SBUS	2.6950e-003	2.6290e-003
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	SBUS	5.3000e-005	4.0000e-005
tblVehicleEF	SBUS	6.7700e-004	0.03
tblVehicleEF	SBUS	6.5220e-003	8.5010e-003
tblVehicleEF	SBUS	0.29	0.19
tblVehicleEF	SBUS	3.1500e-004	0.00
tblVehicleEF	SBUS	0.07	0.05
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	SBUS	3.2730e-003	1.7010e-003
tblVehicleEF	SBUS	9.6760e-003	9.2440e-003
tblVehicleEF	SBUS	4.5000e-005	3.8000e-005
tblVehicleEF	SBUS	6.7700e-004	0.03

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tblVehicleEF	SBUS	6.5220e-003	8.5010e-003
tblVehicleEF	SBUS	0.41	0.31
tblVehicleEF	SBUS	3.1500e-004	0.00
tblVehicleEF	SBUS	0.09	0.15
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	UBUS	1.74	0.53
tblVehicleEF	UBUS	1.9120e-003	3.7050e-003
tblVehicleEF	UBUS	13.20	6.31
tblVehicleEF	UBUS	0.14	0.48
tblVehicleEF	UBUS	1,654.13	1,063.59
tblVehicleEF	UBUS	1.40	3.13
tblVehicleEF	UBUS	0.28	0.16
tblVehicleEF	UBUS	1.1770e-003	5.9640e-003
tblVehicleEF	UBUS	0.71	0.29
tblVehicleEF	UBUS	0.01	0.04
tblVehicleEF	UBUS	0.07	0.13
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	5.1700e-003	5.5380e-003
tblVehicleEF	UBUS	1.5000e-005	1.2000e-005
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	8.3320e-003	0.01
tblVehicleEF	UBUS	4.9450e-003	5.2950e-003
tblVehicleEF	UBUS	1.4000e-005	1.1000e-005
tblVehicleEF	UBUS	3.2000e-005	0.02
tblVehicleEF	UBUS	3.3900e-004	4.7600e-003
tblVehicleEF	UBUS	1.6000e-005	0.00
tblVehicleEF	UBUS	0.03	0.06
tblVehicleEF	UBUS	6.9000e-005	0.01

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

tblVehicleEF	UBUS	8.0430e-003	0.01
tblVehicleEF	UBUS	0.01	8.5740e-003
tblVehicleEF	UBUS	1.4000e-005	3.1000e-005
tblVehicleEF	UBUS	3.2000e-005	0.02
tblVehicleEF	UBUS	3.3900e-004	4.7600e-003
tblVehicleEF	UBUS	1.6000e-005	0.00
tblVehicleEF	UBUS	1.78	0.60
tblVehicleEF	UBUS	6.9000e-005	0.01
tblVehicleEF	UBUS	8.8060e-003	0.01
tblVehicleTrips	ST_TR	2.21	1.52
tblVehicleTrips	ST_TR	46.12	38.73
tblVehicleTrips	SU_TR	0.70	0.48
tblVehicleTrips	SU_TR	21.10	17.72
tblVehicleTrips	WD_TR	9.74	6.72
tblVehicleTrips	WD_TR	37.75	31.70
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

Date: 11/5/2021 11:14 AM

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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
Year	tons/yr										MT/yr					
2023	0.0537	0.4948	0.6567	1.1400e-003	0.2059	0.0232	0.2291	0.0872	0.0215	0.1087	0.0000	99.6723	99.6723	0.0309	0.0000	100.4441
2024	0.1109	1.1902	1.2692	2.5400e-003	0.0609	0.0449	0.1058	0.0206	0.0415	0.0620	0.0000	220.8389	220.8389	0.0700	0.0000	222.5876
2025	5.3536	2.0594	2.8120	5.1600e-003	0.0000	0.0710	0.0710	0.0000	0.0671	0.0671	0.0000	447.5732	447.5732	0.1122	0.0000	450.3771
2026	2.4712	0.3618	0.6390	1.0500e-003	0.0000	0.0118	0.0118	0.0000	0.0116	0.0116	0.0000	90.7019	90.7019	0.0145	0.0000	91.0655
Maximum	**5.3536**	**2.0594**	**2.8120**	**5.1600e-003**	**0.2059**	**0.0710**	**0.2291**	**0.0872**	**0.0671**	**0.1087**	**0.0000**	**447.5732**	**447.5732**	**0.1122**	**0.0000**	**450.3771**

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					
2023	0.0138	0.0599	0.7783	1.1400e-003	0.0803	1.8400e-003	0.0821	0.0170	1.8400e-003	0.0189	0.0000	99.6721	99.6721	0.0309	0.0000	100.4440
2024	0.0283	0.5335	1.0430	1.4800e-003	0.0237	2.2900e-003	0.0260	4.0100e-003	2.2900e-003	6.2900e-003	0.0000	127.9354	127.9354	0.0399	0.0000	128.9330
2025	5.2235	1.2975	2.6619	3.8700e-003	0.0000	5.7600e-003	5.7600e-003	0.0000	5.7600e-003	5.7600e-003	0.0000	334.2106	334.2106	0.0755	0.0000	336.0978
2026	2.4488	0.2571	0.7004	1.0500e-003	0.0000	1.5100e-003	1.5100e-003	0.0000	1.5100e-003	1.5100e-003	0.0000	90.7018	90.7018	0.0145	0.0000	91.0654
Maximum	**5.2235**	**1.2975**	**2.6619**	**3.8700e-003**	**0.0803**	**5.7600e-003**	**0.0821**	**0.0170**	**5.7600e-003**	**0.0189**	**0.0000**	**334.2106**	**334.2106**	**0.0755**	**0.0000**	**336.0978**

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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	N20	CO2e
Percent Reduction	3.44	47.69	3.59	23.76	61.00	92.45	72.37	80.50	91.95	87.00	0.00	24.02	24.02	29.32	0.00	24.05

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-3-2023	7-2-2023	0.1056	0.0103
2	7-3-2023	10-2-2023	0.2212	0.0317
3	10-3-2023	1-2-2024	0.2234	0.0321
4	1-3-2024	4-2-2024	0.1054	0.0160
5	4-3-2024	7-2-2024	0.2902	0.0840
6	7-3-2024	10-2-2024	0.4555	0.2335
7	10-3-2024	1-2-2025	0.4549	0.2335
8	1-3-2025	4-2-2025	0.8062	0.6018
9	4-3-2025	7-2-2025	2.2841	2.0188
10	7-3-2025	10-2-2025	2.3092	2.0410
11	10-3-2025	1-2-2026	2.0495	1.8989
12	1-3-2026	4-2-2026	1.8436	1.7683
13	4-3-2026	7-2-2026	0.9527	0.9046
14	7-3-2026	9-30-2026	0.0025	0.0002
		Highest	2.3092	2.0410

2.2 Overall Operational

Unmitigated Operational

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

Dot & Bar (Valley Title) - 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					
Area	5.2743	2.2000e-004	0.0244	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.0475	0.0475	1.2000e-004	0.0000	0.0506
Energy	7.4000e-004	6.7200e-003	5.6500e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	9,937.7619	9,937.7619	0.4057	0.0493	9,962.5952
Mobile	4.7407	3.1038	29.4329	0.0699	6.7319	0.0459	6.7778	1.6789	0.0428	1.7217	0.0000	6,457.3889	6,457.3889	0.3357	0.2986	6,554.7747
Stationary	0.3015	0.1478	0.1981	1.4500e-003		5.9100e-003	5.9100e-003		5.9100e-003	5.9100e-003	0.0000	139.9049	139.9049	0.0196	0.0000	140.3953
Waste						0.0000	0.0000		0.0000	0.0000	272.0729	0.0000	272.0729	16.0790	0.0000	674.0490
Water						0.0000	0.0000		0.0000	0.0000	88.0013	688.8059	776.8072	0.3310	0.1948	843.1284
Total	**10.3172**	**3.2586**	**29.6610**	**0.0714**	**6.7319**	**0.0524**	**6.7843**	**1.6789**	**0.0493**	**1.7282**	**360.0741**	**17,223.9090**	**17,583.9832**	**17.1712**	**0.5427**	**18,174.9932**

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	5.2743	2.2000e-004	0.0244	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.0475	0.0475	1.2000e-004	0.0000	0.0506
Energy	7.4000e-004	6.7200e-003	5.6500e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	7.3182	7.3182	1.4000e-004	1.3000e-004	7.3617
Mobile	4.7407	3.1038	29.4329	0.0699	6.7319	0.0459	6.7778	1.6789	0.0428	1.7217	0.0000	6,457.3889	6,457.3889	0.3357	0.2986	6,554.7747
Stationary	0.3015	0.1478	0.1981	1.4500e-003		5.9100e-003	5.9100e-003		5.9100e-003	5.9100e-003	0.0000	139.9049	139.9049	0.0196	0.0000	140.3953
Waste						0.0000	0.0000		0.0000	0.0000	272.0729	0.0000	272.0729	16.0790	0.0000	674.0490
Water						0.0000	0.0000		0.0000	0.0000	88.0013	688.8059	776.8072	0.3310	0.1948	843.1284

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

Total	**10.3172**	**3.2586**	**29.6610**	**0.0714**	**6.7319**	**0.0524**	**6.7843**	**1.6789**	**0.0493**	**1.7282**	**360.0741**	**7,293.4654**	**7,653.5395**	**16.7656**	**0.4936**	**8,219.7597**

	ROG	NOx	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**	**57.65**	**56.47**	**2.36**	**9.06**	**54.77**

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	4/3/2023	4/8/2023	6	6	Demo is also part of site prep
2	Site Preparation	Site Preparation	4/4/2023	6/17/2023	6	65	
3	Grading	Grading	7/4/2023	2/17/2024	6	197	
4	Trenching	Trenching	4/19/2024	5/23/2024	6	30	
5	Exterior Construction	Building Construction	6/1/2024	11/7/2025	6	450	
6	Interior Construction	Architectural Coating	3/15/2025	5/18/2026	6	368	
7	Site Work	Paving	3/18/2026	7/22/2026	6	109	

Acres of Grading (Site Preparation Phase): 6.91

Acres of Grading (Grading Phase): 27.09

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,150,451; Non-Residential Outdoor: 716,817; Striped Parking Area: 31,739

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	4.00	81	0.73
Demolition	Excavators	1	4.00	158	0.38

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

Demolition	Rubber Tired Dozers	1	2.50	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Site Preparation	Graders	1	0.40	187	0.41
Site Preparation	Rubber Tired Dozers	1	1.30	247	0.40
Site Preparation	Scrapers	0	0.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	2	3.20	97	0.37
Grading	Concrete/Industrial Saws	2	0.40	81	0.73
Grading	Excavators	2	7.10	158	0.38
Grading	Graders	1	0.30	187	0.41
Grading	Rubber Tired Dozers	1	1.90	247	0.40
Grading	Tractors/Loaders/Backhoes	1	1.20	97	0.37
Trenching	Cement and Mortar Mixers	6	0.50	9	0.56
Trenching	Cranes	2	8.00	231	0.29
Trenching	Excavators	1	3.50	158	0.38
Trenching	Tractors/Loaders/Backhoes	1	1.30	97	0.37
Exterior Construction	Aerial Lifts	10	4.70	63	0.31
Exterior Construction	Cement and Mortar Mixers	6	1.60	9	0.56
Exterior Construction	Cranes	2	6.70	231	0.29
Exterior Construction	Forklifts	4	2.70	89	0.20
Exterior Construction	Generator Sets	0	0.00	84	0.74
Exterior Construction	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Exterior Construction	Welders	0	0.00	46	0.45
Interior Construction	Aerial Lifts	10	3.30	63	0.31
Interior Construction	Air Compressors	0	0.00	78	0.48
Interior Construction	Concrete/Industrial Saws	4	3.30	81	0.73
Site Work	Cement and Mortar Mixers	6	0.40	9	0.56
Site Work	Pavers	0	0.00	130	0.42
Site Work	Paving Equipment	1	0.10	132	0.36
Site Work	Rollers	1	0.10	80	0.38

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

Site Work	Tractors/Loaders/Backhoes	1	0.70	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	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
Trenching	10	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Exterior Construction	22	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Interior Construction	14	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Work	9	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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

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

Category	tons/yr										MT/yr					
Fugitive Dust					0.0287	0.0000	0.0287	4.3500e-003	0.0000	4.3500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5400e-003	0.0140	0.0150	3.0000e-005		6.6000e-004	6.6000e-004		6.3000e-004	6.3000e-004	0.0000	2.3956	2.3956	5.5000e-004	0.0000	2.4094
Total	**1.5400e-003**	**0.0140**	**0.0150**	**3.0000e-005**	**0.0287**	**6.6000e-004**	**0.0294**	**4.3500e-003**	**6.3000e-004**	**4.9800e-003**	**0.0000**	**2.3956**	**2.3956**	**5.5000e-004**	**0.0000**	**2.4094**

Unmitigated Construction Off-Site

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

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

Category	tons/yr										MT/yr					
Fugitive Dust					0.0112	0.0000	0.0112	8.5000e-004	0.0000	8.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-004	1.3700e-003	0.0170	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.3956	2.3956	5.5000e-004	0.0000	2.4094
Total	**3.2000e-004**	**1.3700e-003**	**0.0170**	**3.0000e-005**	**0.0112**	**4.0000e-005**	**0.0112**	**8.5000e-004**	**4.0000e-005**	**8.9000e-004**	**0.0000**	**2.3956**	**2.3956**	**5.5000e-004**	**0.0000**	**2.4094**

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
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 - 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

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

Category	tons/yr										MT/yr					
Fugitive Dust					0.0355	0.0000	0.0355	0.0179	0.0000	0.0179	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.1700e-003	0.0851	0.0772	1.4000e-004		3.9100e-003	3.9100e-003		3.6000e-003	3.6000e-003	0.0000	12.0202	12.0202	3.8900e-003	0.0000	12.1174
Total	**8.1700e-003**	**0.0851**	**0.0772**	**1.4000e-004**	**0.0355**	**3.9100e-003**	**0.0394**	**0.0179**	**3.6000e-003**	**0.0215**	**0.0000**	**12.0202**	**12.0202**	**3.8900e-003**	**0.0000**	**12.1174**

Unmitigated Construction Off-Site

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

Dot & Bar (Valley Title) - 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					
Fugitive Dust					0.0138	0.0000	0.0138	3.4900e-003	0.0000	3.4900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6700e-003	7.2400e-003	0.0860	1.4000e-004		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	12.0202	12.0202	3.8900e-003	0.0000	12.1174
Total	**1.6700e-003**	**7.2400e-003**	**0.0860**	**1.4000e-004**	**0.0138**	**2.2000e-004**	**0.0141**	**3.4900e-003**	**2.2000e-004**	**3.7100e-003**	**0.0000**	**12.0202**	**12.0202**	**3.8900e-003**	**0.0000**	**12.1174**

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
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 - 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

Dot & Bar (Valley Title) - 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					
Fugitive Dust					0.1417	0.0000	0.1417	0.0650	0.0000	0.0650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0440	0.3956	0.5645	9.7000e-004		0.0187	0.0187		0.0172	0.0172	0.0000	85.2565	85.2565	0.0264	0.0000	85.9173
Total	**0.0440**	**0.3956**	**0.5645**	**9.7000e-004**	**0.1417**	**0.0187**	**0.1603**	**0.0650**	**0.0172**	**0.0822**	**0.0000**	**85.2565**	**85.2565**	**0.0264**	**0.0000**	**85.9173**

Unmitigated Construction Off-Site

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

Dot & Bar (Valley Title) - 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					
Fugitive Dust					0.0553	0.0000	0.0553	0.0127	0.0000	0.0127	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0118	0.0513	0.6753	9.7000e-004		1.5800e-003	1.5800e-003		1.5800e-003	1.5800e-003	0.0000	85.2564	85.2564	0.0264	0.0000	85.9172
Total	**0.0118**	**0.0513**	**0.6753**	**9.7000e-004**	**0.0553**	**1.5800e-003**	**0.0568**	**0.0127**	**1.5800e-003**	**0.0143**	**0.0000**	**85.2564**	**85.2564**	**0.0264**	**0.0000**	**85.9172**

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
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 - 2024

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

Dot & Bar (Valley Title) - 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					
Fugitive Dust					0.0609	0.0000	0.0609	0.0206	0.0000	0.0206	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0116	0.1007	0.1533	2.6000e-004		4.7300e-003	4.7300e-003		4.3700e-003	4.3700e-003	0.0000	23.1074	23.1074	7.1600e-003	0.0000	23.2864
Total	**0.0116**	**0.1007**	**0.1533**	**2.6000e-004**	**0.0609**	**4.7300e-003**	**0.0656**	**0.0206**	**4.3700e-003**	**0.0249**	**0.0000**	**23.1074**	**23.1074**	**7.1600e-003**	**0.0000**	**23.2864**

Unmitigated Construction Off-Site

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

Dot & Bar (Valley Title) - 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					
Fugitive Dust					0.0237	0.0000	0.0237	4.0100e-003	0.0000	4.0100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-003	0.0139	0.1830	2.6000e-004		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	23.1074	23.1074	7.1600e-003	0.0000	23.2864
Total	**3.2000e-003**	**0.0139**	**0.1830**	**2.6000e-004**	**0.0237**	**4.3000e-004**	**0.0242**	**4.0100e-003**	**4.3000e-004**	**4.4400e-003**	**0.0000**	**23.1074**	**23.1074**	**7.1600e-003**	**0.0000**	**23.2864**

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
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 Trenching - 2024

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

Dot & Bar (Valley Title) - 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					
Off-Road	0.0118	0.1199	0.0819	2.2000e-004		5.0700e-003	5.0700e-003		4.6700e-003	4.6700e-003	0.0000	19.1116	19.1116	6.1200e-003	0.0000	19.2647
Total	**0.0118**	**0.1199**	**0.0819**	**2.2000e-004**		**5.0700e-003**	**5.0700e-003**		**4.6700e-003**	**4.6700e-003**	**0.0000**	**19.1116**	**19.1116**	**6.1200e-003**	**0.0000**	**19.2647**

Unmitigated Construction Off-Site

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

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

Off-Road	5.1000e-004	2.2100e-003	0.0314	5.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.9033	3.9033	1.2100e-003	0.0000	3.9335
Total	**5.1000e-004**	**2.2100e-003**	**0.0314**	**5.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**3.9033**	**3.9033**	**1.2100e-003**	**0.0000**	**3.9335**

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
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 Exterior Construction - 2024

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	0.0875	0.9696	1.0340	2.0500e-003		0.0351	0.0351		0.0324	0.0324	0.0000	178.6199	178.6199	0.0567	0.0000	180.0365

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

Total	**0.0875**	**0.9696**	**1.0340**	**2.0500e-003**		**0.0351**	**0.0351**		**0.0324**	**0.0324**	**0.0000**	**178.6199**	**178.6199**	**0.0567**	**0.0000**	**180.0365**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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	0.0246	0.5174	0.8286	1.1700e-003		1.7900e-003	1.7900e-003		1.7900e-003	1.7900e-003	0.0000	100.9247	100.9247	0.0315	0.0000	101.7131
Total	**0.0246**	**0.5174**	**0.8286**	**1.1700e-003**		**1.7900e-003**	**1.7900e-003**		**1.7900e-003**	**1.7900e-003**	**0.0000**	**100.9247**	**100.9247**	**0.0315**	**0.0000**	**101.7131**

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

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
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 Exterior Construction - 2025

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	0.1217	1.3230	1.4977	3.0000e-003		0.0473	0.0473		0.0437	0.0437	0.0000	260.6132	260.6132	0.0827	0.0000	262.6801
Total	**0.1217**	**1.3230**	**1.4977**	**3.0000e-003**		**0.0473**	**0.0473**		**0.0437**	**0.0437**	**0.0000**	**260.6132**	**260.6132**	**0.0827**	**0.0000**	**262.6801**

Date: 11/5/2021 11:14 AM

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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	0.0358	0.7549	1.2089	1.7100e-003		2.6100e-003	2.6100e-003		2.6100e-003	2.6100e-003	0.0000	147.2507	147.2507	0.0460	0.0000	148.4010
Total	**0.0358**	**0.7549**	**1.2089**	**1.7100e-003**		**2.6100e-003**	**2.6100e-003**		**2.6100e-003**	**2.6100e-003**	**0.0000**	**147.2507**	**147.2507**	**0.0460**	**0.0000**	**148.4010**

Mitigated Construction Off-Site

Dot & Bar (Valley Title) - 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**

3.7 Interior Construction - 2025

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	5.1534					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0784	0.7364	1.3143	2.1600e-003		0.0237	0.0237		0.0234	0.0234	0.0000	186.9600	186.9600	0.0295	0.0000	187.6970
Total	**5.2318**	**0.7364**	**1.3143**	**2.1600e-003**		**0.0237**	**0.0237**		**0.0234**	**0.0234**	**0.0000**	**186.9600**	**186.9600**	**0.0295**	**0.0000**	**187.6970**

Unmitigated Construction Off-Site

Dot & Bar (Valley Title) - 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					
Archit. Coating	5.1534					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0342	0.5426	1.4530	2.1600e-003		3.1400e-003	3.1400e-003		3.1400e-003	3.1400e-003	0.0000	186.9598	186.9598	0.0295	0.0000	187.6968
Total	**5.1876**	**0.5426**	**1.4530**	**2.1600e-003**		**3.1400e-003**	**3.1400e-003**		**3.1400e-003**	**3.1400e-003**	**0.0000**	**186.9598**	**186.9598**	**0.0295**	**0.0000**	**187.6968**

Mitigated Construction Off-Site

Dot & Bar (Valley Title) - 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**

3.7 Interior Construction - 2026

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	2.4324					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0370	0.3476	0.6204	1.0200e-003		0.0112	0.0112		0.0110	0.0110	0.0000	88.2451	88.2451	0.0139	0.0000	88.5930
Total	**2.4694**	**0.3476**	**0.6204**	**1.0200e-003**		**0.0112**	**0.0112**		**0.0110**	**0.0110**	**0.0000**	**88.2451**	**88.2451**	**0.0139**	**0.0000**	**88.5930**

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					
Archit. Coating	2.4324					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0162	0.2561	0.6858	1.0200e-003		1.4800e-003	1.4800e-003		1.4800e-003	1.4800e-003	0.0000	88.2450	88.2450	0.0139	0.0000	88.5929
Total	**2.4486**	**0.2561**	**0.6858**	**1.0200e-003**		**1.4800e-003**	**1.4800e-003**		**1.4800e-003**	**1.4800e-003**	**0.0000**	**88.2450**	**88.2450**	**0.0139**	**0.0000**	**88.5929**

Mitigated Construction Off-Site

Dot & Bar (Valley Title) - 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**

3.8 Site Work - 2026

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	1.7800e-003	0.0142	0.0187	3.0000e-005		5.8000e-004	5.8000e-004		5.6000e-004	5.6000e-004	0.0000	2.4567	2.4567	6.3000e-004	0.0000	2.4725
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.7800e-003**	**0.0142**	**0.0187**	**3.0000e-005**		**5.8000e-004**	**5.8000e-004**		**5.6000e-004**	**5.6000e-004**	**0.0000**	**2.4567**	**2.4567**	**6.3000e-004**	**0.0000**	**2.4725**

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					
Off-Road	2.4000e-004	1.0300e-003	0.0146	3.0000e-005		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	2.4567	2.4567	6.3000e-004	0.0000	2.4725
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.4000e-004**	**1.0300e-003**	**0.0146**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**2.4567**	**2.4567**	**6.3000e-004**	**0.0000**	**2.4725**

Mitigated Construction Off-Site

Date: 11/5/2021 11:14 AM

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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**

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	4.7407	3.1038	29.4329	0.0699	6.7319	0.0459	6.7778	1.6789	0.0428	1.7217	0.0000	6,457.3889	6,457.3889	0.3357	0.2986	6,554.7747
Unmitigated	4.7407	3.1038	29.4329	0.0699	6.7319	0.0459	6.7778	1.6789	0.0428	1.7217	0.0000	6,457.3889	6,457.3889	0.3357	0.2986	6,554.7747

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	9,240.20	2,090.05	660.01	16,711,565	16,711,565
Regional Shopping Center	1,857.94	2,269.97	1038.57	3,155,503	3,155,503
Total	11,098.14	4,360.01	1,698.58	19,867,067	19,867,067

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
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.522645	0.038170	0.234287	0.131557	0.023622	0.005919	0.009530	0.007639	0.001062	0.000406	0.022036	0.000684	0.002442
General Office Building	0.522645	0.038170	0.234287	0.131557	0.023622	0.005919	0.009530	0.007639	0.001062	0.000406	0.022036	0.000684	0.002442
Regional Shopping Center	0.522645	0.038170	0.234287	0.131557	0.023622	0.005919	0.009530	0.007639	0.001062	0.000406	0.022036	0.000684	0.002442

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable Energy

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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					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	9,930.4436	9,930.4436	0.4056	0.0492	9,955.2335
NaturalGas Mitigated	7.4000e-004	6.7200e-003	5.6500e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	7.3182	7.3182	1.4000e-004	1.3000e-004	7.3617
NaturalGas Unmitigated	7.4000e-004	6.7200e-003	5.6500e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	7.3182	7.3182	1.4000e-004	1.3000e-004	7.3617

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	137138	7.4000e-004	6.7200e-003	5.6500e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	7.3182	7.3182	1.4000e-004	1.3000e-004	7.3617
Total		**7.4000e-004**	**6.7200e-003**	**5.6500e-003**	**4.0000e-005**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**	**0.0000**	**7.3182**	**7.3182**	**1.4000e-004**	**1.3000e-004**	**7.3617**

Mitigated

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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					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	137138	7.4000e-004	6.7200e-003	5.6500e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	7.3182	7.3182	1.4000e-004	1.3000e-004	7.3617
Total		**7.4000e-004**	**6.7200e-003**	**5.6500e-003**	**4.0000e-005**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**	**0.0000**	**7.3182**	**7.3182**	**1.4000e-004**	**1.3000e-004**	**7.3617**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	2.87767e+006	1,054.6486	0.0431	5.2200e-003	1,057.2814
General Office Building	2.36092e+007	8,652.6311	0.3534	0.0428	8,674.2311
Regional Shopping Center	608916	223.1639	9.1100e-003	1.1000e-003	223.7210
Total		**9,930.4436**	**0.4056**	**0.0492**	**9,955.2335**

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.2743	2.2000e-004	0.0244	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.0475	0.0475	1.2000e-004	0.0000	0.0506
Unmitigated	5.2743	2.2000e-004	0.0244	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.0475	0.0475	1.2000e-004	0.0000	0.0506

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

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	0.7586					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.5134					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2500e-003	2.2000e-004	0.0244	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.0475	0.0475	1.2000e-004	0.0000	0.0506
Total	**5.2743**	**2.2000e-004**	**0.0244**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.0475**	**0.0475**	**1.2000e-004**	**0.0000**	**0.0506**

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	0.7586					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.5134					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2500e-003	2.2000e-004	0.0244	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.0475	0.0475	1.2000e-004	0.0000	0.0506
Total	**5.2743**	**2.2000e-004**	**0.0244**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.0475**	**0.0475**	**1.2000e-004**	**0.0000**	**0.0506**

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	776.8072	0.3310	0.1948	843.1284
Unmitigated	776.8072	0.3310	0.1948	843.1284

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	244.389 / 149.787	763.2486	0.3253	0.1914	828.4123
Regional Shopping Center	4.34139 / 2.66085	13.5585	5.7800e-003	3.4000e-003	14.7161
Total		**776.8072**	**0.3310**	**0.1948**	**843.1284**

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	244.389 / 149.787	763.2486	0.3253	0.1914	828.4123
Regional Shopping Center	4.34139 / 2.66085	13.5585	5.7800e-003	3.4000e-003	14.7161
Total		**776.8072**	**0.3310**	**0.1948**	**843.1284**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	272.0729	16.0790	0.0000	674.0490

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

Unmitigated	272.0729	16.0790	0.0000	674.0490

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	1278.78	259.5808	15.3408	0.0000	643.1004
Regional Shopping Center	61.54	12.4921	0.7383	0.0000	30.9486
Total		**272.0728**	**16.0790**	**0.0000**	**674.0490**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	1278.78	259.5808	15.3408	0.0000	643.1004

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

Regional Shopping Center	61.54	12.4921	0.7383	0.0000	30.9486
Total		**272.0728**	**16.0790**	**0.0000**	**674.0490**

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
Emergency Generator	2	0	50	3674	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (766 - 9999 HP)	0.3015	0.1478	0.1981	1.4500e-003		5.9100e-003	5.9100e-003		5.9100e-003	5.9100e-003	0.0000	139.9049	139.9049	0.0196	0.0000	140.3953

Dot & Bar (Valley Title) - Santa Clara County, Annual

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

Total	0.3015	0.1478	0.1981	1.4500e-003		5.9100e-003	5.9100e-003		5.9100e-003	5.9100e-003	0.0000	139.9049	139.9049	0.0196	0.0000	140.3953

11.0 Vegetation

Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Dot & Bar (Valley Title) - Existing Conditions

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	58.36	1000sqft	2.80	58,362.00	0
Parking Lot	95.00	1000sqft	0.00	95,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2027
Utility Company	San Jose Clean Energy				
CO2 Intensity (lb/MWhr)	807.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Default conditions for existing use

Land Use - PD = 58,362sf office and 95,000sf parking lot on 2.8 acre site

Construction Phase - operation only

Off-road Equipment - Operation only

Grading -

Vehicle Trips - Traffic provided trip gen rates and reductions

Vehicle Emission Factors - EMFAC2021Vehicle Emission Factors Santa Clara Co 2027

Fleet Mix - EMFAC2021 Fleet Mix Santa Clara Co 2027

Energy Use - Historical energy data

Table Name	Column Name	Default Value	New Value

Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	NumDays	3.00	1.00
tblConstructionPhase	PhaseEndDate	4/5/2023	4/3/2023
tblEnergyUse	LightingElect	4.72	3.88
tblEnergyUse	LightingElect	0.88	0.35
tblEnergyUse	T24E	8.01	5.45
tblEnergyUse	T24NG	19.90	16.14
tblFleetMix	HHD	6.2400e-003	7.6390e-003
tblFleetMix	HHD	6.2400e-003	7.6390e-003
tblFleetMix	LDA	0.58	0.52
tblFleetMix	LDA	0.58	0.52
tblFleetMix	LDT1	0.06	0.04
tblFleetMix	LDT1	0.06	0.04
tblFleetMix	LDT2	0.18	0.23
tblFleetMix	LDT2	0.18	0.23
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD2	5.2570e-003	5.9190e-003
tblFleetMix	LHD2	5.2570e-003	5.9190e-003
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MH	2.6240e-003	2.4420e-003
tblFleetMix	MH	2.6240e-003	2.4420e-003
tblFleetMix	MHD	8.1590e-003	9.5300e-003
tblFleetMix	MHD	8.1590e-003	9.5300e-003
tblFleetMix	OBUS	8.7700e-004	1.0620e-003
tblFleetMix	OBUS	8.7700e-004	1.0620e-003
tblFleetMix	SBUS	8.7400e-004	6.8400e-004

Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblFleetMix	SBUS	8.7400e-004	6.8400e-004
tblFleetMix	UBUS	3.5600e-004	4.0600e-004
tblFleetMix	UBUS	3.5600e-004	4.0600e-004
tblLandUse	LandUseSquareFeet	58,360.00	58,362.00
tblLandUse	LotAcreage	1.34	2.80
tblLandUse	LotAcreage	2.18	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblVehicleEF	HHD	0.02	0.22
tblVehicleEF	HHD	0.05	0.11
tblVehicleEF	HHD	6.31	5.12
tblVehicleEF	HHD	0.41	0.71
tblVehicleEF	HHD	6.0890e-003	7.8200e-004
tblVehicleEF	HHD	991.82	777.09
tblVehicleEF	HHD	1,327.03	1,519.26
tblVehicleEF	HHD	0.05	0.01
tblVehicleEF	HHD	0.16	0.13
tblVehicleEF	HHD	0.21	0.24
tblVehicleEF	HHD	4.0000e-006	7.0000e-006
tblVehicleEF	HHD	5.29	3.97
tblVehicleEF	HHD	2.62	1.63
tblVehicleEF	HHD	2.32	2.75
tblVehicleEF	HHD	2.3520e-003	1.9390e-003
tblVehicleEF	HHD	0.06	0.08
tblVehicleEF	HHD	0.04	0.04

Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	2.2500e-003	1.8490e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8950e-003	8.7840e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	2.0000e-006	9.2000e-005
tblVehicleEF	HHD	7.0000e-005	2.9000e-005
tblVehicleEF	HHD	0.42	0.32
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	3.0000e-005	2.6100e-004
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	HHD	9.2270e-003	6.7480e-003
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	2.0000e-006	9.2000e-005
tblVehicleEF	HHD	7.0000e-005	2.9000e-005
tblVehicleEF	HHD	0.49	0.57
tblVehicleEF	HHD	1.0000e-006	0.00
tblVehicleEF	HHD	0.07	0.12
tblVehicleEF	HHD	3.0000e-005	2.6100e-004
tblVehicleEF	HHD	3.0000e-006	0.00
tblVehicleEF	LDA	1.2360e-003	1.5380e-003
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.45	0.54
tblVehicleEF	LDA	1.88	2.42
tblVehicleEF	LDA	224.27	230.34
tblVehicleEF	LDA	47.58	59.41

Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleEF	LDA	3.4320e-003	3.5100e-003
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.14	0.20
tblVehicleEF	LDA	0.04	7.1090e-003
tblVehicleEF	LDA	1.1280e-003	1.0170e-003
tblVehicleEF	LDA	1.5160e-003	1.7230e-003
tblVehicleEF	LDA	0.02	2.4880e-003
tblVehicleEF	LDA	1.0380e-003	9.3500e-004
tblVehicleEF	LDA	1.3940e-003	1.5840e-003
tblVehicleEF	LDA	0.03	0.25
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	4.3770e-003	5.6030e-003
tblVehicleEF	LDA	0.03	0.19
tblVehicleEF	LDA	0.15	0.24
tblVehicleEF	LDA	2.1190e-003	2.2770e-003
tblVehicleEF	LDA	4.5000e-004	5.8700e-004
tblVehicleEF	LDA	0.03	0.25
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	6.3610e-003	8.1650e-003
tblVehicleEF	LDA	0.03	0.19
tblVehicleEF	LDA	0.16	0.26
tblVehicleEF	LDT1	2.3950e-003	4.4930e-003
tblVehicleEF	LDT1	0.04	0.09
tblVehicleEF	LDT1	0.66	1.12
tblVehicleEF	LDT1	2.02	4.20
tblVehicleEF	LDT1	270.32	311.08

Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleEF	LDT1	57.96	80.98
tblVehicleEF	LDT1	4.5300e-003	7.3650e-003
tblVehicleEF	LDT1	0.02	0.04
tblVehicleEF	LDT1	0.05	0.09
tblVehicleEF	LDT1	0.18	0.32
tblVehicleEF	LDT1	0.04	9.1980e-003
tblVehicleEF	LDT1	1.3400e-003	1.5760e-003
tblVehicleEF	LDT1	1.7900e-003	2.4760e-003
tblVehicleEF	LDT1	0.02	3.2190e-003
tblVehicleEF	LDT1	1.2320e-003	1.4490e-003
tblVehicleEF	LDT1	1.6460e-003	2.2770e-003
tblVehicleEF	LDT1	0.06	0.51
tblVehicleEF	LDT1	0.12	0.14
tblVehicleEF	LDT1	0.05	0.00
tblVehicleEF	LDT1	9.7750e-003	0.02
tblVehicleEF	LDT1	0.07	0.39
tblVehicleEF	LDT1	0.20	0.42
tblVehicleEF	LDT1	2.5540e-003	3.0750e-003
tblVehicleEF	LDT1	5.4800e-004	8.0100e-004
tblVehicleEF	LDT1	0.06	0.51
tblVehicleEF	LDT1	0.12	0.14
tblVehicleEF	LDT1	0.05	0.00
tblVehicleEF	LDT1	0.01	0.03
tblVehicleEF	LDT1	0.07	0.39
tblVehicleEF	LDT1	0.22	0.46
tblVehicleEF	LDT2	2.2120e-003	2.2390e-003
tblVehicleEF	LDT2	0.05	0.07
tblVehicleEF	LDT2	0.63	0.71
tblVehicleEF	LDT2	2.47	3.08

Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleEF	LDT2	284.70	320.53
tblVehicleEF	LDT2	61.63	81.54
tblVehicleEF	LDT2	4.6700e-003	5.0850e-003
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.04	0.05
tblVehicleEF	LDT2	0.20	0.28
tblVehicleEF	LDT2	0.04	8.8520e-003
tblVehicleEF	LDT2	1.2100e-003	1.1830e-003
tblVehicleEF	LDT2	1.5700e-003	1.9260e-003
tblVehicleEF	LDT2	0.02	3.0980e-003
tblVehicleEF	LDT2	1.1140e-003	1.0890e-003
tblVehicleEF	LDT2	1.4440e-003	1.7710e-003
tblVehicleEF	LDT2	0.05	0.27
tblVehicleEF	LDT2	0.10	0.07
tblVehicleEF	LDT2	0.05	0.00
tblVehicleEF	LDT2	8.6400e-003	8.4950e-003
tblVehicleEF	LDT2	0.06	0.20
tblVehicleEF	LDT2	0.23	0.31
tblVehicleEF	LDT2	2.6900e-003	3.1680e-003
tblVehicleEF	LDT2	5.8200e-004	8.0600e-004
tblVehicleEF	LDT2	0.05	0.27
tblVehicleEF	LDT2	0.10	0.07
tblVehicleEF	LDT2	0.05	0.00
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.20
tblVehicleEF	LDT2	0.25	0.34
tblVehicleEF	LHD1	4.5230e-003	4.8530e-003
tblVehicleEF	LHD1	6.3000e-003	5.7620e-003
tblVehicleEF	LHD1	0.01	0.02

Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleEF	LHD1	0.18	0.19
tblVehicleEF	LHD1	0.57	0.71
tblVehicleEF	LHD1	0.96	2.15
tblVehicleEF	LHD1	8.56	8.33
tblVehicleEF	LHD1	734.83	729.06
tblVehicleEF	LHD1	10.77	17.05
tblVehicleEF	LHD1	7.3900e-004	6.2200e-004
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	0.05	0.04
tblVehicleEF	LHD1	0.44	0.46
tblVehicleEF	LHD1	0.26	0.38
tblVehicleEF	LHD1	8.8400e-004	6.8500e-004
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	9.8520e-003	9.4090e-003
tblVehicleEF	LHD1	8.1460e-003	0.01
tblVehicleEF	LHD1	2.2600e-004	1.7400e-004
tblVehicleEF	LHD1	8.4600e-004	6.5600e-004
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.4630e-003	2.3520e-003
tblVehicleEF	LHD1	7.7480e-003	0.01
tblVehicleEF	LHD1	2.0700e-004	1.6000e-004
tblVehicleEF	LHD1	1.6310e-003	0.11
tblVehicleEF	LHD1	0.06	0.03
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	8.6800e-004	0.00
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	0.18	0.16
tblVehicleEF	LHD1	0.06	0.10

Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleEF	LHD1	8.3000e-005	8.1000e-005
tblVehicleEF	LHD1	7.1690e-003	7.1170e-003
tblVehicleEF	LHD1	1.0700e-004	1.6900e-004
tblVehicleEF	LHD1	1.6310e-003	0.11
tblVehicleEF	LHD1	0.06	0.03
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	8.6800e-004	0.00
tblVehicleEF	LHD1	0.10	0.08
tblVehicleEF	LHD1	0.18	0.16
tblVehicleEF	LHD1	0.06	0.10
tblVehicleEF	LHD2	2.7350e-003	2.7890e-003
tblVehicleEF	LHD2	5.8140e-003	5.4840e-003
tblVehicleEF	LHD2	6.0230e-003	0.01
tblVehicleEF	LHD2	0.13	0.14
tblVehicleEF	LHD2	0.52	0.46
tblVehicleEF	LHD2	0.53	1.16
tblVehicleEF	LHD2	13.44	13.54
tblVehicleEF	LHD2	713.12	776.37
tblVehicleEF	LHD2	6.94	9.14
tblVehicleEF	LHD2	1.7040e-003	1.6800e-003
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.08	0.08
tblVehicleEF	LHD2	0.54	0.66
tblVehicleEF	LHD2	0.15	0.21
tblVehicleEF	LHD2	1.4770e-003	1.4220e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.02

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tblVehicleEF	LHD2	1.1400e-004	7.4000e-005
tblVehicleEF	LHD2	1.4140e-003	1.3600e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	2.7030e-003	2.6620e-003
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	1.0400e-004	6.8000e-005
tblVehicleEF	LHD2	7.8300e-004	0.06
tblVehicleEF	LHD2	0.03	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	4.3200e-004	0.00
tblVehicleEF	LHD2	0.10	0.10
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	LHD2	1.2800e-004	1.3000e-004
tblVehicleEF	LHD2	6.8810e-003	7.4740e-003
tblVehicleEF	LHD2	6.9000e-005	9.0000e-005
tblVehicleEF	LHD2	7.8300e-004	0.06
tblVehicleEF	LHD2	0.03	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.3200e-004	0.00
tblVehicleEF	LHD2	0.12	0.11
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	MCY	0.32	0.15
tblVehicleEF	MCY	0.25	0.17
tblVehicleEF	MCY	17.99	11.71
tblVehicleEF	MCY	9.14	7.90
tblVehicleEF	MCY	209.89	186.47
tblVehicleEF	MCY	59.90	45.31

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleEF	MCY	0.07	0.04
tblVehicleEF	MCY	0.02	7.0870e-003
tblVehicleEF	MCY	1.14	0.54
tblVehicleEF	MCY	0.27	0.12
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	2.0840e-003	1.9590e-003
tblVehicleEF	MCY	2.9100e-003	3.4510e-003
tblVehicleEF	MCY	5.0400e-003	4.2000e-003
tblVehicleEF	MCY	1.9450e-003	1.8300e-003
tblVehicleEF	MCY	2.7280e-003	3.2360e-003
tblVehicleEF	MCY	0.90	3.85
tblVehicleEF	MCY	0.65	3.56
tblVehicleEF	MCY	0.48	0.00
tblVehicleEF	MCY	2.15	0.96
tblVehicleEF	MCY	0.49	3.78
tblVehicleEF	MCY	1.90	1.23
tblVehicleEF	MCY	2.0770e-003	1.8430e-003
tblVehicleEF	MCY	5.9300e-004	4.4800e-004
tblVehicleEF	MCY	0.90	0.08
tblVehicleEF	MCY	0.65	3.56
tblVehicleEF	MCY	0.48	0.00
tblVehicleEF	MCY	2.69	1.17
tblVehicleEF	MCY	0.49	3.78
tblVehicleEF	MCY	2.07	1.34
tblVehicleEF	MDV	2.3750e-003	2.6750e-003
tblVehicleEF	MDV	0.05	0.08
tblVehicleEF	MDV	0.64	0.76
tblVehicleEF	MDV	2.58	3.20
tblVehicleEF	MDV	343.09	384.38

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tblVehicleEF	MDV	72.97	97.04
tblVehicleEF	MDV	6.1060e-003	6.4690e-003
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.05	0.07
tblVehicleEF	MDV	0.22	0.32
tblVehicleEF	MDV	0.04	8.9330e-003
tblVehicleEF	MDV	1.2450e-003	1.1780e-003
tblVehicleEF	MDV	1.6000e-003	1.8910e-003
tblVehicleEF	MDV	0.02	3.1260e-003
tblVehicleEF	MDV	1.1480e-003	1.0850e-003
tblVehicleEF	MDV	1.4710e-003	1.7380e-003
tblVehicleEF	MDV	0.06	0.31
tblVehicleEF	MDV	0.11	0.08
tblVehicleEF	MDV	0.06	0.00
tblVehicleEF	MDV	9.5430e-003	0.01
tblVehicleEF	MDV	0.06	0.24
tblVehicleEF	MDV	0.26	0.37
tblVehicleEF	MDV	3.2410e-003	3.7980e-003
tblVehicleEF	MDV	6.8900e-004	9.5900e-004
tblVehicleEF	MDV	0.06	0.31
tblVehicleEF	MDV	0.11	0.08
tblVehicleEF	MDV	0.06	0.00
tblVehicleEF	MDV	0.01	0.02
tblVehicleEF	MDV	0.06	0.24
tblVehicleEF	MDV	0.28	0.41
tblVehicleEF	MH	6.9300e-003	8.8150e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.58	0.77
tblVehicleEF	MH	1.80	2.17

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tblVehicleEF	MH	1,418.06	1,669.13
tblVehicleEF	MH	16.70	21.21
tblVehicleEF	MH	0.06	0.07
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	1.17	1.40
tblVehicleEF	MH	0.24	0.30
tblVehicleEF	MH	0.13	0.04
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	2.3200e-004	2.6700e-004
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	3.2900e-003	3.3210e-003
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	2.1400e-004	2.4600e-004
tblVehicleEF	MH	0.47	26.64
tblVehicleEF	MH	0.04	6.73
tblVehicleEF	MH	0.18	0.00
tblVehicleEF	MH	0.05	0.07
tblVehicleEF	MH	9.6720e-003	0.16
tblVehicleEF	MH	0.08	0.10
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	1.6500e-004	2.1000e-004
tblVehicleEF	MH	0.47	26.64
tblVehicleEF	MH	0.04	6.73
tblVehicleEF	MH	0.18	0.00
tblVehicleEF	MH	0.06	0.08
tblVehicleEF	MH	9.6720e-003	0.16
tblVehicleEF	MH	0.09	0.11
tblVehicleEF	MHD	3.6950e-003	0.01

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleEF	MHD	1.2530e-003	9.5450e-003
tblVehicleEF	MHD	8.5300e-003	7.5570e-003
tblVehicleEF	MHD	0.40	0.66
tblVehicleEF	MHD	0.18	0.22
tblVehicleEF	MHD	0.94	0.88
tblVehicleEF	MHD	68.38	154.32
tblVehicleEF	MHD	1,034.78	1,175.45
tblVehicleEF	MHD	8.72	7.64
tblVehicleEF	MHD	9.8750e-003	0.02
tblVehicleEF	MHD	0.13	0.15
tblVehicleEF	MHD	7.4170e-003	5.5230e-003
tblVehicleEF	MHD	0.37	0.81
tblVehicleEF	MHD	1.44	0.81
tblVehicleEF	MHD	1.70	1.37
tblVehicleEF	MHD	2.4000e-004	1.1860e-003
tblVehicleEF	MHD	0.13	0.04
tblVehicleEF	MHD	7.0420e-003	8.3150e-003
tblVehicleEF	MHD	1.1100e-004	9.3000e-005
tblVehicleEF	MHD	2.3000e-004	1.1340e-003
tblVehicleEF	MHD	0.06	0.02
tblVehicleEF	MHD	6.7300e-003	7.9470e-003
tblVehicleEF	MHD	1.0200e-004	8.5000e-005
tblVehicleEF	MHD	3.1800e-004	0.02
tblVehicleEF	MHD	0.02	4.6660e-003
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	1.7500e-004	0.00
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.04	0.04

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tblVehicleEF	MHD	6.4900e-004	1.4270e-003
tblVehicleEF	MHD	9.8700e-003	0.01
tblVehicleEF	MHD	8.6000e-005	7.6000e-005
tblVehicleEF	MHD	3.1800e-004	0.02
tblVehicleEF	MHD	0.02	4.6660e-003
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	1.7500e-004	0.00
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.05	0.04
tblVehicleEF	OBUS	7.0730e-003	7.5660e-003
tblVehicleEF	OBUS	2.7540e-003	0.01
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.62	0.54
tblVehicleEF	OBUS	0.33	0.37
tblVehicleEF	OBUS	1.69	1.70
tblVehicleEF	OBUS	96.38	89.08
tblVehicleEF	OBUS	1,261.24	1,320.54
tblVehicleEF	OBUS	14.17	13.66
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.13	0.16
tblVehicleEF	OBUS	0.02	0.01
tblVehicleEF	OBUS	0.41	0.36
tblVehicleEF	OBUS	1.44	0.90
tblVehicleEF	OBUS	1.12	1.00
tblVehicleEF	OBUS	1.3500e-004	3.7200e-004
tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	7.6000e-003	0.01
tblVehicleEF	OBUS	1.5100e-004	1.2700e-004

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleEF	OBUS	1.3000e-004	3.5600e-004
tblVehicleEF	OBUS	0.06	0.02
tblVehicleEF	OBUS	7.2580e-003	0.01
tblVehicleEF	OBUS	1.3900e-004	1.1700e-004
tblVehicleEF	OBUS	1.0730e-003	0.07
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.04
tblVehicleEF	OBUS	4.8500e-004	0.00
tblVehicleEF	OBUS	0.02	0.04
tblVehicleEF	OBUS	0.04	0.08
tblVehicleEF	OBUS	0.08	0.08
tblVehicleEF	OBUS	9.1500e-004	8.4100e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	1.4000e-004	1.3500e-004
tblVehicleEF	OBUS	1.0730e-003	0.07
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.06	0.05
tblVehicleEF	OBUS	4.8500e-004	0.00
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	0.04	0.08
tblVehicleEF	OBUS	0.09	0.09
tblVehicleEF	SBUS	0.06	0.08
tblVehicleEF	SBUS	5.1390e-003	0.09
tblVehicleEF	SBUS	5.5510e-003	5.0470e-003
tblVehicleEF	SBUS	2.58	1.76
tblVehicleEF	SBUS	0.42	0.81
tblVehicleEF	SBUS	0.77	0.68
tblVehicleEF	SBUS	343.48	187.75
tblVehicleEF	SBUS	1,012.23	995.30

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleEF	SBUS	4.55	3.88
tblVehicleEF	SBUS	0.05	0.02
tblVehicleEF	SBUS	0.13	0.12
tblVehicleEF	SBUS	5.5840e-003	4.6260e-003
tblVehicleEF	SBUS	3.12	1.26
tblVehicleEF	SBUS	3.92	2.08
tblVehicleEF	SBUS	1.00	0.51
tblVehicleEF	SBUS	2.7970e-003	1.0210e-003
tblVehicleEF	SBUS	0.74	0.04
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	5.7000e-005	4.3000e-005
tblVehicleEF	SBUS	2.6760e-003	9.7600e-004
tblVehicleEF	SBUS	0.32	0.02
tblVehicleEF	SBUS	2.6950e-003	2.6290e-003
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	SBUS	5.3000e-005	4.0000e-005
tblVehicleEF	SBUS	6.7700e-004	0.03
tblVehicleEF	SBUS	6.5220e-003	8.5010e-003
tblVehicleEF	SBUS	0.29	0.19
tblVehicleEF	SBUS	3.1500e-004	0.00
tblVehicleEF	SBUS	0.07	0.05
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	SBUS	3.2730e-003	1.7010e-003
tblVehicleEF	SBUS	9.6760e-003	9.2440e-003
tblVehicleEF	SBUS	4.5000e-005	3.8000e-005
tblVehicleEF	SBUS	6.7700e-004	0.03
tblVehicleEF	SBUS	6.5220e-003	8.5010e-003

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleEF	SBUS	0.41	0.31
tblVehicleEF	SBUS	3.1500e-004	0.00
tblVehicleEF	SBUS	0.09	0.15
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	UBUS	1.74	0.53
tblVehicleEF	UBUS	1.9120e-003	3.7050e-003
tblVehicleEF	UBUS	13.20	6.31
tblVehicleEF	UBUS	0.14	0.48
tblVehicleEF	UBUS	1,654.13	1,063.59
tblVehicleEF	UBUS	1.40	3.13
tblVehicleEF	UBUS	0.28	0.16
tblVehicleEF	UBUS	1.1770e-003	5.9640e-003
tblVehicleEF	UBUS	0.71	0.29
tblVehicleEF	UBUS	0.01	0.04
tblVehicleEF	UBUS	0.07	0.13
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	5.1700e-003	5.5380e-003
tblVehicleEF	UBUS	1.5000e-005	1.2000e-005
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	8.3320e-003	0.01
tblVehicleEF	UBUS	4.9450e-003	5.2950e-003
tblVehicleEF	UBUS	1.4000e-005	1.1000e-005
tblVehicleEF	UBUS	3.2000e-005	0.02
tblVehicleEF	UBUS	3.3900e-004	4.7600e-003
tblVehicleEF	UBUS	1.6000e-005	0.00
tblVehicleEF	UBUS	0.03	0.06
tblVehicleEF	UBUS	6.9000e-005	0.01
tblVehicleEF	UBUS	8.0430e-003	0.01

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleEF	UBUS	0.01	8.5740e-003
tblVehicleEF	UBUS	1.4000e-005	3.1000e-005
tblVehicleEF	UBUS	3.2000e-005	0.02
tblVehicleEF	UBUS	3.3900e-004	4.7600e-003
tblVehicleEF	UBUS	1.6000e-005	0.00
tblVehicleEF	UBUS	1.78	0.60
tblVehicleEF	UBUS	6.9000e-005	0.01
tblVehicleEF	UBUS	8.8060e-003	0.01
tblVehicleTrips	ST_TR	2.21	1.52
tblVehicleTrips	SU_TR	0.70	0.48
tblVehicleTrips	WD_TR	9.74	6.72

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2666	1.0000e-005	1.4100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.7400e-003	2.7400e-003	1.0000e-005	0.0000	2.9200e-003
Energy	5.1000e-003	0.0464	0.0389	2.8000e-004		3.5200e-003	3.5200e-003		3.5200e-003	3.5200e-003	0.0000	429.8937	429.8937	0.0165	2.8000e-003	431.1408
Mobile	0.1614	0.1087	1.0311	2.4900e-003	0.2403	1.6300e-003	0.2420	0.0599	1.5200e-003	0.0615	0.0000	230.0686	230.0686	0.0116	0.0105	233.4791
Waste						0.0000	0.0000		0.0000	0.0000	11.0163	0.0000	11.0163	0.6511	0.0000	27.2925
Water						0.0000	0.0000		0.0000	0.0000	3.2907	28.7245	32.0153	0.3392	8.1200e-003	42.9149
Total	**0.4331**	**0.1550**	**1.0715**	**2.7700e-003**	**0.2403**	**5.1500e-003**	**0.2455**	**0.0599**	**5.0400e-003**	**0.0650**	**14.3071**	**688.6896**	**702.9967**	**1.0183**	**0.0214**	**734.8302**

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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	0.2666	1.0000e-005	1.4100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.7400e-003	2.7400e-003	1.0000e-005	0.0000	2.9200e-003
Energy	5.1000e-003	0.0464	0.0389	2.8000e-004		3.5200e-003	3.5200e-003		3.5200e-003	3.5200e-003	0.0000	429.8937	429.8937	0.0165	2.8000e-003	431.1408
Mobile	0.1614	0.1087	1.0311	2.4900e-003	0.2403	1.6300e-003	0.2420	0.0599	1.5200e-003	0.0615	0.0000	230.0686	230.0686	0.0116	0.0105	233.4791
Waste						0.0000	0.0000		0.0000	0.0000	11.0163	0.0000	11.0163	0.6511	0.0000	27.2925
Water						0.0000	0.0000		0.0000	0.0000	3.2907	28.7245	32.0153	0.3392	8.1200e-003	42.9149
Total	**0.4331**	**0.1550**	**1.0715**	**2.7700e-003**	**0.2403**	**5.1500e-003**	**0.2455**	**0.0599**	**5.0400e-003**	**0.0650**	**14.3071**	**688.6896**	**702.9967**	**1.0183**	**0.0214**	**734.8302**

	ROG	NOx	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**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	0.1614	0.1087	1.0311	2.4900e-003	0.2403	1.6300e-003	0.2420	0.0599	1.5200e-003	0.0615	0.0000	230.0686	230.0686	0.0116	0.0105	233.4791
Unmitigated	0.1614	0.1087	1.0311	2.4900e-003	0.2403	1.6300e-003	0.2420	0.0599	1.5200e-003	0.0615	0.0000	230.0686	230.0686	0.0116	0.0105	233.4791

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	392.18	88.71	28.01	709,284	709,284
Parking Lot	0.00	0.00	0.00		
Total	392.18	88.71	28.01	709,284	709,284

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
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	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
General Office Building	0.522645	0.038170	0.234287	0.131557	0.023622	0.005919	0.009530	0.007639	0.001062	0.000406	0.022036	0.000684	0.002442
Parking Lot	0.522645	0.038170	0.234287	0.131557	0.023622	0.005919	0.009530	0.007639	0.001062	0.000406	0.022036	0.000684	0.002442

5.0 Energy Detail

Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Historical Energy Use: Y

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	379.4402	379.4402	0.0155	1.8800e-003	380.3874
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	379.4402	379.4402	0.0155	1.8800e-003	380.3874
NaturalGas Mitigated	5.1000e-003	0.0464	0.0389	2.8000e-004		3.5200e-003	3.5200e-003		3.5200e-003	3.5200e-003	0.0000	50.4536	50.4536	9.7000e-004	9.2000e-004	50.7534
NaturalGas Unmitigated	5.1000e-003	0.0464	0.0389	2.8000e-004		3.5200e-003	3.5200e-003		3.5200e-003	3.5200e-003	0.0000	50.4536	50.4536	9.7000e-004	9.2000e-004	50.7534

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	945464	5.1000e-003	0.0464	0.0389	2.8000e-004		3.5200e-003	3.5200e-003		3.5200e-003	3.5200e-003	0.0000	50.4536	50.4536	9.7000e-004	9.2000e-004	50.7534
Parking Lot	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

Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Total		**5.1000e-003**	**0.0464**	**0.0389**	**2.8000e-004**		**3.5200e-003**	**3.5200e-003**		**3.5200e-003**	**3.5200e-003**	**0.0000**	**50.4536**	**50.4536**	**9.7000e-004**	**9.2000e-004**	**50.7534**

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					
General Office Building	945464	5.1000e-003	0.0464	0.0389	2.8000e-004		3.5200e-003	3.5200e-003		3.5200e-003	3.5200e-003	0.0000	50.4536	50.4536	9.7000e-004	9.2000e-004	50.7534
Parking Lot	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		**5.1000e-003**	**0.0464**	**0.0389**	**2.8000e-004**		**3.5200e-003**	**3.5200e-003**		**3.5200e-003**	**3.5200e-003**	**0.0000**	**50.4536**	**50.4536**	**9.7000e-004**	**9.2000e-004**	**50.7534**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	1.00208e+006	367.2542	0.0150	1.8200e-003	368.1710
Parking Lot	33250	12.1859	5.0000e-004	6.0000e-005	12.2163
Total		**379.4402**	**0.0155**	**1.8800e-003**	**380.3874**

Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	1.00208e+006	367.2542	0.0150	1.8200e-003	368.1710
Parking Lot	33250	12.1859	5.0000e-004	6.0000e-005	12.2163
Total		**379.4402**	**0.0155**	**1.8800e-003**	**380.3874**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2666	1.0000e-005	1.4100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.7400e-003	2.7400e-003	1.0000e-005	0.0000	2.9200e-003
Unmitigated	0.2666	1.0000e-005	1.4100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.7400e-003	2.7400e-003	1.0000e-005	0.0000	2.9200e-003

Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.0324					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2341					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3000e-004	1.0000e-005	1.4100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.7400e-003	2.7400e-003	1.0000e-005	0.0000	2.9200e-003
Total	**0.2666**	**1.0000e-005**	**1.4100e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.7400e-003**	**2.7400e-003**	**1.0000e-005**	**0.0000**	**2.9200e-003**

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	0.0324					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2341					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3000e-004	1.0000e-005	1.4100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.7400e-003	2.7400e-003	1.0000e-005	0.0000	2.9200e-003

Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Total	**0.2666**	**1.0000e-005**	**1.4100e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.7400e-003**	**2.7400e-003**	**1.0000e-005**	**0.0000**	**2.9200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	32.0153	0.3392	8.1200e-003	42.9149
Unmitigated	32.0153	0.3392	8.1200e-003	42.9149

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	10.3725 / 6.35736	32.0153	0.3392	8.1200e-003	42.9149
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000

Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Total	**32.0153**	**0.3392**	**8.1200e-003**	**42.9149**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	10.3725 / 6.35736	32.0153	0.3392	8.1200e-003	42.9149
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**32.0153**	**0.3392**	**8.1200e-003**	**42.9149**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	11.0163	0.6511	0.0000	27.2925

Dot & Bar (Valley Title) - Existing Conditions - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated	11.0163	0.6511	0.0000	27.2925

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	54.27	11.0163	0.6511	0.0000	27.2925
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**11.0163**	**0.6511**	**0.0000**	**27.2925**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	54.27	11.0163	0.6511	0.0000	27.2925
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**11.0163**	**0.6511**	**0.0000**	**27.2925**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

Attachment 3: EMFAC2021 Emissions and CARB SAFE Off-Model Adjustment Factors

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	10	0	60	0	532	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	648	0	10640
Site Preparation	10	0	650	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	7020	0	0
Grading	18	0	3546	0	36358	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	38296.8	0	727160
Trenching	25	0	750	0	2240	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	8100	0	44800
Exterior Construction	681	322	306450	144900	17958	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	3309660	1057770	131093.4
Interior Construction	136	0	50048	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	540518.4	0	0
Site Work	23	0	2507	0	400	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	27075.6	0	2920

Number of Days Per Year					
2023	4/3/23	12/31/23	273	234	
2024	1/1/24	12/31/24	366	314	
2025	1/1/25	12/31/25	365	313	
2026	1/1/26	7/22/26	203	174	
			1207	**1035**	***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	4/3/2023	4/8/2023	6	6
Site Preparation	4/4/2023	6/17/2023	6	65
Grading	7/4/2023	2/17/2024	6	197
Trenching	4/19/2024	5/23/2024	6	30
Exterior Construction	6/1/2024	11/7/2025	6	450
Interior Construction	3/15/2025	5/18/2026	6	368
Site Work	3/18/2026	7/22/2026	6	109

Summary of Construction Traffic Emissions (EMFAC2021)

Pollutants 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														
2023	0.1486	1.2233	1.8361	0.0101	0.4403	0.0784	0.5187	0.0662	0.0331	0.0993	983.4366	0.0598	0.1179	1020.0792
2024	0.1868	1.5683	2.3140	0.0134	0.5902	0.1044	0.6947	0.0888	0.0437	0.1325	1296.8980	0.0772	0.1553	1345.0931
2025	0.1755	1.4952	2.1786	0.0131	0.5886	0.1034	0.6920	0.0886	0.0430	0.1316	1269.1052	0.0739	0.1516	1316.1432
2026	0.0922	0.7957	1.1484	0.0071	0.3274	0.0573	0.3846	0.0493	0.0237	0.0729	692.3036	0.0393	0.0825	717.8821
Toxic Air Contaminants (0.5 Mile Trip Length)														
2023	0.1220	0.3380	0.6173	0.0008	0.0211	0.0041	0.0252	0.0032	0.0019	0.0051	80.6489	0.0163	0.0128	84.8807
2024	0.1549	0.4463	0.7880	0.0011	0.0283	0.0054	0.0337	0.0043	0.0025	0.0067	106.2002	0.0211	0.0168	111.7438
2025	0.1469	0.4376	0.7500	0.0011	0.0282	0.0053	0.0336	0.0042	0.0024	0.0067	103.8369	0.0202	0.0164	109.2310
2026	0.0778	0.2392	0.3993	0.0006	0.0157	0.0029	0.0186	0.0024	0.0013	0.0037	56.5965	0.0108	0.0089	59.5226

CalEEMod EMFAC2021 Fleet Mix Input

Year 2027

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Ele	0.522645	0.03817	0.234287	0.131557	0.023622	0.005919	0.00953	0.007639	0.001062	0.000406	0.022036	0.000684	0.002442
General Office Building	0.522645	0.03817	0.234287	0.131557	0.023622	0.005919	0.00953	0.007639	0.001062	0.000406	0.022036	0.000684	0.002442
Regional Shopping Center	0.522645	0.03817	0.234287	0.131557	0.023622	0.005919	0.00953	0.007639	0.001062	0.000406	0.022036	0.000684	0.002442

CalEEMod EMFAC2021 Fleet Mix Input — Year 2027

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.522645	0.03817	0.234287	0.131557	0.023622	0.005919	0.00953	0.007639	0.001062	0.000406	0.022036	0.000684	0.002442
Parking Lot	0.522645	0.03817	0.234287	0.131557	0.023622	0.005919	0.00953	0.007639	0.001062	0.000406	0.022036	0.000684	0.002442

CalEEMod EMFAC2021 Emission Factors Input

Year 2027

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.004853	0.002789	0.014761	0.218219477	0.007566	0	0	0.078917	0
A	CH4_RUNEX	0.001538	0.004493	0.002239	0.002675	0.005762	0.005484	0.009545	0.10604745	0.010157	0.533948107	0.151026	0.08989	0.008815
A	CH4_STREX	0.053702	0.085745	0.069469	0.078225	0.01948	0.010299	0.007557	6.86812E-08	0.015372	0.003705389	0.168253	0.005047	0.024503
A	CO_IDLEX	0	0	0	0	0.191268	0.138583	0.659814	5.124777958	0.540387	0	0	1.761417	0
A	CO_RUNEX	0.544775	1.115721	0.709007	0.758324	0.707092	0.45901	0.224798	0.708774151	0.368247	6.308397807	11.71041	0.810356	0.76998
A	CO_STREX	2.41599	4.203275	3.084615	3.203013	2.154654	1.156785	0.875978	0.000781552	1.69805	0.484950424	7.90164	0.676847	2.168054
A	CO2_NBIO_IDLEX	0	0	0	0	8.334523	13.53813	154.3221	777.0894715	89.07619	0	0	187.7451	0
A	CO2_NBIO_RUNEX	230.3437	311.0786	320.5327	384.3773	729.0592	776.3679	1175.453	1519.263619	1320.543	1063.591211	186.4654	995.3014	1669.128
A	CO2_NBIO_STREX	59.41318	80.98453	81.53887	97.04411	17.04736	9.141066	7.63784	0.012735171	13.65764	3.127643155	45.31465	3.877311	21.20521
A	NOX_IDLEX	0	0	0	0	0.042288	0.083489	0.810816	3.96507916	0.356426	0	0	1.262512	0
A	NOX_RUNEX	0.027958	0.092558	0.051348	0.065728	0.455172	0.65614	0.814699	1.633848814	0.90016	0.293792506	0.535092	2.082244	1.398837
A	NOX_STREX	0.198989	0.319548	0.27791	0.321671	0.381542	0.206004	1.371111	2.745433901	0.995087	0.037556507	0.117492	0.511229	0.298605
A	PM10_IDLEX	0	0	0	0	0.000685	0.001422	0.001186	0.001939125	0.000372	0	0	0.001021	0
A	PM10_PMBW	0.007109	0.009198	0.008852	0.008933	0.076704	0.089518	0.044837	0.081781797	0.049977	0.125979361	0.012	0.044568	0.044943
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009409	0.010648	0.012	0.03513541	0.012	0.044383261	0.004	0.010516	0.013285
A	PM10_RUNEX	0.001017	0.001576	0.001183	0.001178	0.011274	0.019444	0.008315	0.024472959	0.014286	0.005538264	0.001959	0.010893	0.026527
A	PM10_STREX	0.001723	0.002476	0.001926	0.001891	0.000174	7.39E-05	9.25E-05	2.86377E-07	0.000127	1.2111E-05	0.003451	4.34E-05	0.000267
A	PM25_IDLEX	0	0	0	0	0.000656	0.00136	0.001134	0.001848696	0.000356	0	0	0.000976	0
A	PM25_PMBW	0.002488	0.003219	0.003098	0.003126	0.026846	0.031331	0.015693	0.028623629	0.017492	0.044092776	0.0042	0.015599	0.01573
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002352	0.002662	0.003	0.008783853	0.003	0.011095815	0.001	0.002629	0.003321
A	PM25_RUNEX	0.000935	0.001449	0.001089	0.001085	0.010751	0.018587	0.007947	0.023410841	0.013659	0.005294889	0.00183	0.010405	0.025338
A	PM25_STREX	0.001584	0.002277	0.001771	0.001738	0.00016	6.79E-05	8.51E-05	2.63313E-07	0.000117	1.11356E-05	0.003236	3.99E-05	0.000246
A	ROG_DIURN	0.24955	0.50873	0.274048	0.313625	0.110209	0.057088	0.019771	9.1592E-05	0.072594	0.015803094	3.845178	0.034937	26.64487
A	ROG_HTSK	0.070665	0.139679	0.072649	0.080632	0.02672	0.013817	0.004666	2.90398E-05	0.015605	0.004759601	3.558844	0.008501	6.728387
A	ROG_IDLEX	0	0	0	0	0.019735	0.014654	0.023376	0.321590124	0.040418	0	0	0.19229	0
A	ROG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	ROG_RUNEX	0.005603	0.019412	0.008495	0.010814	0.066535	0.097184	0.023627	0.016287015	0.03901	0.059061252	0.961131	0.048783	0.065156
A	ROG_RUNLS	0.187625	0.39349	0.204937	0.237024	0.155779	0.077843	0.038655	0.000261472	0.08075	0.012090992	3.781493	0.022938	0.16219
A	ROG_STREX	0.237505	0.424158	0.312968	0.374715	0.095037	0.049675	0.040569	3.72501E-07	0.081469	0.013094076	1.228813	0.028623	0.099567
A	SO2_IDLEX	0	0	0	0	8.11E-05	0.00013	0.001427	0.006748096	0.000841	0	0	0.001701	0
A	SO2_RUNEX	0.002277	0.003075	0.003168	0.003798	0.007117	0.007474	0.011139	0.013717513	0.012583	0.00857389	0.001843	0.009244	0.016358
A	SO2_STREX	0.000587	0.000801	0.000806	0.000959	0.000169	9.04E-05	7.55E-05	1.259E-07	0.000135	3.09199E-05	0.000448	3.83E-05	0.00021
A	TOG_DIURN	0.24955	0.50873	0.274048	0.313625	0.110209	0.057088	0.019771	9.1592E-05	0.072594	0.015803094	0.084734	0.034937	26.64487
A	TOG_HTSK	0.070665	0.139679	0.072649	0.080632	0.02672	0.013817	0.004666	2.90398E-05	0.015605	0.004759601	3.558844	0.008501	6.728387
A	TOG_IDLEX	0	0	0	0	0.027926	0.01961	0.041291	0.570405698	0.053451	0	0	0.313614	0
A	TOG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	TOG_RUNEX	0.008165	0.028322	0.012381	0.015738	0.08106	0.112355	0.036334	0.124403846	0.054529	0.601085521	1.168054	0.146261	0.083601
A	TOG_RUNLS	0.187625	0.39349	0.204937	0.237024	0.155779	0.077843	0.038655	0.000261472	0.08075	0.012090992	3.781493	0.022938	0.16219
A	TOG_STREX	0.260038	0.4644	0.34266	0.410266	0.104053	0.054388	0.044418	4.07842E-07	0.089199	0.014336365	1.336388	0.031339	0.109013
A	N2O_IDLEX	0	0	0	0	0.000622	0.00168	0.02384	0.125416043	0.012876	0	0	0.024561	0
A	N2O_RUNEX	0.00351	0.007365	0.005085	0.006469	0.038764	0.079286	0.150702	0.242608661	0.155325	0.163486082	0.038022	0.121582	0.068779
A	N2O_STREX	0.027208	0.035136	0.033545	0.034764	0.03193	0.016916	0.005523	7.35107E-06	0.013429	0.005963729	0.007087	0.004626	0.032482

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

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2024
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_RUNEX	ROG_IDLEX	ROG_STREX	ROG_HOTSO	ROG_RUNL	ROG_DIUR	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_HOTSO	TOG_RUNL	TOG_DIUR	NH3_RUNEX	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2024	HHDT	Aggregate	Aggregate	Gasoline	2.58E+08	115.1526	115.1526	0	0	51.79487	0	7.013725	0	0.003612	0	0.001433	0.005	0.03384	0.003929	0	0.001559	0.02	0.096686	2166.164	0	50.04419	0.246012	0	0.000205	0.192927	0	0.049797	1.47824	0	0.001115	0.149022	1.34233	10.02547	2.157045	0	0.001221	0.149022	1.34233	10.02547	0.04274	52.51903	0	1.60109	0.021415	0	0.000495
Santa Clara	2024	HHDT	Aggregate	Aggregate	Diesel	8486.693	1001095	1001095	0	0	124748.4	0	1.894567	62.88367	2.898867	0.025674	0.03017	0	0.00877	0.027454	0.026835	0.031534	0	0.035082	0.07844	1634.1	11997.01	0	0.000777	0.23663	0	0.257453	1.890134	0	0.016732	5.094584	0	0	0	0	0.019048	5.799796	0	0	0	0	0	0.215084	0.082524	74.10576	0	0.015474	0.113605	0
Santa Clara	2024	HHDT	Aggregate	Aggregate	Electricity	28.33039	2794.261	0	2794.261	378.7946	5152.341	0	0	0	0	0	0	0	0.008585	0.014055	0	0	0	0.034341	0.040158	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	2024	HHDT	Aggregate	Aggregate	Natural Ga	794.401	54591.27	54591.27	0	0	7249.717	0	1.128254	13.55515	0	0.001724	0.024776	0	0.009	0.047521	0.001875	0.026946	0	0.036	0.135775	1387.534	10583.64	0	2.344742	36.30276	0	0.282858	2.157544	0	0.050833	0.550696	0	0	0	0	2.412728	37.08609	0	0	0	0	0	0.85184	13.40196	74.43135	0	0	0	0
Santa Clara	2024	LDA	Aggregate	Aggregate	Gasoline	600108.2	22290344	22290344	0	0	2786617	0	0.042281	0	0.025793	0.001177	0	0.001931	0.002	0.002656	0.00128	0	0.0021	0.008	0.007587	277.9403	0	70.44944	0.002338	0	0.072036	0.004672	0	0.033228	0.008937	0	0.328953	0.090491	0.230394	1.422636	0.013041	0	0.360162	0.090491	0.230394	1.422636	0.034712	0.737516	0	3.233068	0.002748	0	0.000686
Santa Clara	2024	LDA	Aggregate	Aggregate	Diesel	1750.024	51573.48	51573.48	0	0	7442.61	0	0.213181	0	0	0.016747	0	0	0.002	0.002706	0.017504	0	0	0.008	0.00773	232.7849	0	0	0.001289	0	0	0.036675	0	0	0.027749	0	0	0	0.03159	0	0	0	0	0	0	0.0031	0.331109	0	0	0.002206	0	0
Santa Clara	2024	LDA	Aggregate	Aggregate	Electricity	57627.4	2472767	0	2472767	282733	954692.3	0	0	0	0	0	0	0	0.002	0.001533	0	0	0	0.008	0.00438	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	2024	LDA	Aggregate	Aggregate	Plug-in Hyb	17457.1	767059.2	381568.7	385490.5	72185.1	116429.6	0.003264	0	0.11551	0.000618	0	0.00207	0.002	0.001377	0.000672	0	0.002252	0.008	0.003935	138.6993	0	65.78653	0.000444	0	0.04244	0.000587	0	0.020762	0.001412	0	0.173285	0.041111	0.037292	0.447104	0.019502	0.214038	0	0.189725	0.041111	0.037292	0.447104	0.019502	0.214038	0	1.339893	0.001371	0	0.00065
Santa Clara	2024	LDT1	Aggregate	Aggregate	Gasoline	52693.37	1706864	1706864	0	0	234793.4	0	0.128357	0	0.381294	0.001737	0	0.002678	0.002	0.00324	0.001889	0	0.002913	0.008	0.009258	128.9675	0	86.69483	0.006261	0	0.105365	0.009424	0	0.03869	0.027741	0	0.539321	0.165332	0.472477	2.667158	0.040475	0	0.590488	0.165332	0.472477	2.667158	0.036079	1.427621	0	5.253053	0.003252	0	0.000857
Santa Clara	2024	LDT1	Aggregate	Aggregate	Diesel	23.46233	343.9308	343.9308	0	0	66.44459	0	1.651932	0	0	0.239373	0	0	0.002	0.003724	0.250196	0	0	0.008	0.01064	415.4307	0	0	0.013862	0	0	0.065451	0	0	0.298448	0	0	0	0	0	0.339763	0	0	0	0	0	0.0031	1.593665	0	0	0.003936	0	0
Santa Clara	2024	LDT1	Aggregate	Aggregate	Electricity	211.0028	8008.646	0	8008.646	994.4346	3091.998	0	0	0	0	0	0	0	0.002	0.001539	0	0	0	0.008	0.004397	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	2024	LDT1	Aggregate	Aggregate	Plug-in Hyb	67.64578	3164.46	1414.302	1750.158	279.7153	528.6	0.002933	0	0.11551	0.000367	0	0.001381	0.002	0.001389	0.0004	0	0.001502	0.008	0.003967	124.6157	0	71.36186	0.000397	0	0.042219	0.000522	0	0.020556	0.001268	0	0.173285	0.024153	0.020965	0.279628	0.001851	0	0.189725	0.024153	0.020965	0.279628	0.018771	0.192305	0	1.339893	0.001232	0	0.000705
Santa Clara	2024	LDT2	Aggregate	Aggregate	Gasoline	285585.4	10322758	10322758	0	0	1336438	0	0.069091	0	0.334237	0.001227	0	0.001959	0.002	0.003127	0.001334	0	0.00213	0.008	0.008936	344.6046	0	88.12796	0.002864	0	0.082985	0.005943	0	0.037254	0.011242	0	0.384216	0.081741	0.217688	1.368189	0.016404	0	0.420668	0.081741	0.217688	1.368189	0.036359	0.842122	0	3.673764	0.003407	0	0.000871
Santa Clara	2024	LDT2	Aggregate	Aggregate	Diesel	1015.453	37944.26	37944.26	0	0	4835.434	0	0.041515	0	0	0.004813	0	0	0.002	0.003113	0.005031	0	0	0.008	0.008895	311.1925	0	0	0.000609	0	0	0.049029	0	0	0.013105	0	0	0	0.014919	0	0	0	0	0	0	0.0031	0.129976	0	0	0.002949	0	0
Santa Clara	2024	LDT2	Aggregate	Aggregate	Electricity	1597.567	55532.59	0	55532.59	8150.927	21440.16	0	0	0	0	0	0	0	0.002	0.001526	0	0	0	0.008	0.004359	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	2024	LDT2	Aggregate	Aggregate	Plug-in Hyb	2116.58	94757.71	44376.61	50381.09	8752.056	15216.59	0.003073	0	0.11551	0.000467	0	0.001672	0.002	0.001383	0.000508	0	0.001819	0.008	0.003953	130.578	0	78.06	0.000416	0	0.042233	0.000547	0	0.020569	0.001329	0	0.173285	0.025949	0.023686	0.309385	0.001939	0	0.189725	0.025949	0.023686	0.309385	0.019635	0.201506	0	1.339893	0.001291	0	0.000772
Santa Clara	2024	LHDT1	Aggregate	Aggregate	Gasoline	19314.14	722529.3	722529.3	0	0	287751.9	0	0.17374	0.036221	0.636996	0.001534	0	0.000302	0.002	0.0273	0.001668	0	0.000328	0.008	0.078	871.4559	119.0993	25.78022	0.008358	0.112945	0.032997	0.009778	0.002977	0.050968	0.041718	0.415023	0.163611	0.047402	0.263136	2.768514	0.060875	0.605601	0.179134	0.047402	0.263136	2.768514	0.044898	1.142278	3.756209	3.123927	0.008615	0.001177	0.000255
Santa Clara	2024	LHDT1	Aggregate	Aggregate	Diesel	10107.74	398004.1	398004.1	0	0	127142.6	0	1.563015	1.92168	0	0.035058	0.026804	0	0.003	0.0273	0.036643	0.028016	0	0.012	0.078	631.4008	131.1503	0	0.008006	0.005098	0	0.099477	0.020663	0	0.172364	0.10976	0	0	0	0	0.196225	0.124954	0	0	0	0	0	0.172781	0.473594	0.909745	0	0.005983	0.001243	0
Santa Clara	2024	LHDT1	Aggregate	Aggregate	Electricity	70.82836	5110.544	0	5110.544	989.4273	3345.376	0	0	0	0	0	0	0	0.002	0.01365	0	0	0	0.008	0.039	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	2024	LHDT2	Aggregate	Aggregate	Gasoline	2506.906	91452.57	91452.57	0	0	37349.16	0	0.16518	0.035604	0.621534	0.00139	0	0.000239	0.002	0.03185	0.001512	0	0.000259	0.008	0.091	980.0361	137.5922	25.51292	0.006183	0.111453	0.031983	0.009819	0.00291	0.049384	0.028613	0.40822	0.157242	0.04419	0.238167	2.558385	0.041752	0.595674	0.17216	0.04419	0.238167	2.558385	0.044971	0.899209	3.762546	3.129931	0.009689	0.00136	0.000252
Santa Clara	2024	LHDT2	Aggregate	Aggregate	Diesel	4663.455	183558.4	183558.4	0	0	58660.4	0	1.266102	1.895403	0	0.032055	0.027	0	0.003	0.03185	0.033504	0.028221	0	0.012	0.091	756.8682	209.5618	0	0.007406	0.005098	0	0.119245	0.033017	0	0.159439	0.10976	0	0	0	0	0.18151	0.124954	0	0	0	0	0	0.184132	0.411861	0.909745	0	0.007172	0.001986	0
Santa Clara	2024	LHDT2	Aggregate	Aggregate	Electricity	18.33259	1253.286	0	1253.286	242.668	808.0022	0	0	0	0	0	0	0	0.002	0.015925	0	0	0	0.008	0.0455	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	2024	MCY	Aggregate	Aggregate	Gasoline	28171.51	1660222.3	1660222.3	0	0	56343.02	0	0.571344	0	0.135477	0.001779	0	0.003248	0.001	0.0042	0.001902	0	0.003456	0.004	0.012	187.743	0	48.37697	0.162609	0	0.181972	0.039558	0	0.00802	1.062175	0	1.345317	3.559276	3.75283	3.900294	1.276951	0	1.462608	3.559276	3.75283	3.900294	0.088808	12.6697	0	8.002987	0.001856	0	0.000478
Santa Clara	2024	MDV	Aggregate	Aggregate	Gasoline	156642.4	5468054	5468054	0	0	726101.1	0	0.101279	0	0.42828	0.001229	0	0.002042	0.002	0.003184	0.001336	0	0.002221	0.008	0.009096	418.13	0	107.2801	0.003873	0	0.10186	0.007628	0	0.040967	0.01626	0	0.508806	0.097051	0.275722	1.677059	0.023715	0	0.557077	0.097051	0.275722	1.677059	0.036179	0.972241	0	4.022964	0.004134	0	0.001061
Santa Clara	2024	MDV	Aggregate	Aggregate	Diesel	2400.615	86292.69	86292.69	0	0	11318.82	0	0.048844	0	0	0.004909	0	0	0.002	0.003206	0.005131	0	0	0.008	0.009159	409.13	0	0	0.00051	0	0	0.064459	0	0	0.010978	0	0	0	0.012498	0	0	0	0	0	0	0.0031	0.201538	0	0	0.003877	0	0
Santa Clara	2024	MDV	Aggregate	Aggregate	Electricity	1678.684	58660.63	0	58660.63	8578.496	22647.84	0	0	0	0	0	0	0	0.002	0.001525	0	0	0	0.008	0.004358	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	2024	MDV	Aggregate	Aggregate	Plug-in Hyb	1250.857	52904.03	25301.52	27602.51	5172.294	8336.781	0.003138	0	0.11551	0.000561	0	0.001962	0.002	0.001382	0.00061	0	0.002134	0.008	0.003948	133.3485	0	96.65661	0.000423	0	0.042047	0.000554	0	0.020395	0.001357	0	0.173285	0.030318	0.026684	0.341695	0.00198	0	0.189725	0.030318	0.026684	0.341695	0.020087	0.205781	0	1.339893	0.001318	0	0.000956
Santa Clara	2024	MH	Aggregate	Aggregate	Gasoline	2420.57	22012.3	22012.3	0	0	242.1538	0	0.420938	0	0.419963	0.001679	0	0.000404	0.003	0.015756	0.001826	0	0.000439	0.012	0.045017	1947.501	0	31.65056	0.015478	0	0.037539	0.025731	0	0.04407	0.06827	0	0.159123	12.21143	0.286769	4.596479	0.09962	0	0.174219	12.21143	0.286769	4.596479	0.044846	1.682224	0	3.497247	0.019253	0	0.000313
Santa Clara	2024	MH	Aggregate	Aggregate	Diesel	977.3606	9498.302	9498.302	0	0	97.73606	0	4.117169	0	0	0.091772	0	0	0.004	0.015675	0.099921	0	0	0.016	0.044785	1081.931	0	0	0.005558	0	0	0.170459	0	0	0.11965	0	0	0	0.136214	0	0	0	0	0	0	0.155539	0.397281	0	0	0.010252	0	0
Santa Clara	2024	MHDT	Aggregate	Aggregate	Gasoline	1414.552	71600.35	71600.35	0	0	28302.35	0	0.470752	0.088485	0.440963	0.001362	0	0.000533	0.003	0.015756	0.001482	0	0.000579	0.012	0.045017	1768.687	531.8002	46.25227	0.015051	0.25808	0.047572	0.022913	0.00727	0.03271	0.074951	1.01271	0.265405	0.033945	0.276365	2.798712	0.109368	1.477744	0.290585	0.033945	0.276365	2.798712	0.04498	1.56073	15.11634	5.825814	0.017485	0.005257	0.000457
Santa Clara	2024	MHDT	Aggregate	Aggregate	Diesel	1039.53	4340443.6	4340443.6	0	0	123939	0	1.232824	13.14099	1.642732	0.014397	0.029902	0	0.003	0.015941	0.015048	0.031254	0	0.012	0.045546	1147.309	2248.547	0	0.001507	0.01158	0	0.180759	0.35426	0	0.032455	0.249319	0	0	0	0	0.036947	0.283831	0	0	0	0	0	0.210532	0.120871	7.556027	0	0.010864	0.021292	0
Santa Clara	2024	MHDT	Aggregate	Aggregate	Electricity	30.91601	1660.353	0	1660.353	407.4536	1841.064	0	0	0	0	0	0	0	0.003	0.007956	0	0	0	0.012	0.022732	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	2024	MHDT	Aggregate	Aggregate	Natural Ga	90.59449	4303.581	4303.581	0	0	827.6228	0	0.133415	6.499719	0	0.001179	0.018131	0	0.003	0.016007	0.001282	0.019719	0	0.012	0.045734	984.6917	5301.101	0	0.74573	17.31409	0	0.200736	1.080664	0	0.010655	0.247384	0	0	0	0	0.761072	17.6703	0	0	0	0	0	1.06	2.995842	34.7393	0	0	0	0
Santa Clara	2024	OBUS	Aggregate	Aggregate	Gasoline	443.1467	19894.31	19894.31	0	0	8866.48	0	0.49672	0.06506	0.408547	0.000907	0	0.000252	0.003	0.01568	0.000987	0	0.000274	0.012	0.044799	1764.001	379.4143	31.61308	0.013757	0.195733	0.03606	0.024018	0.005304	0.031028	0.067076	0.746281	0.190964	0.033873	0.154922	2.818385	0.097877	1.088971	0.209081	0.033873	0.154922	2.818385	0.044969	1.491576	5.774637	4.000641	0.017439	0.003751	0.000313
Santa Clara	2024	OBUS	Aggregate	Aggregate	Diesel	893.1376	61949.05	61949.05	0	0	9141.625	0	1.178643	7.363387	1.543157	0.019849	0.008167	0	0.003	0.018015	0.020746	0.008536	0	0.012	0.051472	1273.38	1538.564	0	0.001935	0.020479	0	0.200622	0.242401	0	0.04166	0.440905	0	0	0	0	0.047427	0.501937	0	0	0	0	0	0.216021	0.150181	7.500483	0	0.012058	0.014569	0
Santa Clara	2024	OBUS	Aggregate	Aggregate	Electricity	1.087481	92.50105	0	92.50105	21.75833	102.477	0	0	0	0	0	0	0	0.003	0.00784	0	0	0	0.012	0.022399	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	2024	OBUS	Aggregate	Aggregate	Natural Ga	7.05737	469.3876	469.3876	0	0	62.81059	0	0.190585	1.537414	0	0.00106	0.003899	0	0.003	0.016148	0.001153	0.004241	0	0.012	0.046137	1004.237	1191.581	0	0.789796	4.236895	0	0.20472	0.242912	0	0.011285	0.060537	0	0	0	0	0.806045	4.324062	0	0	0	0	0	1.06	3.254325	7.353064	0	0	0	0
Santa Clara	2024	SBUS	Aggregate	Aggregate	Gasoline	172.6948	8584.866	8584.866	0	0	690.7791	0	0.50288	0.925939	0.716801	0.000864	0	0.000567	0.002	0.015721	0.000939	0	0.000616	0.008	0.044917	810.6064	2589.131	58.1367	0.011135	2.464862	0.074893	0.027101	0.086311	0.065929	0.054059	10.63288	0.426367	0.113914	0.274691	1.686167	0.078883	15.51547	0.466819	0.113914	0.274691	1.686167	0.045	1.38705	82.18841	10.36621	0.008014	0.025596	0.000575
Santa Clara	2024	SBUS	Aggregate	Aggregate	Diesel	670.5958	15345.26	15345.26	0	0	9710.228	0	3.821388	21.90481	0.482851	0.019766	0.019703	0	0.003	0.015721	0.02066	0.020594	0	0.012	0.044917	1144.18	2229	0	0.002665	0.008001	0	0.180266	0.35118	0	0.057376	0.172257	0	0	0	0	0.065318	0.196101	0	0	0	0	0	0.148025	0.1775	4.677792	0	0.010835	0.021107	0
Santa Clara	2024	SBUS	Aggregate	Aggregate	Electricity	2.064666	64.35501	0	64.35501	23.64639	67.79515	0	0	0	0	0	0	0	0.002539	0.00786	0	0	0	0.010157	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
Santa Clara	2024	SBUS	Aggregate	Aggregate	Natural Ga	24.3995	612.0941	612.0941	0	0	353.3048	0	0.567729	5.270895	0	0.003378	0.011357	0	0.003	0.015721	0.003674	0.012352	0	0.012	0.044917	1261.305	4066.736	0	3.436672	15.25665	0	0.257125	0.829031	0	0.049103	0.217987	0	0	0	0	3.507376	15.57053	0	0	0	0	0	1.06	11.64901	20.74693	0	0	0	0
Santa Clara	2024	UBUS	Aggregate	Aggregate	Gasoline	46.08313	4812.451	4812.451	0	0	1834.325	0	0.027483	0	0.457232	0.001143	0	0.000128	0.002	0.03185	0.001243	0	0.00014	0.008	0.091	926.0836	0	36.94783	0.002034	0	0.043067	0.004288	0	0.071717	0.005634	0	0.152979	0.038099	0.092116	0.456438	0.008221	0	0.167492	0.038099	0.092116	0.456438	0.045	0.581148	0	6.130495	0.009155	0	0.000365
Santa Clara	2024	UBUS	Aggregate	Aggregate	Diesel	437.4745	48917.61	48917.61	0	0	1749.898	0	0.386257	0	0	0.007023	0	0	0.0083	0.0385	0.00734	0	0	0.0332	0.11	1101.14	0	0	0.003215	0	0	0.173485	0	0	0.069208	0	0	0	0.078788	0	0	0	0	0	0	0.187908	0.079368	0	0	0.010434	0	0
Santa Clara	2024	UBUS	Aggregate	Aggregate	Electricity	5.347565	235.0626	0	235.0626	21.39026	409.7714	0	0	0	0	0	0	0	0.00888	0.01925	0	0	0	0.03552	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
Santa Clara	2024	UBUS	Aggregate	Aggregate	Natural Ga	42.58696	4865.187	4865.187	0	0	170.3478	0	0.058788	0	0	0.000282	0	0	0.008183	0.0385	0.000295	0	0	0.032731	0.11	1299.206	0	0	4.246059	0	0	0.264852	0	0	0.060668	0	0	0	0	0	4.333415	0	0	0	0	0	0.97	49.04786	0	0	0	0	0

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2025
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_STF	PM2.5_PM	PM2.5_PM	PM10_RUN	PM10_IDLE	PM10_STR	PM10_PM	PM10_PM	CO2_RUNE	CO2_IDLEX	CO2_STREX	CH4_RUNE	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	2025	HHDT	Aggregate	Aggregate	Gasoline	2.330359	124.9448	124.9448	0	46.62582	0	5.556909	0	1.379041	0.003103	0	0.001399	0.005	0.033068	0.003375	0	0.001521	0.02	0.09448	2106.229	0	50.03138	0.207413	0	0.000226	0.167059	0	0.041557	1.222197	0	0.00123	0.140217	1.263022	9.434649	1.783427	0	0.001346	0.140217	1.263022	9.434649	0.043157	47.7242	0	2.001616	0.020822	0	0.000495
Santa Clara	2025	HHDT	Aggregate	Aggregate	Diesel	8692.575	1008964	1008964	0	127877.1	0	1.825194	62.42367	2.931995	0.025335	0.028938	0	0.008772	0.027421	0.02648	0.030247	0	0.035088	0.078345	1608.776	11755.34	0	0.00075	0.235891	0	0.253463	1.852058	0	0.016139	5.078674	0	0	0	0	0	0.018373	5.781684	0	0	0	0	0.215507	0.078083	74.00904	0	0.015234	0.111316	0
Santa Clara	2025	HHDT	Aggregate	Aggregate	Electricity	63.3712	6579.675	0	6579.675	825.9972	12135.66	0	0	0	0	0	0	0	0.008551	0.014281	0	0	0	0.034206	0.040802	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	2025	HHDT	Aggregate	Aggregate	Natural Ga	832.405	55779.38	55779.38	0	7555.504	0	1.049864	13.18492	0	0.00168	0.025258	0	0.009	0.048303	0.001827	0.02747	0	0.036	0.138007	1375.94	10529.31	0	2.235928	35.17609	0	0.280494	2.146469	0	0.047235	0.530122	0	0	0	0	0	2.299347	35.93114	0	0	0	0	0.843784	13.01274	74.75478	0	0	0	0
Santa Clara	2025	LDA	Aggregate	Aggregate	Gasoline	598860.3	22133915	22133915	0	2780384	0	0.038209	0	0.245539	0.001142	0	0.001188	0.002	0.002655	0.001242	0	0.002044	0.008	0.007587	273.2075	0	69.04168	0.002117	0	0.067825	0.004408	0	0.032293	0.007947	0	0.306311	0.087189	0.224301	1.384954	0.035611	0.6952	0	0.349452	0.002701	0	0.000683
Santa Clara	2025	LDA	Aggregate	Aggregate	Diesel	1620.04	46912.85	46912.85	0	6871.193	0	0.18842	0	0	0.015236	0	0	0.002	0.002712	0.015925	0	0	0.008	0.007748	230.5963	0	0	0.001193	0	0	0.036331	0	0	0.025693	0	0	0	0	0	0	0.02925	0	0	0	0	0.0031	0.319914	0	0	0.002185	0	0
Santa Clara	2025	LDA	Aggregate	Aggregate	Electricity	61443.19	2670452	0	2670452	299852.7	1031015	0	0	0	0	0	0	0.002	0.001534	0	0	0	0.008	0.004382	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	2025	LDA	Aggregate	Aggregate	Plug-in Hyb	19037.66	825567.7	401013	424554.8	78720.74	128228.2	0.003187	0	0.11551	0.000578	0	0.001985	0.002	0.001382	0.000629	0	0.002159	0.008	0.003948	135.4391	0	65.04608	0.000432	0	0.042249	0.000569	0	0.020584	0.001378	0	0.173285	0.041164	0.03735	0.440525	0.019241	0.209016	0	1.339893	0.001339	0	0.000643
Santa Clara	2025	LDT1	Aggregate	Aggregate	Gasoline	51680.86	1664706	1664706	0	230186	0	0.115355	0	0.35972	0.001639	0	0.002543	0.002	0.003241	0.001782	0	0.002766	0.008	0.00926	324.1276	0	84.93844	0.005621	0	0.098552	0.008687	0	0.037511	0.02471	0	0.498818	0.156963	0.442299	2.52236	0.036056	0	0.546143	0.156963	0.442299	2.52236	0.036453	1.317416	0	4.886115	0.003204	0	0.00084
Santa Clara	2025	LDT1	Aggregate	Aggregate	Diesel	21.28272	302.8258	302.8258	0	59.13231	0	1.64381	0	0	0.238169	0	0	0.002	0.00372	0.248938	0	0	0.008	0.010628	415.1682	0	0	0.013797	0	0	0.065141	0	0	0.297038	0	0	0	0	0	0	0.338158	0	0	0	0	0.0031	1.585068	0	0	0.003934	0	0
Santa Clara	2025	LDT1	Aggregate	Aggregate	Electricity	234.4578	9323.704	0	9323.704	1109.796	3599.719	0	0	0	0	0	0	0.002	0.001537	0	0	0	0.008	0.004392	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	2025	LDT1	Aggregate	Aggregate	Plug-in Hyb	98.13198	4519.182	1961.286	2557.896	405.7758	772.5609	0.002848	0	0.11551	0.000353	0	0.001365	0.002	0.001394	0.000383	0	0.001485	0.008	0.003982	121.0095	0	70.34635	0.000383	0	0.041987	0.000501	0	0.020339	0.001231	0	0.173285	0.023895	0.020384	0.276746	0.001797	0	0.189725	0.023895	0.020384	0.276746	0.018228	0.186748	0	1.339893	0.001196	0	0.000695
Santa Clara	2025	LDT2	Aggregate	Aggregate	Gasoline	290874.7	10447706	10447706	0	1360241	0	0.06257	0	0.314364	0.001192	0	0.001919	0.002	0.00313	0.001296	0	0.002087	0.008	0.008944	338.2713	0	86.2638	0.002642	0	0.078494	0.005588	0	0.036037	0.010244	0	0.360071	0.079452	0.214938	1.349256	0.037112	0.795621	0	3.47417	0.003344	0	0.000853
Santa Clara	2025	LDT2	Aggregate	Aggregate	Diesel	1049.952	38652.34	38652.34	0	4980.34	0	0.039332	0	0	0.004727	0	0	0.002	0.003123	0.004941	0	0	0.008	0.008921	306.7182	0	0	0.000603	0	0	0.048324	0	0	0.01298	0	0	0	0	0	0	0.014777	0	0	0	0	0.0031	0.129797	0	0	0.002906	0	0
Santa Clara	2025	LDT2	Aggregate	Aggregate	Electricity	2157.059	73663.77	0	73663.77	10962.38	28440.3	0	0	0	0	0	0	0.002	0.001527	0	0	0	0.008	0.004362	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	2025	LDT2	Aggregate	Aggregate	Plug-in Hyb	2561.885	112327.2	51267.44	61059.78	10593.4	18441.87	0.002995	0	0.11551	0.000438	0	0.00161	0.002	0.001388	0.000477	0	0.001751	0.008	0.003967	127.2609	0	77.17666	0.000403	0	0.041992	0.000528	0	0.020344	0.001295	0	0.173285	0.026071	0.023359	0.305362	0.00189	0	0.189725	0.026071	0.023359	0.305362	0.019143	0.196395	0	1.339893	0.001258	0	0.000763
Santa Clara	2025	LHDT1	Aggregate	Aggregate	Gasoline	19422.46	728337	728337	0	289365.8	0	0.152112	0.035118	0.61458	0.001478	0	0.000276	0.002	0.0273	0.001607	0	0.0003	0.008	0.078	855.4024	117.9783	25.70715	0.007214	0.110329	0.031611	0.008613	0.002941	0.049929	0.03557	0.40247	0.15588	0.044275	0.247775	2.616411	0.051904	0.587284	0.170669	0.044275	0.247775	2.616411	0.044934	1.05316	3.759094	3.16195	0.008457	0.001166	0.000254
Santa Clara	2025	LHDT1	Aggregate	Aggregate	Diesel	10387.1	408019.3	408019.3	0	130656.7	0	1.379237	1.823414	0	0.032347	0.026692	0	0.003	0.0273	0.03381	0.027899	0	0.012	0.078	628.07	129.5472	0	0.007468	0.005098	0	0.098953	0.02041	0	0.160779	0.10976	0	0	0	0	0	0.183036	0.124954	0	0	0	0	0.17898	0.435087	0.909745	0	0.005951	0.001228	0
Santa Clara	2025	LHDT1	Aggregate	Aggregate	Electricity	196.402	13079.06	0	13079.06	2746.629	8564.085	0	0	0	0	0	0	0.002	0.01365	0	0	0	0.008	0.039	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	2025	LHDT2	Aggregate	Aggregate	Gasoline	2512.652	91345.05	91345.05	0	37434.78	0	0.146187	0.034452	0.600885	0.001346	0	0.00022	0.002	0.03185	0.001464	0	0.000239	0.008	0.091	964.5764	136.4471	25.31105	0.005467	0.108422	0.030581	0.008804	0.002854	0.048245	0.025115	0.395081	0.149459	0.041982	0.228581	2.471298	0.036648	0.576501	0.163639	0.041982	0.228581	2.471298	0.044974	0.850878	3.765161	3.139903	0.009536	0.001349	0.00025
Santa Clara	2025	LHDT2	Aggregate	Aggregate	Diesel	4837.236	188645	188645	0	60846.34	0	1.139289	1.802658	0	0.030296	0.027005	0	0.003	0.03185	0.031666	0.028226	0	0.012	0.091	750.3571	207.2396	0	0.007043	0.005098	0	0.118219	0.032651	0	0.151622	0.10976	0	0	0	0	0	0.172612	0.124954	0	0	0	0	0.188496	0.387904	0.909745	0	0.00711	0.001964	0
Santa Clara	2025	LHDT2	Aggregate	Aggregate	Electricity	50.46202	3193.251	0	3193.251	669.175	2059.665	0	0	0	0	0	0	0.002	0.015925	0	0	0	0.008	0.0455	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	2025	MCY	Aggregate	Aggregate	Gasoline	28484.89	166414.5	166414.5	0	56969.79	0	0.557882	0	0.129146	0.001799	0	0.003253	0.001	0.0042	0.001925	0	0.003464	0.004	0.012	187.2679	0	47.30784	0.158292	0	0.177199	0.038984	0	0.007691	1.024683	0	1.305157	3.558651	3.760078	3.860886	1.236542	0	1.419098	3.558651	3.760078	3.860886	0.008851	12.31202	0	7.965438	0.001851	0	0.000468
Santa Clara	2025	MDV	Aggregate	Aggregate	Gasoline	159532.2	5551044	5551044	0	739781.4	0	0.087905	0	0.391886	0.001179	0	0.001962	0.002	0.003182	0.001282	0	0.002134	0.008	0.009091	410.3223	0	104.9535	0.003431	0	0.094137	0.006921	0	0.039073	0.014165	0	0.463643	0.092515	0.265086	1.620407	0.020668	0	0.50763	0.092515	0.265086	1.620407	0.036883	0.895922	0	3.753621	0.004056	0	0.001038
Santa Clara	2025	MDV	Aggregate	Aggregate	Diesel	2421.364	85326.8	85326.8	0	11351.14	0	0.044948	0	0	0.004686	0	0	0.002	0.003225	0.004898	0	0	0.008	0.009216	404.5816	0	0	0.000492	0	0	0.063742	0	0	0.010592	0	0	0	0	0	0	0.012058	0	0	0	0	0.0031	0.199936	0	0	0.003834	0	0
Santa Clara	2025	MDV	Aggregate	Aggregate	Electricity	2274.547	77934.96	0	77934.96	11571.06	30089.33	0	0	0	0	0	0	0.002	0.001526	0	0	0	0.008	0.004361	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	2025	MDV	Aggregate	Aggregate	Plug-in Hyb	1542.366	64484.39	29833.21	34651.18	6377.683	10465.69	0.003036	0	0.11551	0.000507	0	0.00183	0.002	0.001388	0.000551	0	0.00199	0.008	0.003965	128.9983	0	95.11137	0.000407	0	0.041816	0.00053	0	0.02018	0.001313	0	0.173285	0.02949	0.025333	0.327899	0.001916	0	0.189725	0.02949	0.025333	0.327899	0.019431	0.199076	0	1.339893	0.001275	0	0.00094
Santa Clara	2025	MH	Aggregate	Aggregate	Gasoline	2337.876	21506.19	21506.19	0	233.8812	0	0.37652	0	0.425905	0.001612	0	0.000388	0.003	0.015756	0.001753	0	0.000422	0.012	0.045017	1947.057	0	31.4529	0.013722	0	0.036945	0.023864	0	0.045303	0.059455	0	0.154277	11.38549	0.268831	4.357209	0.086757	0	0.168914	11.38549	0.268831	4.357209	0.044879	1.426924	0	3.382931	0.019249	0	0.000311
Santa Clara	2025	MH	Aggregate	Aggregate	Diesel	994.5437	9603.893	9603.893	0	99.45437	0	3.976372	0	0	0.086098	0	0	0.004	0.015675	0.08999	0	0	0.016	0.044785	1082.401	0	0	0.005421	0	0	0.170533	0	0	0.116701	0	0	0	0	0	0	0.132856	0	0	0	0	0.160635	0.385118	0	0	0.010256	0	0
Santa Clara	2025	MHDT	Aggregate	Aggregate	Gasoline	1412.263	72039.87	72039.87	0	28256.55	0	0.394798	0.086175	0.424333	0.001347	0	0.000513	0.003	0.015756	0.001465	0	0.000558	0.012	0.045017	1746.959	526.7233	45.37618	0.012585	0.261076	0.04598	0.019987	0.007219	0.032398	0.061949	1.015127	0.253154	0.030988	0.250472	2.558011	0.090397	1.481271	0.277172	0.030988	0.250472	2.558011	0.044991	1.276089	15.1444	5.531626	0.01727	0.005207	0.000449
Santa Clara	2025	MHDT	Aggregate	Aggregate	Diesel	10548.06	435100.6	435100.6	0	125915.2	0	1.128155	12.74108	1.646559	0.012461	0.024792	0	0.003	0.015941	0.013024	0.025912	0	0.012	0.045545	1141.328	2229.374	0	0.00131	0.010957	0	0.179817	0.351239	0	0.028195	0.235896	0	0	0	0	0	0.032098	0.268549	0	0	0	0	0.211891	0.109646	7.535393	0	0.010808	0.021111	0
Santa Clara	2025	MHDT	Aggregate	Aggregate	Electricity	90.80851	4838.906	0	4838.906	1182.343	5314.414	0	0	0	0	0	0	0.003	0.007951	0	0	0	0.012	0.022718	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	2025	MHDT	Aggregate	Aggregate	Natural Ga	98.90628	4590.307	4590.307	0	911.9208	0	0.12435	6.45266	0	0.001226	0.018594	0	0.003	0.016009	0.001333	0.020223	0	0.012	0.045741	979.0142	5290.545	0	0.751438	16.97256	0	0.199578	1.078512	0	0.010737	0.242504	0	0	0	0	0	0.766898	17.32175	0	0	0	0	1.06	2.996166	35.80775	0	0	0	0
Santa Clara	2025	OBUS	Aggregate	Aggregate	Gasoline	430.7023	18962.49	18962.49	0	8617.491	0	0.460353	0.06398	0.405045	0.000939	0	0.000255	0.003	0.01568	0.001022	0	0.000278	0.012	0.044799	1744.286	377.0226	31.37018	0.012641	0.195762	0.035581	0.02242	0.005219	0.030806	0.061504	0.74652	0.188569	0.033827	0.158433	2.881145	0.089747	1.089321	0.206459	0.033827	0.158433	2.881145	0.044498	1.352776	5.776073	3.953891	0.017244	0.003727	0.00031
Santa Clara	2025	OBUS	Aggregate	Aggregate	Diesel	921.4116	62304.89	62304.89	0	9451.527	0	1.133246	7.151668	1.532624	0.018916	0.007596	0	0.003	0.018017	0.019772	0.007939	0	0.012	0.051478	1259.126	1532.11	0	0.001844	0.020685	0	0.198376	0.241385	0	0.039711	0.445333	0	0	0	0	0	0.045208	0.506978	0	0	0	0	0.216212	0.14449	7.587325	0	0.011923	0.014508	0
Santa Clara	2025	OBUS	Aggregate	Aggregate	Electricity	2.672031	221.771	0	221.771	53.46199	245.6884	0	0	0	0	0	0	0.003	0.00784	0	0	0	0.012	0.022399	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	2025	OBUS	Aggregate	Aggregate	Natural Ga	8.125306	537.7468	537.7468	0	72.31523	0	0.164816	1.526623	0	0.001183	0.004157	0	0.003	0.016148	0.001287	0.004521	0	0.012	0.046137	987.912	1189.826	0	0.803903	4.103659	0	0.201392	0.242554	0	0.011486	0.058633	0	0	0	0	0	0.820442	4.188085	0	0	0	0	1.06	3.29233	7.933419	0	0	0	0
Santa Clara	2025	SBUS	Aggregate	Aggregate	Gasoline	178.2436	8812.851	8812.851	0	712.9742	0	0.487257	0.905562	0.722985	0.000866	0	0.000573	0.002	0.015721	0.000942	0	0.000623	0.008	0.044917	806.3455	2576.863	57.67146	0.010523	2.465929	0.074733	0.026439	0.084425	0.066434	0.051046	10.63602	0.42511	0.118631	0.292211	1.797789	0.074486	15.52005	0.465442	0.118631	0.292211	1.797789	0.045	1.308927	82.20747	10.20511	0.007972	0.025475	0.00057
Santa Clara	2025	SBUS	Aggregate	Aggregate	Diesel	673.2048	15283.75	15283.75	0	9748.005	0	3.614242	21.38359	0.496308	0.018677	0.018235	0	0.003	0.015721	0.019521	0.019059	0	0.012	0.044917	1139.829	2219.616	0	0.002583	0.007936	0	0.179581	0.349701	0	0.055601	0.170862	0	0	0	0	0	0.063298	0.194514	0	0	0	0	0.151888	0.17348	4.777291	0	0.010794	0.021018	0
Santa Clara	2025	SBUS	Aggregate	Aggregate	Electricity	4.481168	145.0761	0	145.0761	51.24766	152.8312	0	0	0	0	0	0	0.002	0.00556	0.00786	0	0	0	0.010226	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	2025	SBUS	Aggregate	Aggregate	Natural Ga	25.28439	627.586	627.586	0	366.118	0	0.5494	5.260001	0	0.003378	0.011617	0	0.003	0.015721	0.003674	0.012635	0	0.012	0.044917	1252.115	4074.049	0	3.386209	15.12215	0	0.255252	0.830522	0	0.048382	0.216066	0	0	0	0	0	3.455875	15.43326	0	0	0	0	1.06	11.41153	21.33281	0	0	0	0
Santa Clara	2025	UBUS	Aggregate	Aggregate	Gasoline	46.21918	4826.658	4826.658	0	184.8767	0	0.027276	0	0.449893	0.001143	0	0.000128	0.002	0.03185	0.001243	0	0.00014	0.008	0.091	925.8676	0	36.64281	0.001993	0	0.043054	0.004259	0	0.070843	0.005515	0	0.152699	0.04366	0.092112	0.471505	0.008047	0	0.167186	0.04366	0.092112	0.471505	0.045	0.586139	0	5.942314	0.009153	0	0.000362
Santa Clara	2025	UBUS	Aggregate	Aggregate	Diesel	405.3675	44987.37	44987.37	0	1621.47	0	0.382968	0	0	0.006962	0	0	0.008	0.03238	0.0385	0.007277	0	0	0.032951	0.11	1121.875	0	0	0.003193	0	0	0.176752	0	0	0.06875	0	0	0	0	0	0.078266	0	0	0	0	0.22	0.0787	0	0	0.01063	0	0
Santa Clara	2025	UBUS	Aggregate	Aggregate	Electricity	23.31202	2427.54	0	2427.54	93.24809	4231.795	0	0	0	0	0	0	0.008	0.00977	0.01925	0	0	0	0.035907	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	2025	UBUS	Aggregate	Aggregate	Natural Ga	58.16247	6762.418	6762.418	0	232.6499	0	0.060506	0	0	0.000287	0	0	0.008	0.00408	0.0385	0.0003	0	0	0.033634	0.11	1317.877	0	0	4.320397	0	0	0.268658	0	0	0.06173	0	0	0	0	0	4.409282	0	0	0	0	0.97	50.3461	0	0	0	0	0

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2026
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_PM	CO2_RUNE	CO2_IDLEX	CO2_STREX	CH4_RUNE	CH4_IDLEX	CH4_STREX	N2O_RUNE	N2O_IDLEX	N2O_STRE	ROG_RUNI	ROG_IDLEX	ROG_STRE	ROG_HOTS	ROG_RUNI	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_HOTS	TOG_RUNI	TOG_DIUR	NH3_RUNE	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2026	HHDT	Aggregate	Aggregate	Gasoline	1.890208	133.7551	133.7551	0	37.81927	0	3.912832	0	0.833967	0.00242	0	0.001119	0.005	0.0327	0.002632	0	0.001218	0.02	0.093428	2030.337	0	50.00574	0.151681	0	0.000277	0.138602	0	0.029726	0.841165	0	0.001504	0.124256	1.119044	7.839877	1.227426	0	0.001647	0.124256	1.119044	7.839877	0.044272	33.21272	0	2.727013	0.020072	0	0.000494
Santa Clara	2026	HHDT	Aggregate	Aggregate	Diesel	8867.795	1016012	1016012	0	130549	0	1.761105	62.0312	2.955473	0.025195	0.027767	0	0.008774	0.027513	0.026334	0.029023	0	0.035095	0.07861	1583.151	11526.41	0	0.000725	0.23528	0	0.249426	1.815991	0	0.015602	5.065515	0	0	0	0	0	0.017762	5.766703	0	0	0	0	0	0.215914	0.07407	73.94194	0	0.014991	0.109148	0
Santa Clara	2026	HHDT	Aggregate	Aggregate	Electricity	110.5302	11535.57	0	11535.57	1443.078	21268.51	0	0	0	0	0	0	0.008558	0.014729	0	0	0	0.034232	0.042083	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	2026	HHDT	Aggregate	Aggregate	Natural Ga	863.4608	56635.39	56635.39	0	7769.707	0	0.976371	12.77067	0	0.001645	0.025604	0	0.0099	0.049192	0.001789	0.027847	0	0.036	0.140547	1365.074	10446.87	0	2.127999	33.90059	0	0.278279	2.129663	0	0.043949	0.508241	0	0	0	0	0	0.218721	34.62523	0	0	0	0	0	0.835034	12.62839	75.02016	0	0	0	0
Santa Clara	2026	LDA	Aggregate	Aggregate	Gasoline	598869.8	22031466	22031466	0	2780456	0	0.034968	0	0.23463	0.001102	0	0.001828	0.002	0.002655	0.001199	0	0.001988	0.008	0.007585	268.3766	0	67.64288	0.001934	0	0.063951	0.004196	0	0.031426	0.007138	0	0.285908	0.083161	0.217573	1.338275	0.019415	0	0.313033	0.083161	0.217573	1.338275	0.036474	0.693808	0	2.884139	0.002653	0	0.000669
Santa Clara	2026	LDA	Aggregate	Aggregate	Diesel	1478.944	42434.32	42434.32	0	6277.405	0	0.163286	0	0	0.013397	0	0	0	0.002717	0.014003	0	0	0.008	0.007761	228.026	0	0	0.001079	0	0	0.035926	0	0	0.023239	0	0	0.026457	0	0	0	0	0	0	0	0	0	0.0031	0.307439	0	0	0.002161	0	0
Santa Clara	2026	LDA	Aggregate	Aggregate	Electricity	64495.24	2739705	0	2739705	312996.4	1057752	0	0	0	0	0	0	0.002	0.001535	0	0	0	0.008	0.004385	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	2026	LDA	Aggregate	Aggregate	Plug-in Hyb	20380.43	866414.1	412496.8	453917.3	84273.1	137096.6	0.003124	0	0.11551	0.000542	0	0.001902	0.002	0.001386	0.000589	0	0.002068	0.008	0.00396	132.7519	0	64.33622	0.000421	0	0.042044	0.000552	0	0.020392	0.001351	0	0.173285	0.040391	0.037456	0.436203	0.019017	0.204877	0	0.133893	0.001312	0	0.000636
Santa Clara	2026	LDT1	Aggregate	Aggregate	Gasoline	50750.47	1625960	1625960	0	225981.5	0	0.104002	0	0.340042	0.001548	0	0.002421	0.002	0.003241	0.001684	0	0.002633	0.008	0.009261	319.1884	0	83.2086	0.002658	0	0.092241	0.008041	0	0.036412	0.022051	0	0.461638	0.148727	0.41724	2.377298	0.032177	0	0.505436	0.148727	0.41724	2.377298	0.036833	1.219346	0	4.549174	0.003156	0	0.000823
Santa Clara	2026	LDT1	Aggregate	Aggregate	Diesel	18.47771	256.5587	256.5587	0	50.46	0	1.626008	0	0	0.235786	0	0	0	0.002	0.003714	0.246448	0	0	0.008	0.010612	414.3219	0	0	0.013655	0	0	0.065277	0	0	0.293995	0	0	0	0	0	0.334693	0	0	0	0	0	0.0031	1.580267	0	0	0.003926	0	0
Santa Clara	2026	LDT1	Aggregate	Aggregate	Electricity	263.5822	10628.88	0	10628.88	1254.204	4103.625	0	0	0	0	0	0	0.002	0.001536	0	0	0	0.008	0.004388	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	2026	LDT1	Aggregate	Aggregate	Plug-in Hyb	130.6819	5898.082	2516.052	3382.03	540.3696	1021.474	0.002799	0	0.11551	0.000332	0	0.001311	0.002	0.001397	0.000362	0	0.001426	0.008	0.003992	118.9473	0	69.43161	0.000375	0	0.041793	0.000489	0	0.020158	0.00121	0	0.173285	0.023415	0.020044	0.275174	0.001766	0	0.189725	0.023415	0.020044	0.275174	0.017917	0.183572	0	1.339893	0.001176	0	0.000686
Santa Clara	2026	LDT2	Aggregate	Aggregate	Gasoline	296178.9	10561285	10561285	0	1383934	0	0.057197	0	0.297788	0.00115	0	0.001868	0.002	0.003134	0.00125	0	0.002032	0.008	0.008953	332.1248	0	84.47809	0.002453	0	0.074444	0.005294	0	0.035027	0.009395	0	0.338458	0.076755	0.212879	1.330363	0.013709	0	0.370569	0.076755	0.212879	1.330363	0.037798	0.757265	0	3.299571	0.003283	0	0.000835
Santa Clara	2026	LDT2	Aggregate	Aggregate	Diesel	1079.589	39200.14	39200.14	0	5104.36	0	0.037108	0	0	0.004598	0	0	0	0.002	0.00313	0.004806	0	0	0.008	0.008943	302.0718	0	0	0.000595	0	0	0.047592	0	0	0.012807	0	0	0	0	0	0.01458	0	0	0	0	0	0.0031	0.12935	0	0	0.002862	0	0
Santa Clara	2026	LDT2	Aggregate	Aggregate	Electricity	2705.079	90693.22	0	90693.22	13682.37	35015.07	0	0	0	0	0	0	0.002	0.001528	0	0	0	0.008	0.004365	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	2026	LDT2	Aggregate	Aggregate	Plug-in Hyb	2986.353	127896.3	57308.29	70587.98	12348.57	21319.68	0.00294	0	0.11551	0.000411	0	0.00154	0.002	0.001392	0.000447	0	0.001675	0.008	0.003978	124.9411	0	76.35739	0.000394	0	0.041776	0.000513	0	0.020142	0.001271	0	0.173285	0.025698	0.023308	0.30414	0.001855	0	0.189725	0.025698	0.023308	0.30414	0.018799	0.192822	0	1.339893	0.001235	0	0.000755
Santa Clara	2026	LHDT1	Aggregate	Aggregate	Gasoline	19567.35	734252.9	734252.9	0	291524.3	0	0.134825	0.034078	0.592259	0.00144	0	0.000258	0.002	0.0273	0.0015	0	0.00028	0.008	0.078	841.5517	116.9335	25.61185	0.00645	0.107779	0.030306	0.00767	0.002904	0.048837	0.03157	0.390607	0.14863	0.042429	0.244239	2.568634	0.046067	0.569973	0.162731	0.042429	0.244239	2.568634	0.044952	1.000325	3.761042	3.194844	0.00832	0.001156	0.000253
Santa Clara	2026	LHDT1	Aggregate	Aggregate	Diesel	10635.31	416619.3	416619.3	0	133778.8	0	1.219281	1.732484	0	0.030022	0.026603	0	0.003	0.0273	0.031379	0.027806	0	0.012	0.078	625.228	128.0664	0	0.006994	0.005098	0	0.098505	0.020177	0	0.150578	0.10976	0	0	0	0	0.171423	0.124954	0	0	0	0	0.184377	0.40172	0.909745	0	0.005924	0.001213	0
Santa Clara	2026	LHDT1	Aggregate	Aggregate	Electricity	378.0593	23974.57	0	23974.57	5290.738	15701.21	0	0	0	0	0	0	0.002	0.01365	0	0	0	0.008	0.039	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	2026	LHDT2	Aggregate	Aggregate	Gasoline	2513.651	91174.03	91174.03	0	37449.66	0	0.127191	0.033359	0.581518	0.001301	0	0.0002	0.002	0.03185	0.001415	0	0.000218	0.008	0.091	950.6797	135.3583	25.11699	0.00457	0.105616	0.029314	0.007823	0.002803	0.047205	0.020413	0.382638	0.142338	0.039798	0.221425	2.401547	0.029786	0.558345	0.155842	0.039798	0.221425	2.401547	0.04499	0.781956	3.768092	3.147796	0.009398	0.001338	0.000248
Santa Clara	2026	LHDT2	Aggregate	Aggregate	Diesel	4995.258	193100.7	193100.7	0	62834.06	0	1.030069	1.717944	0	0.028773	0.027014	0	0.003	0.03185	0.030074	0.028235	0	0.012	0.091	744.6842	205.1133	0	0.00672	0.005098	0	0.117325	0.032316	0	0.146681	0.10976	0	0	0	0	0.16471	0.124954	0	0	0	0	0.19232	0.367309	0.909745	0	0.007056	0.001944	0
Santa Clara	2026	LHDT2	Aggregate	Aggregate	Electricity	96.38373	5822.064	0	5822.064	1278.565	3755.595	0	0	0	0	0	0	0.002	0.015925	0	0	0	0.008	0.0455	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	2026	MCY	Aggregate	Aggregate	Gasoline	28797.04	167092.5	167092.5	0	57594.08	0	0.54585	0	0.123182	0.001818	0	0.003256	0.001	0.0042	0.001945	0	0.00347	0.004	0.012	186.8446	0	46.30646	0.154451	0	0.172746	0.038475	0	0.007381	0.991178	0	1.267526	3.558543	3.769688	3.854231	1.200425	0	1.378329	3.558543	3.769688	3.854231	0.008889	11.99329	0	7.931677	0.001847	0	0.000458
Santa Clara	2026	MDV	Aggregate	Aggregate	Gasoline	162557.9	5631323	5631323	0	753924.4	0	0.077249	0	0.361249	0.00113	0	0.001888	0.002	0.003182	0.001228	0	0.002053	0.008	0.00909	402.7076	0	102.7358	0.003084	0	0.087398	0.006351	0	0.037495	0.012544	0	0.424623	0.087977	0.255029	1.559913	0.018304	0	0.464909	0.087977	0.255029	1.559913	0.037518	0.838043	0	3.531694	0.003981	0	0.001016
Santa Clara	2026	MDV	Aggregate	Aggregate	Diesel	2430.299	84111.54	84111.54	0	11337.22	0	0.040802	0	0	0.004381	0	0	0	0.002	0.003241	0.004579	0	0	0.008	0.009261	399.673	0	0	0.000469	0	0	0.062969	0	0	0.010103	0	0	0	0	0	0.011502	0	0	0	0	0	0.0031	0.197458	0	0	0.003787	0	0
Santa Clara	2026	MDV	Aggregate	Aggregate	Electricity	2850.956	95858.35	0	95858.35	14435.41	37009.23	0	0	0	0	0	0	0.002	0.001528	0	0	0	0.008	0.004365	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	2026	MDV	Aggregate	Aggregate	Plug-in Hyb	1813.351	74577.72	33714.26	40863.46	7498.208	12341.98	0.002966	0	0.11551	0.000463	0	0.001713	0.002	0.001392	0.000504	0	0.001863	0.008	0.003977	126.0521	0	93.79299	0.000396	0	0.041612	0.000513	0	0.019989	0.001283	0	0.173285	0.029908	0.026996	0.337381	0.001872	0	0.189725	0.029908	0.026996	0.337381	0.018987	0.194537	0	1.339893	0.001246	0	0.000927
Santa Clara	2026	MH	Aggregate	Aggregate	Gasoline	2263.186	21108.38	21108.38	0	226.4092	0	0.335195	0	0.432131	0.001549	0	0.000374	0.003	0.015756	0.001685	0	0.000406	0.012	0.045017	1946.632	0	31.26805	0.012049	0	0.036404	0.022132	0	0.046519	0.050974	0	0.149854	10.64717	0.254614	4.131655	0.074381	0	0.164071	10.64717	0.254614	4.131655	0.044921	1.181993	0	3.275797	0.019244	0	0.000309
Santa Clara	2026	MH	Aggregate	Aggregate	Diesel	1010.774	9718.417	9718.417	0	101.0774	0	3.846579	0	0	0.08072	0	0	0.004	0.015675	0.084369	0	0.016	0.044785	1082.849	0	0	0.005293	0	0	0.170603	0	0	0.11395	0	0	0	0	0	0	0.129725	0	0	0	0	0	0.16529	0.373655	0	0	0.010261	0	0
Santa Clara	2026	MHDT	Aggregate	Aggregate	Gasoline	1410.726	72468.64	72468.64	0	28225.8	0	0.333028	0.083566	0.407845	0.001339	0	0.000499	0.003	0.015756	0.001457	0	0.000542	0.012	0.045017	1727.179	521.8124	44.55752	0.010627	0.263675	0.044579	0.017598	0.007127	0.032029	0.051634	1.01721	0.242322	0.028744	0.236552	2.400687	0.073545	1.48431	0.265312	0.028744	0.236552	2.400687	0.044997	1.050142	15.1686	5.262786	0.017075	0.005159	0.00044
Santa Clara	2026	MHDT	Aggregate	Aggregate	Diesel	1067.5.11	4354555.4	435455.4	0	127504.2	0	1.02886	12.38939	1.644141	0.010796	0.020382	0	0.003	0.015941	0.011284	0.021304	0	0.012	0.045545	1134.952	2210.329	0	0.001134	0.010419	0	0.178812	0.348238	0	0.024422	0.224312	0	0	0	0	0.027803	0.255363	0	0	0	0	0.213113	0.099563	7.520816	0	0.010747	0.02093	0
Santa Clara	2026	MHDT	Aggregate	Aggregate	Electricity	167.5841	8816.663	0	8816.663	2173.174	9651.078	0	0	0	0	0	0	0.003	0.007951	0	0	0	0.012	0.022716	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	2026	MHDT	Aggregate	Aggregate	Natural Ga	107.6314	4901.771	4901.771	0	1001.682	0	0.116472	6.407029	0	0.001266	0.018977	0	0.003	0.01601	0.001377	0.020639	0	0.012	0.045743	973.703	5277.958	0	0.755705	16.66564	0	0.198496	1.075946	0	0.010798	0.238119	0	0	0	0	0.771252	17.00851	0	0	0	0	1.06	2.995274	36.69576	0	0	0	0
Santa Clara	2026	OBUS	Aggregate	Aggregate	Gasoline	419.1997	18162.11	18162.11	0	8387.348	0	0.418185	0.062602	0.399155	0.00097	0	0.000258	0.003	0.01568	0.001055	0	0.000281	0.012	0.044799	1724.911	374.6239	31.08783	0.011431	0.195819	0.035179	0.020728	0.005108	0.030453	0.055331	0.746751	0.186435	0.035194	0.177337	3.200029	0.080739	1.089657	0.204123	0.035194	0.177337	3.200029	0.044499	1.215872	5.777453	3.882011	0.017053	0.003704	0.000307
Santa Clara	2026	OBUS	Aggregate	Aggregate	Diesel	949.0452	62674.48	62674.48	0	9750.025	0	1.092349	6.912226	1.518478	0.018173	0.007147	0	0.003	0.018049	0.018995	0.00747	0	0.012	0.05157	1245.043	1523.794	0	0.001766	0.020826	0	0.196157	0.240074	0	0.038011	0.448385	0	0	0	0	0.043273	0.510453	0	0	0	0	0.216379	0.139488	7.649271	0	0.01179	0.014429	0
Santa Clara	2026	OBUS	Aggregate	Aggregate	Electricity	4.484159	364.7881	0	364.7881	89.71906	404.1294	0	0	0	0	0	0	0.003	0.00784	0	0	0	0.012	0.022399	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	2026	OBUS	Aggregate	Aggregate	Natural Ga	9.101244	599.9791	599.9791	0	81.00107	0	0.145347	1.518344	0	0.001276	0.004354	0	0.003	0.016148	0.001388	0.004735	0	0.012	0.046137	975.0003	1187.914	0	0.81456	4.001439	0	0.19876	0.242164	0	0.011638	0.057173	0	0	0	0	0.831318	4.083762	0	0	0	0	1.06	3.321042	8.378673	0	0	0	0
Santa Clara	2026	SBUS	Aggregate	Aggregate	Gasoline	183.7933	9054.551	9054.551	0	735.1732	0	0.474165	0.887577	0.73371	0.000873	0	0.00058	0.002	0.015721	0.00095	0	0.000631	0.008	0.044917	802.4349	2565.528	57.27504	0.01005	2.4667	0.074539	0.025921	0.082658	0.067212	0.048718	10.63718	0.423572	0.1241	0.322638	1.96833	0.07109	15.52175	0.463758	0.1241	0.322638	1.96833	0.045	1.246814	82.21455	10.07789	0.007933	0.025363	0.000566
Santa Clara	2026	SBUS	Aggregate	Aggregate	Diesel	674.9981	15210.89	15210.89	0	9773.973	0	3.406071	20.83077	0.509343	0.017715	0.016839	0	0.003	0.015721	0.018516	0.017601	0	0.012	0.044917	1135.538	2209.663	0	0.002498	0.007888	0	0.178905	0.348133	0	0.053781	0.169828	0	0	0	0	0.061225	0.193336	0	0	0	0	0.155771	0.169257	4.880858	0	0.010753	0.020924	0
Santa Clara	2026	SBUS	Aggregate	Aggregate	Electricity	7.587222	244.2395	0	244.2395	87.39442	257.2955	0	0	0	0	0	0	0.002	0.00786	0	0	0	0.01027	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	2026	SBUS	Aggregate	Aggregate	Natural Ga	26.16468	642.5523	642.5523	0	378.8645	0	0.532059	5.249897	0	0.003378	0.011858	0	0.003	0.015721	0.003674	0.012897	0	0.012	0.044917	1243.421	4080.833	0	3.338467	14.99739	0	0.25348	0.831904	0	0.0477	0.214283	0	0	0	0	3.407151	15.30593	0	0	0	0	1.06	11.18687	21.87624	0	0	0	0
Santa Clara	2026	UBUS	Aggregate	Aggregate	Gasoline	46.35522	4840.865	4840.865	0	185.4209	0	0.026897	0	0.439741	0.001143	0	0.000128	0.002	0.03185	0.001243	0	0.00014	0.008	0.091	925.6516	0	36.30949	0.001945	0	0.042807	0.004209	0	0.069602	0.005374	0	0.151507	0.043604	0.092107	0.471119	0.007841	0	0.165881	0.043604	0.092107	0.471119	0.045	0.590355	0	5.738214	0.009151	0	0.000359
Santa Clara	2026	UBUS	Aggregate	Aggregate	Diesel	396.77	44084.04	44084.04	0	1587.08	0	0.382074	0	0	0.006946	0	0	0	0.008221	0.0385	0.00726	0	0	0.032883	0.11	1310.339	0	0	0.003187	0	0	0.174934	0	0	0.068625	0	0	0	0	0	0.078125	0	0	0	0	0	0.22	0.078518	0	0	0.010521	0	0
Santa Clara	2026	UBUS	Aggregate	Aggregate	Electricity	28.65959	2995.558	0	2995.558	114.6384	5221.989	0	0	0	0	0	0	0.008972	0.01925	0	0	0	0.035887	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	2026	UBUS	Aggregate	Aggregate	Natural Ga	62.84535	7257.192	7257.192	0	251.3814	0	0.060787	0	0	0.000288	0	0	0.008445	0.0385	0.000301	0	0	0.033781	0.11	1320.935	0	0	4.332576	0	0	0.269281	0	0	0.061904	0	0	0	0	0	0	0.421712	0	0	0	0	0	0.97	50.5588	0	0	0	0	0

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2027
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_STF	PM2.5_PM	PM2.5_PM	PM10_RUN	PM10_IDLE	PM10_STR	PM10_TIR	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	2027	HHDT	Aggregate	Aggregate	Gasoline	1.833105	147.0378	147.0378	0	36.67677	0	3.730042	0	0.773498	0.002199	0	0.001027	0.005	0.032692	0.002391	0	0.001117	0.02	0.093405	2000.505	0	49.66925	0.135639	0	0.000268	0.136273	0	0.02867	0.73131	0	0.001453	0.11326	1.019783	7.147336	1.067126	0	0.001591	0.11326	1.019783	7.147336	0.044505	30.82312	0	3.048179	0.019777	0	0.000491
Santa Clara	2027	HHDT	Aggregate	Aggregate	Diesel	9011.071	1021241	1021241	0	132754.8	0	1.704043	61.72079	2.958034	0.025062	0.026785	0	0.008776	0.027672	0.026195	0.027996	0	0.035105	0.079063	1556.123	11312.44	0	0.000701	0.234878	0	0.245168	1.782279	0	0.015102	5.056861	0	0	0	0	0	0.017193	5.756851	0	0	0	0	0.216628	0.070456	73.92424	0	0.014736	0.107122	0
Santa Clara	2027	HHDT	Aggregate	Aggregate	Electricity	177.8052	18594.17	0	18594.17	2312.242	34279.09	0	0	0	0	0	0	0.008561	0.015051	0	0	0	0.034243	0.043002	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	2027	HHDT	Aggregate	Aggregate	Natural Ga	889.1692	57261.81	57261.81	0	7941.659	0	0.907136	12.38898	0	0.001615	0.025966	0	0.009	0.049992	0.001756	0.028241	0	0.036	0.142836	1353.997	10371.37	0	2.019211	32.72582	0	0.276021	2.114271	0	0.040872	0.488388	0	0	0	0	0	0.827361	12.24575	75.28309	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2027	LDA	Aggregate	Aggregate	Gasoline	599340.5	21995339	21995339	0	2782742	0	0.032349	0	0.225312	0.001054	0	0.001765	0.002	0.002654	0.001146	0	0.001919	0.008	0.007584	263.8358	0	66.33426	0.001782	0	0.060463	0.004024	0	0.030664	0.009466	0	0.267784	0.080009	0.214602	1.316821	0.037295	0.628802	0	2.737589	0.002608	0	0.000656
Santa Clara	2027	LDA	Aggregate	Aggregate	Diesel	1347.748	38343.79	38343.79	0	5721.586	0	0.140881	0	0	0.011715	0	0	0.002	0.00272	0.012244	0	0	0.008	0.007772	225.3761	0	0	0.000974	0	0	0.035508	0	0	0.020977	0	0	0	0	0	0	0.023881	0	0	0	0	0	0.00231	0.295578	0	0	0.002136	0	0
Santa Clara	2027	LDA	Aggregate	Aggregate	Electricity	67294.12	2805164	0	2805164	324882.8	1083025	0	0	0	0	0	0	0.002	0.001535	0	0	0	0.008	0.004387	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	2027	LDA	Aggregate	Aggregate	Plug-in Hyb	21617.53	903738.3	422627.3	481111	89388.5	145309.9	0.003069	0	0.11551	0.000505	0	0.001811	0.002	0.001389	0.000549	0	0.00197	0.008	0.00397	130.3968	0	63.69406	0.000412	0	0.041864	0.000538	0	0.020225	0.001327	0	0.173285	0.041139	0.041737	0.463414	0.018819	0.201249	0	1.339893	0.001289	0	0.00063
Santa Clara	2027	LDT1	Aggregate	Aggregate	Gasoline	49888.15	1593479	1593479	0	222126.9	0	0.093626	0	0.322281	0.001455	0	0.002295	0.002	0.003241	0.001582	0	0.002496	0.008	0.009259	314.3854	0	81.55325	0.004547	0	0.086445	0.007451	0	0.035413	0.019635	0	0.427723	0.140959	0.397237	2.286124	0.028652	0	0.468303	0.140959	0.397237	2.286124	0.037251	1.12869	0	4.23978	0.003108	0	0.000806
Santa Clara	2027	LDT1	Aggregate	Aggregate	Diesel	6.227876	90.54084	90.54084	0	17.39549	0	1.298199	0	0	0.195794	0	0	0.002	0.003665	0.204647	0	0	0.008	0.010473	394.8653	0	0	0.011321	0	0	0.062211	0	0	0.243739	0	0	0	0	0	0	0.27748	0	0	0	0	0	0.0031	1.74279	0	0	0.003742	0	0
Santa Clara	2027	LDT1	Aggregate	Aggregate	Electricity	300.4983	12309.71	0	12309.71	1437.605	4752.566	0	0	0	0	0	0	0.002	0.001535	0	0	0	0.008	0.004385	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	2027	LDT1	Aggregate	Aggregate	Plug-in Hyb	168.315	7479.707	3153.075	4326.632	695.9826	1306.772	0.002766	0	0.11551	0.000305	0	0.001223	0.002	0.0014	0.000332	0	0.00133	0.008	0.003999	117.5444	0	68.77997	0.000369	0	0.041651	0.00048	0	0.020025	0.001196	0	0.173285	0.023215	0.020021	0.275602	0.001745	0	0.189725	0.023215	0.020021	0.275602	0.017705	0.181413	0	1.339893	0.001162	0	0.00068
Santa Clara	2027	LDT2	Aggregate	Aggregate	Gasoline	301290.3	10685987	10685987	0	1406457	0	0.052589	0	0.283866	0.001098	0	0.001802	0.002	0.003137	0.001194	0	0.00196	0.008	0.008963	326.5481	0	82.86482	0.002292	0	0.07083	0.005044	0	0.034203	0.008665	0	0.319239	0.07425	0.209956	1.308636	0.012643	0	0.349526	0.07425	0.209956	1.308636	0.038412	0.725393	0	3.150133	0.003228	0	0.000819
Santa Clara	2027	LDT2	Aggregate	Aggregate	Diesel	1103.123	39708.7	39708.7	0	5205.703	0	0.033914	0	0	0.004292	0	0	0.002	0.003135	0.004487	0	0	0.008	0.008958	297.5211	0	0	0.000577	0	0	0.046875	0	0	0.012423	0	0	0	0	0	0	0.014142	0	0	0	0	0	0.0031	0.127877	0	0	0.002819	0	0
Santa Clara	2027	LDT2	Aggregate	Aggregate	Electricity	3306.06	108939.5	0	108939.5	16647.44	42059.66	0	0	0	0	0	0	0.002	0.001529	0	0	0	0.008	0.004368	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	2027	LDT2	Aggregate	Aggregate	Plug-in Hyb	3429.213	144081.9	63603.3	80478.56	14179.8	24306.92	0.002897	0	0.11551	0.000381	0	0.001463	0.002	0.001395	0.000414	0	0.001581	0.008	0.003987	123.0899	0	75.68447	0.000386	0	0.0416	0.000501	0	0.019977	0.001253	0	0.173285	0.025755	0.022981	0.300816	0.001828	0	0.189725	0.025755	0.022981	0.300816	0.018524	0.189972	0	1.339893	0.001217	0	0.000748
Santa Clara	2027	LHDT1	Aggregate	Aggregate	Gasoline	19670.43	736983.5	736983.5	0	293060.1	0	0.118942	0.033105	0.571033	0.001405	0	0.000239	0.002	0.0273	0.001528	0	0.00026	0.008	0.078	829.449	115.9534	25.51381	0.005601	0.105399	0.029155	0.00682	0.002869	0.047788	0.026962	0.379506	0.142236	0.03999	0.233145	2.457411	0.039343	0.553775	0.15573	0.03999	0.233145	2.457411	0.044981	0.93654	3.763109	3.224747	0.0082	0.001146	0.000252
Santa Clara	2027	LHDT1	Aggregate	Aggregate	Diesel	10848.44	422662.3	422662.3	0	136459.7	0	1.08439	1.64968	0	0.028062	0.026509	0	0.003	0.0273	0.029331	0.027708	0	0.012	0.078	622.7952	126.7206	0	0.006587	0.005098	0	0.098122	0.019965	0	0.141815	0.10976	0	0	0	0	0	0.161447	0.124954	0	0	0	0	0.188998	0.373722	0.909745	0	0.005901	0.001201	0	0
Santa Clara	2027	LHDT1	Aggregate	Aggregate	Electricity	649.0881	39875.83	0	39875.83	9086.427	26117.1	0	0	0	0	0	0	0.002	0.01365	0	0	0	0.008	0.039	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	2027	LHDT2	Aggregate	Aggregate	Gasoline	2509.546	90648.2	90648.2	0	37388.49	0	0.111653	0.032331	0.561944	0.001268	0	0.000185	0.002	0.03185	0.00138	0	0.000201	0.008	0.091	938.4469	134.3401	24.9353	0.003988	0.102929	0.028094	0.007002	0.002754	0.046144	0.017533	0.370918	0.135504	0.037689	0.212342	2.320101	0.025583	0.541243	0.14836	0.037689	0.212342	2.320101	0.044994	0.742979	3.770326	3.155517	0.009278	0.001328	0.000247
Santa Clara	2027	LHDT2	Aggregate	Aggregate	Diesel	5135.734	196396.2	196396.2	0	64601.07	0	0.939745	1.642203	0	0.027496	0.027012	0	0.003	0.03185	0.028739	0.028234	0	0.012	0.091	739.7686	203.2066	0	0.006444	0.005098	0	0.116551	0.032015	0	0.13873	0.10976	0	0	0	0	0	0.157935	0.124954	0	0	0	0	0.195561	0.350532	0.909745	0	0.00701	0.001925	0	0
Santa Clara	2027	LHDT2	Aggregate	Aggregate	Electricity	164.9398	9665.772	0	9665.772	2187.868	6234.965	0	0	0	0	0	0	0.002	0.015925	0	0	0	0.008	0.0455	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	2027	MCY	Aggregate	Aggregate	Gasoline	29075.8	167761.7	167761.7	0	58151.6	0	0.535092	0	0.117492	0.00183	0	0.003236	0.001	0.0042	0.001959	0	0.003451	0.004	0.012	186.4654	0	45.31465	0.151026	0	0.168253	0.038022	0	0.007087	0.961131	0	1.228813	3.558844	3.781493	3.845178	1.168054	0	1.336388	3.558844	3.781493	3.845178	0.008923	11.71041	0	7.90164	0.001843	0	0.000448
Santa Clara	2027	MDV	Aggregate	Aggregate	Gasoline	165596	5720178	5720178	0	767968.9	0	0.06839	0	0.336026	0.001074	0	0.001805	0.002	0.003182	0.001168	0	0.001963	0.008	0.009092	395.7552	0	100.7218	0.002795	0	0.081565	0.005877	0	0.036232	0.011189	0	0.391	0.084223	0.248249	1.520956	0.016327	0	0.428096	0.084223	0.248249	1.520956	0.038107	0.790051	0	3.34381	0.003912	0	0.000996
Santa Clara	2027	MDV	Aggregate	Aggregate	Diesel	2435.715	83100.92	83100.92	0	11312.15	0	0.036863	0	0	0.004069	0	0	0.002	0.003253	0.004253	0	0	0.008	0.009296	394.7915	0	0	0.000446	0	0	0.0622	0	0	0.009604	0	0	0	0	0	0	0.010934	0	0	0	0	0	0.0031	0.194438	0	0	0.003741	0	0
Santa Clara	2027	MDV	Aggregate	Aggregate	Electricity	3455.571	113998.9	0	113998.9	17408.95	44012.98	0	0	0	0	0	0	0.002	0.001529	0	0	0	0.008	0.004368	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	2027	MDV	Aggregate	Aggregate	Plug-in Hyb	2094.107	84934.84	37715.29	47219.56	8659.133	14261.71	0.002914	0	0.11551	0.000422	0	0.001593	0.002	0.001395	0.000459	0	0.001732	0.008	0.003987	123.818	0	92.75106	0.000387	0	0.041448	0.0005	0	0.019836	0.00126	0	0.173285	0.029525	0.02765	0.340516	0.001839	0	0.189725	0.029525	0.02765	0.340516	0.01865	0.191096	0	1.339893	0.001224	0	0.000917
Santa Clara	2027	MH	Aggregate	Aggregate	Gasoline	2196.554	20762.47	20762.47	0	2192.7432	0	0.298167	0	0.437987	0.001494	0	0.00036	0.003	0.015756	0.001625	0	0.000392	0.012	0.045017	1946.251	0	31.10334	0.010537	0	0.035941	0.020581	0	0.047644	0.043279	0	0.146043	9.869053	0.237897	3.909775	0.063153	0	0.159898	9.869053	0.237897	3.909775	0.044964	0.962497	0	3.180054	0.019241	0	0.000307
Santa Clara	2027	MH	Aggregate	Aggregate	Diesel	1025.714	9821.237	9821.237	0	102.5714	0	3.725695	0	0	0.075744	0	0	0.004	0.015675	0.079169	0	0	0.016	0.044785	1083.28	0	0	0.005175	0	0	0.170671	0	0	0.111405	0	0	0	0	0	0	0.126828	0	0	0	0	0	0.169608	0.362991	0	0	0.010265	0	0
Santa Clara	2027	MHDT	Aggregate	Aggregate	Gasoline	1408.047	72579.6	72579.6	0	28178.21	0	0.283838	0.08115	0.393455	0.001336	0	0.000488	0.003	0.015756	0.001453	0	0.000531	0.012	0.045017	1709.11	517.1016	43.80548	0.009103	0.265767	0.043342	0.015723	0.007017	0.031676	0.04359	1.018957	0.232679	0.026764	0.221698	2.268825	0.063606	1.48686	0.254754	0.026764	0.221698	2.268825	0.045	0.873344	15.1889	5.024018	0.016896	0.005112	0.000433
Santa Clara	2027	MHDT	Aggregate	Aggregate	Diesel	10767.26	434295.5	434295.5	0	128657.2	0	0.939446	12.08814	1.635782	0.009401	0.016812	0	0.003	0.015941	0.009826	0.017572	0	0.012	0.045545	1128.563	2191.462	0	0.000987	0.009987	0	0.177806	0.345266	0	0.021244	0.215016	0	0	0	0	0	0.024185	0.244779	0	0	0	0	0.214146	0.090922	7.512068	0	0.010687	0.020752	0	0
Santa Clara	2027	MHDT	Aggregate	Aggregate	Electricity	282.6209	14714.25	0	14714.25	3656.161	16080.41	0	0	0	0	0	0	0.003	0.00795	0	0	0	0.012	0.022715	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	2027	MHDT	Aggregate	Aggregate	Natural Ga	116.0954	5192.025	5192.025	0	1091.191	0	0.109888	6.361962	0	0.001299	0.019267	0	0.003	0.016009	0.001413	0.020955	0	0.012	0.045741	968.913	5260.482	0	0.758684	16.39433	0	0.197519	1.072384	0	0.01084	0.234243	0	0	0	0	0	0.774293	16.73162	0	0	0	0	1.06	2.994053	37.37847	0	0	0	0
Santa Clara	2027	OBUS	Aggregate	Aggregate	Gasoline	407.8269	17375.97	17375.97	0	8159.8	0	0.387611	0.061312	0.399202	0.001003	0	0.000264	0.003	0.01568	0.001091	0	0.000287	0.012	0.044799	1706.278	372.2847	30.84881	0.010578	0.195621	0.034722	0.019382	0.004991	0.030332	0.051093	0.746785	0.184017	0.035247	0.182391	3.280727	0.074554	1.089707	0.201475	0.035247	0.182391	3.280727	0.04499	1.115566	5.777658	3.835425	0.016868	0.00368	0.000305
Santa Clara	2027	OBUS	Aggregate	Aggregate	Diesel	975.8726	63044.62	63044.62	0	10038.86	0	1.057611	6.690487	1.502438	0.017399	0.006668	0	0.003	0.018093	0.018186	0.006697	0	0.012	0.051694	1229.962	1514.616	0	0.001687	0.020933	0	0.193781	0.238628	0	0.036317	0.450692	0	0	0	0	0	0.041344	0.513079	0	0	0	0	0.216551	0.134702	7.701933	0	0.011647	0.014343	0	0
Santa Clara	2027	OBUS	Aggregate	Aggregate	Electricity	7.148004	573.2173	0	573.2173	143.0173	635.037	0	0	0	0	0	0	0.003	0.00784	0	0	0	0.012	0.022399	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	2027	OBUS	Aggregate	Aggregate	Natural Ga	10.00472	655.306	655.306	0	89.042	0	0.130414	1.511841	0	0.001347	0.004509	0	0.003	0.016148	0.001465	0.004904	0	0.012	0.046137	962.0387	1183.268	0	0.822734	3.921152	0	0.196118	0.241217	0	0.011755	0.056026	0	0	0	0	0	0.839661	4.001823	0	0	0	0	1.06	3.343066	8.72839	0	0	0	0
Santa Clara	2027	SBUS	Aggregate	Aggregate	Gasoline	188.5987	9259.272	9259.272	0	754.3948	0	0.450353	0.871777	0.740409	0.000875	0	0.000586	0.002	0.015721	0.000952	0	0.000637	0.008	0.044917	798.7707	2554.986	56.83783	0.009468	2.468092	0.07398	0.025075	0.081195	0.067806	0.045802	10.63953	0.419588	0.124616	0.336253	2.048577	0.066835	15.52518	0.459397	0.124616	0.336253	2.048577	0.045	1.177716	82.22881	9.921963	0.007897	0.025259	0.000562
Santa Clara	2027	SBUS	Aggregate	Aggregate	Diesel	674.8268	15110.62	15110.62	0	9771.491	0	3.20468	20.2361	0.521414	0.016822	0.015508	0	0.003	0.015721	0.017582	0.016209	0	0.012	0.044917	1131.356	2199.096	0	0.002413	0.007856	0	0.178246	0.346468	0	0.05196	0.169144	0	0	0	0	0	0.059153	0.192557	0	0	0	0	0.159585	0.164971	4.989511	0	0.010713	0.020824	0	0
Santa Clara	2027	SBUS	Aggregate	Aggregate	Electricity	12.30338	395.5247	0	395.5247	141.8818	416.6678	0	0	0	0	0	0	0.003	0.00257	0.00786	0	0	0	0.010282	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	2027	SBUS	Aggregate	Aggregate	Natural Ga	27.00068	655.8362	655.8362	0	390.9698	0	0.516279	5.240894	0	0.003378	0.012073	0	0.003	0.015721	0.003674	0.01313	0	0.012	0.044917	1235.508	4086.873	0	3.295023	14.88623	0	0.251866	0.833136	0	0.047079	0.212695	0	0	0	0	0	0.362812	15.19249	0	0	0	0	1.06	10.98242	22.36041	0	0	0	0
Santa Clara	2027	UBUS	Aggregate	Aggregate	Gasoline	46.49126	4855.072	4855.072	0	185.9651	0	0.026613	0	0.433152	0.001143	0	0.000128	0.002	0.03185	0.001244	0	0.00014	0.008	0.091	925.4384	0	36.07215	0.001903	0	0.042735	0.004171	0	0.068782	0.005254	0	0.151018	0.054894	0.139449	0.729049	0.007666	0	0.165346	0.054894	0.139449	0.729049	0.045	0.595487	0	5.593095	0.009149	0	0.000357
Santa Clara	2027	UBUS	Aggregate	Aggregate	Diesel	397.2804	44140.83	44140.83	0	1589.121	0	0.382078	0	0	0.006946	0	0	0.008	0.08221	0.0385	0.00726	0	0	0.032883	0.11	1110.45	0	0	0.003187	0	0	0.174952	0	0	0.068626	0	0	0	0	0	0.078125	0	0	0	0	0	0.22	0.078519	0	0	0.010522	0	0
Santa Clara	2027	UBUS	Aggregate	Aggregate	Electricity	29.37609	3075.292	0	3075.292	117.5043	5360.985	0	0	0	0	0	0	0.008	0.08954	0.01925	0	0	0	0.035816	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	2027	UBUS	Aggregate	Aggregate	Natural Ga	63.05154	7280.138	7280.138	0	252.2062	0	0.060784	0	0	0.000288	0	0	0.008445	0.0385	0.000301	0	0	0	0.03378	0.11	1320.896	0	0	4.332417	0	0	0.269273	0	0	0.061902	0	0	0	0	0	0.442149	0	0	0	0	0	0.97	50.55602	0	0	0	0	0

Attachment 4: Project Construction and Operation Dispersion Modeling Inputs and Risk Calculations

Construction Health Risk Assessment and Calculations

Dot & Bar (Valley Title), San Jose, CA

Year	Unmitigated DPM	DPM EMFAC2021	Unmitigated Emissions	Unmitigated Fug PM2.5	Fug PM2.5 EMFAC2021	Unmitigated Emissions
2023	0.0232	0.0041	0.0273	0.0872	0.0032	0.0904
2024	0.0449	0.0054	0.0503	0.0206	0.0043	0.0249
2025	0.0710	0.0053	0.0763	0.0000	0.0042	0.0042
2026	0.0118	0.0029	0.0147	0.0000	0.0024	0.0024

Year	Mitigated DPM	DPM EMFAC2021	Mitigated Emissions	Mitigated Fug PM2.5	Fug PM2.5 EMFAC2021	Mitigated Emissions
2023	0.0018	0.0041	0.0059	0.0170	0.0032	0.0202
2024	0.0023	0.0054	0.0077	0.0040	0.0043	0.0083
2025	0.0058	0.0053	0.0111	0.0000	0.0042	0.0042
2026	0.0015	0.0029	0.0045	0.0000	0.0024	0.0024

Icon-Echo MU, San Jose, CA - Construction Health Impact Modeling

Source Parameters for Point Sources Used in Construction Modeling

Source	Stack Height (ft)	Stack Diam (in)	Exhaust Temp (F)	Volume Flow (acfm)	Velocity (ft/min)	Velocity (ft/sec)
Construction Equipment	9.0	2.5	918	632	18540	309.0

Source	Stack Height (m)	Stack Diam (m)	Exhaust Temp (K)			Velocity (ft/sec)
Construction Equipment	2.74	0.064	765.37			94.2

Dot & Bar (Valley Title), San Jose, CA

DPM Construction Emissions and Modeling Emission Rates

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Emissions per Point Source (g/s)
2023	Construction	0.0273	Point	234	54.6	0.01206	1.52E-03	6.50E-06
2024	Construction	0.0503	Point	234	100.6	0.02224	2.80E-03	1.20E-05
2025	Construction	0.0763	Point	234	152.7	0.03375	4.25E-03	1.82E-05
2026	Construction	0.0147	Point	234	29.5	0.00652	8.21E-04	3.51E-06
Total		***0.1687***			***337.4***	***0.0746***	***0.0094***	

Emissions assumed to be evenly distributed over each construction areas

hr/day =	14.5	(7am - 10pm M-F, 7am-7pm Sat)
days/yr =	312	
hours/year =	4524	

Dot & Bar (Valley Title), San Jose, CA

PM2.5 Fugitive Dust Construction Emissions for Modeling

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2023	Construction	CON_FUG	0.0904	180.8	0.03995	5.03E-03	11583.6	4.35E-07
2024	Construction	CON_FUG	0.0249	49.7	0.01099	1.38E-03	11583.6	1.20E-07
2025	Construction	CON_FUG	0.0042	8.5	0.00188	2.37E-04	11583.6	2.04E-08
2026	Construction	CON_FUG	0.0024	4.7	0.00104	1.32E-04	11583.6	1.14E-08
Total			***0.1218***	***243.7***	***0.0539***	***0.0068***		

Emissions assumed to be evenly distributed over each construction areas

hr/day =	14.5	(7am - 10pm M-F, 7am-7pm Sat)
days/yr =	312	
hours/year =	4524	

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Emissions per Point Source (g/s)
2023	Construction	0.0059	Point	234	11.9	0.00262	3.30E-04	1.41E-06
2023	Construction	0.0077	Point	234	15.4	0.00341	4.29E-04	1.83E-06
2024	Construction	0.0111	Point	234	22.2	0.00490	6.18E-04	2.64E-06
2026	Construction	0.0045	Point	234	8.9	0.00197	2.48E-04	1.06E-06
Total		***0.0292***			***58.4***	***0.0129***	***0.0016***	

Emissions assumed to be evenly distributed over each construction areas

hr/day =	14.5	(7am - 10pm M-F, 7am-7pm Sat)
days/yr =	312	
hours/year =	4524	

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

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2023	Construction	CON_FUG	0.0202	40.4	0.00892	1.12E-03	11583.6	9.70E-08
2023	Construction	CON_FUG	0.0083	16.5	0.00366	4.61E-04	11583.6	3.98E-08
2024	Construction	CON_FUG	0.0042	8.5	0.00188	2.37E-04	11583.6	2.04E-08
2026	Construction	CON_FUG	0.0024	4.7	0.00104	1.32E-04	11583.6	1.14E-08
Total			***0.0351***	***70.1***	***0.0155***	***0.0020***		

Emissions assumed to be evenly distributed over each construction areas

hr/day =	14.5	(7am - 10pm M-F, 7am-7pm Sat)
days/yr =	312	
hours/year =	4524	

Dot & Bar (Valley Title), San Jose, CA - Construction Health Impact Summary

Maximum Impacts at MEI Locattion - YWCA Childcare Center - Without Mitigatio

Construction Year	Unmitigated Emissions				
	Maximum Concentrations				
	Exhaust PM2.5/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Child Cancer Risk (per million)	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2023	0.0562	0.7799	*	0.01	0.84
2024	0.1036	0.2151	32.25	0.02	0.32
2025	0.1572	0.0366	48.94	0.03	0.19
2026	0.0304	0.0204	1.23	0.01	0.05
Total	-	-	**82.42**	-	-
Maximum	0.1572	0.7799	**-**	**0.03**	**0.84**

* Maximum cancer risk occurs when exposure begins in 2024.

Maximum Impacts at MEI Locattion - YWCA Childcare Center - With Mitigation

Construction Year	Unmitigated Emissions				
	Maximum Concentrations				
	Exhaust PM2.5/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Child Cancer Risk (per million)	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2023	0.0079	0.0848	*	0.002	0.09
2024	0.0103	0.0348	3.21	0.002	0.05
2025	0.0148	0.0176	4.61	0.003	0.03
2026	0.0060	0.0100	0.24	0.001	0.02
Total	-	-	**8.06**	-	-
Maximum	0.0148	0.0848	**-**	**0.003**	**0.09**

- Tier 4 Final Engine, Electric Cranes and Generators, and Enhanced BMPs Mitigation

* Maximum cancer risk occurs when exposure begins in 2024.

Maximum Impacts at 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 ($\mu g/m^3$)
2023	0.0416	0.2389	*	*	0.01	0.28
2024	0.0767	0.0659	13.64	0.22	0.02	0.14
2025	0.1163	0.0112	19.11	0.33	0.02	0.13
2026	0.0225	0.0063	0.58	0.06	0.00	0.03
Total	-	-	**33.32**	**0.62**	-	-
Maximum	0.1163	0.2389	**-**	**-**	**0.02**	**0.28**

* Maximum cancer risk occurs when exposure begins in 2024.

Maximum Impacts at 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 ($\mu g/m^3$)
2023	0.0068	0.0413	*	*	0.001	0.05
2024	0.0089	0.0169	1.58	0.03	0.002	0.03
2025	0.0128	0.0087	2.10	0.04	0.003	0.02
2026	0.0051	0.0049	0.13	0.01	0.001	0.01
Total	-	-	**3.81**	**0.08**	-	-
Maximum	0.0128	0.0413	**-**	**-**	**0.003**	**0.05**

- Tier 4 Final Engine, Electric Cranes and Generators, and Enhanced BMPs Mitigation

* Maximum cancer risk occurs when exposure begins in 2024.

Dot & Bar (Valley Title), San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at YWCA Childcare Center (0-6 years old) - 1 meter - Infant/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/14.5 hrs) x (7 days/6 days) x (10/8) = 2.41
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 =	2.41	2.41	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	0 - 1	2023	0.0562	--	--
2	1	1 - 2	2024	0.1036	10	32.25
3	1	2 - 3	2025	0.1572	10	48.94
4	1	3 - 4	2026	0.0304	3	1.23
5	1	4 - 5		0.0000	3	0.00
6	1	5 - 6		0.0000	3	0.00
7	1			0.0000	3	0.00
8	1			0.0000	3	0.00
9	1			0.0000	3	0.00
Total Increased Cancer Risk						**82.42**

Maximum		
Hazard Index	**Fugitive PM2.5**	**Total PM2.5**
0.01	0.78	0.84
0.02	0.22	0.32
0.03	0.04	0.19
0.01	0.02	0.05

* Children assumed to be 0-6 years of age or older with 4 years of Construction Exposure

Dot & Bar (Valley Title), San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Maximum Impacts at Off-Site 1st Floor Residential 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*	2023	0.0964	10	1.31	2023	0.0523	-	-			
1	1	0 - 1	2023	0.0523	-	-	2023	0.0523	-	-	0.01	0.36	0.41
2	1	1 - 2	2024	0.0964	10	15.84	2024	0.0964	1	0.28	0.02	0.10	0.20
3	1	2 - 3	2025	0.1463	10	24.03	2025	0.1463	1	0.42	0.03	0.02	0.16
4	1	3 - 4	2026	0.0283	3	0.73	2026	0.0283	1	0.08	0.01	0.01	0.04
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						**41.90**				**0.78**			

* Third trimester of pregnancy

Dot & Bar (Valley Title), San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Maximum Impacts at Off-Site 2nd Floor Residential 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			Infant/Child	Adult - Exposure Information			Adult	Maximum		
			DPM Conc (ug/m3)		Age	Cancer	Modeled DPM Conc (ug/m3)		Age	Cancer			
Exposure Year	Exposure Duration (years)	Age	Year	Annual	Sensitivity Factor	Risk (per million)	Year	Annual	Sensitivity Factor	Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2023	0.0767	10	1.04	2023	0.0416	-	-			
1	1	0 - 1	2023	0.0416	-	-	2023	0.0416	-	-	0.0083	0.2389	0.2805
2	1	1 - 2	2024	0.0767	10	12.59	2024	0.0767	1	0.22	0.0153	0.0659	0.1426
3	1	2 - 3	2025	0.1163	10	19.11	2025	0.1163	1	0.33	0.0233	0.0112	0.1275
4	1	3 - 4	2026	0.0225	3	0.58	2026	0.0225	1	0.06	0.0045	0.0063	0.0287
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						**33.32**				**0.62**			

* Third trimester of pregnancy

Dot & Bar (Valley Title), San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Norte Dame High School (14 years and older) - 1.5 meters - 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/14.5 hrs) x (7 days/6 days) x (10/8) = 2.41
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	2.41	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	14 - 15	2023	0.0285	3	1.15
2	1	15 - 16	2024	0.0525	3	2.12
3	1	16 - 17	2025	0.0796	3	3.22
4	1	17 - 18	2026	0.0154	3	0.62
5	1			0.0000	3	0.00
6	1			0.0000	3	0.00
7	1			0.0000	3	0.00
8	1			0.0000	3	0.00
9	1			0.0000	3	0.00
Total Increased Cancer Risk						**7.12**

Maximum		
Hazard Index	Fugitive PM2.5	Total PM2.5
0.01	0.13	0.16
0.01	0.04	0.09
0.02	0.01	0.09
0.003	0.004	0.02

* Children assumed to be 14 years of age or older with 4 years of Construction Exposure

Dot & Bar (Valley Title), San Jose, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at YWCA Childcare Center (0-6 years old) - 1 meter - Infant/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/14.5 hrs) x (7 days/6 days) x (10/8) = 2.41
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 =	2.41	2.41	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	0 - 1	2023	0.0079	--	--
2	1	1 - 2	2024	0.0103	10	3.21
3	1	2 - 3	2025	0.0148	10	4.61
4	1	3 - 4	2026	0.0060	3	0.24
5	1	4 - 5		0.0000	3	0.00
6	1	5 - 6		0.0000	3	0.00
7	1			0.0000	3	0.00
8	1			0.0000	3	0.00
9	1			0.0000	3	0.00
Total Increased Cancer Risk						**8.06**

Maximum		
Hazard Index	**Fugitive PM2.5**	**Total PM2.5**
0.00	0.08	0.09
0.00	0.03	0.05
0.00	0.02	0.03
0.00	0.01	0.02

* Children assumed to be 0-6 years of age or older with 4 years of Construction Exposure

Dot & Bar (Valley Title), San Jose, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Maximum Impacts at Off-Site 1st Floor Residential 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*	2023	0.0089	10	0.12	2023	0.0068	-	-			
1	1	0 - 1	2023	0.0068	-	-	2023	0.0068	-	-	0.0014	0.0413	0.0481
2	1	1 - 2	2024	0.0089	10	1.46	2024	0.0089	1	0.03	0.0018	0.0169	0.0258
3	1	2 - 3	2025	0.0128	10	2.10	2025	0.0128	1	0.04	0.0026	0.0087	0.0214
4	1	3 - 4	2026	0.0051	3	0.13	2026	0.0051	1	0.01	0.0010	0.0049	0.0100
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						**3.81**				**0.08**			

* Third trimester of pregnancy

CT-EMFAC2017 Emissions Factors for Project Traffic - Santa Clara County 2027

File Name:	Project Traffic - Santa Clara (SF) - 2027 - Annual.EF
CT-EMFAC2017 Version:	1.0.2.27401
Run Date:	10/28/2021 16:37
Area:	Santa Clara (SF)
Analysis Year:	2027
Season:	Annual

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.014	0.513	0.487
Truck 2	0.021	0.934	0.05
Non-Truck	0.965	0.015	0.947

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
PM2.5	0.007689	0.004985	0.003381	0.002418	0.001835	0.001483
TOG	0.156497	0.10271	0.069024	0.048886	0.037067	0.029657
Diesel PM	0.000674	0.000567	0.000446	0.000362	0.000316	0.000299

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

Pollutant Name	Emission Factor
TOG	1.164145

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

Pollutant Name	Emission Factor
PM2.5	0.002113

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

Pollutant Name	Emission Factor
PM2.5	0.016799

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

Pollutant Name	Emission Factor
PM2.5	0.014902

END

Project Traffic on S. 2nd and E. San Salvador Streets Traffic Emissions and Health Risk Calculations

Dot & Bar (Valley Title), San Jose - Offsite Residential Roadway Modeling
Project Operation - S. 2nd Street
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2027

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
DPM_2nd	S. 2nd Street	SB	2	191.4	0.12	13.3	43.7	3.4	20	5,354	2,549	27,432	1.047E-09	7.718E-10	6.8	3.16

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.00036			

Emisson Factors from CT-EMFAC2017

2027 Hourly Traffic Volumes and DPM Emissions - DPM_2nd

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.95%	211	2.53E-06	9	6.40%	343	4.10E-06	17	5.61%	300	3.59E-06
2	2.66%	142	1.70E-06	10	7.41%	397	4.74E-06	18	3.24%	173	2.07E-06
3	2.88%	154	1.84E-06	11	6.34%	339	4.06E-06	19	2.21%	118	1.41E-06
4	3.28%	176	2.10E-06	12	6.96%	373	4.46E-06	20	0.86%	46	5.51E-07
5	2.15%	115	1.38E-06	13	6.22%	333	3.98E-06	21	3.06%	164	1.96E-06
6	3.28%	176	2.10E-06	14	6.17%	330	3.95E-06	22	4.19%	224	2.68E-06
7	6.06%	324	3.88E-06	15	5.16%	276	3.30E-06	23	2.61%	140	1.67E-06
8	4.54%	243	2.91E-06	16	3.92%	210	2.51E-06	24	0.85%	46	5.44E-07
								Total		5,354	

Dot & Bar (Valley Title), San Jose - Offsite Residential Roadway Modeling
Project Operation - S. 2nd Street
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2027

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
PM25_2nd	S. 2nd Street	SB	2	191.4	0.12	13.3	44	1.3	20	5,354	2,549	27,432	6.992E-09	5.155E-09	2.6	1.21

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.002418			

Emisson Factors from CT-EMFAC2017

2027 Hourly Traffic Volumes and PM2.5 Emissions - PM25_2nd

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	62	4.92E-06	9	7.11%	381	3.04E-05	17	7.39%	396	3.16E-05
2	0.42%	22	1.80E-06	10	4.39%	235	1.88E-05	18	8.18%	438	3.50E-05
3	0.40%	21	1.71E-06	11	4.66%	249	1.99E-05	19	5.69%	305	2.43E-05
4	0.26%	14	1.11E-06	12	5.89%	315	2.52E-05	20	4.27%	229	1.83E-05
5	0.49%	26	2.10E-06	13	6.15%	329	2.63E-05	21	3.26%	175	1.39E-05
6	0.90%	48	3.85E-06	14	6.04%	323	2.58E-05	22	3.30%	177	1.41E-05
7	3.79%	203	1.62E-05	15	7.01%	375	3.00E-05	23	2.46%	132	1.05E-05
8	7.76%	415	3.32E-05	16	7.14%	382	3.05E-05	24	1.87%	100	8.00E-06
								Total		5,352	

Dot & Bar (Valley Title), San Jose - Offsite Residential Roadway Modeling
Project Operation - S. 2nd Street
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2027

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEXH_2nd	S. 2nd Street	SB	2	191.4	0.12	13.3	44	1.3	20	5,354	2,549	27,432	1.414E-07	1.042E-07	2.6	1.21

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.04889			

Emisson Factors from CT-EMFAC2017

2027 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_2nd

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	62	9.94E-05	9	7.11%	381	6.15E-04	17	7.39%	396	6.39E-04
2	0.42%	22	3.63E-05	10	4.39%	235	3.80E-04	18	8.18%	438	7.07E-04
3	0.40%	21	3.46E-05	11	4.66%	249	4.03E-04	19	5.69%	305	4.92E-04
4	0.26%	14	2.25E-05	12	5.89%	315	5.09E-04	20	4.27%	229	3.69E-04
5	0.49%	26	4.24E-05	13	6.15%	329	5.32E-04	21	3.26%	175	2.82E-04
6	0.90%	48	7.78E-05	14	6.04%	323	5.22E-04	22	3.30%	177	2.85E-04
7	3.79%	203	3.28E-04	15	7.01%	375	6.06E-04	23	2.46%	132	2.13E-04
8	7.76%	415	6.71E-04	16	7.14%	382	6.17E-04	24	1.87%	100	1.62E-04
								Total		5,352	

Dot & Bar (Valley Title), San Jose - Offsite Residential Roadway Modeling
Project Operation - S. 2nd Street
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2027

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEVAP_2nd	S. 2nd Street	SB	2	191.4	0.12	13.3	44	1.3	20	5,354	2,549	27,432	1.683E-07	1.241E-07	2.6	1.21

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle per Hour (g/hour)	1.16415			
Emissions per Vehicle per Mile (g/VMT)	0.05821			

Emisson Factors from CT-EMFAC2017

2027 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_2nd

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	62	1.18E-04	9	7.11%	381	7.32E-04	17	7.39%	396	7.61E-04
2	0.42%	22	4.32E-05	10	4.39%	235	4.52E-04	18	8.18%	438	8.42E-04
3	0.40%	21	4.12E-05	11	4.66%	249	4.80E-04	19	5.69%	305	5.86E-04
4	0.26%	14	2.68E-05	12	5.89%	315	6.06E-04	20	4.27%	229	4.40E-04
5	0.49%	26	5.04E-05	13	6.15%	329	6.33E-04	21	3.26%	175	3.36E-04
6	0.90%	48	9.27E-05	14	6.04%	323	6.22E-04	22	3.30%	177	3.40E-04
7	3.79%	203	3.90E-04	15	7.01%	375	7.22E-04	23	2.46%	132	2.53E-04
8	7.76%	415	7.99E-04	16	7.14%	382	7.35E-04	24	1.87%	100	1.93E-04
								Total		5,352	

Dot & Bar (Valley Title), San Jose - Offsite Residential Roadway Modeling
Project Operation - S. 2nd Street
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2027

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
FUG_2nd	S. 2nd Street	SB	2	191.4	0.12	13.3	44	1.3	20	5,354	2,549	27,432	9.777E-08	7.209E-08	2.6	1.21

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01680			
Road Dust - Emissions per Vehicle (g/VMT)	0.01490			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03381			

Emisson Factors from CT-EMFAC2017

2027 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_2nd

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	62	6.88E-05	9	7.11%	381	4.25E-04	17	7.39%	396	4.42E-04
2	0.42%	22	2.51E-05	10	4.39%	235	2.63E-04	18	8.18%	438	4.89E-04
3	0.40%	21	2.39E-05	11	4.66%	249	2.79E-04	19	5.69%	305	3.40E-04
4	0.26%	14	1.55E-05	12	5.89%	315	3.52E-04	20	4.27%	229	2.55E-04
5	0.49%	26	2.93E-05	13	6.15%	329	3.68E-04	21	3.26%	175	1.95E-04
6	0.90%	48	5.38E-05	14	6.04%	323	3.61E-04	22	3.30%	177	1.97E-04
7	3.79%	203	2.27E-04	15	7.01%	375	4.19E-04	23	2.46%	132	1.47E-04
8	7.76%	415	4.64E-04	16	7.14%	382	4.27E-04	24	1.87%	100	1.12E-04
								Total		5,352	

Dot & Bar (Valley Title), San Jose - Offsite Residential Roadway Modeling
Project Operation - E. San Salvador Street
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2027

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
DPM_SAL	E. San Salvador Street	SB	2	112.9	0.07	13.3	43.7	3.4	20	5,354	1,503	16,181	1.047E-09	7.718E-10	6.8	3.16

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.00036			

Emisson Factors from CT-EMFAC2017

2027 Hourly Traffic Volumes and DPM Emissions - DPM_SAL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.95%	211	1.49E-06	9	6.40%	343	2.42E-06	17	5.61%	300	2.12E-06
2	2.66%	142	1.00E-06	10	7.41%	397	2.80E-06	18	3.24%	173	1.22E-06
3	2.88%	154	1.09E-06	11	6.34%	339	2.39E-06	19	2.21%	118	8.35E-07
4	3.28%	176	1.24E-06	12	6.96%	373	2.63E-06	20	0.86%	46	3.25E-07
5	2.15%	115	8.12E-07	13	6.22%	333	2.35E-06	21	3.06%	164	1.16E-06
6	3.28%	176	1.24E-06	14	6.17%	330	2.33E-06	22	4.19%	224	1.58E-06
7	6.06%	324	2.29E-06	15	5.16%	276	1.95E-06	23	2.61%	140	9.86E-07
8	4.54%	243	1.71E-06	16	3.92%	210	1.48E-06	24	0.85%	46	3.21E-07
								Total		5,354	

Dot & Bar (Valley Title), San Jose - Offsite Residential Roadway Modeling
Project Operation - E. San Salvador Street
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2027

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
PM25_SAL	E. San Salvador Street	SB	2	112.9	0.07	13.3	44	1.3	20	5,354	1,503	16,181	6.992E-09	5.155E-09	2.6	1.21

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.002418			

Emisson Factors from CT-EMFAC2017

2027 Hourly Traffic Volumes and PM2.5 Emissions - PM25_SAL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	62	2.90E-06	9	7.11%	381	1.79E-05	17	7.39%	396	1.86E-05
2	0.42%	22	1.06E-06	10	4.39%	235	1.11E-05	18	8.18%	438	2.06E-05
3	0.40%	21	1.01E-06	11	4.66%	249	1.18E-05	19	5.69%	305	1.44E-05
4	0.26%	14	6.56E-07	12	5.89%	315	1.49E-05	20	4.27%	229	1.08E-05
5	0.49%	26	1.24E-06	13	6.15%	329	1.55E-05	21	3.26%	175	8.22E-06
6	0.90%	48	2.27E-06	14	6.04%	323	1.52E-05	22	3.30%	177	8.32E-06
7	3.79%	203	9.56E-06	15	7.01%	375	1.77E-05	23	2.46%	132	6.21E-06
8	7.76%	415	1.96E-05	16	7.14%	382	1.80E-05	24	1.87%	100	4.72E-06
								Total		5,352	

Dot & Bar (Valley Title), San Jose - Offsite Residential Roadway Modeling
Project Operation - E. San Salvador Street
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2027

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEXH_SAL	E. San Salvador Street	SB	2	112.9	0.07	13.3	44	1.3	20	5,354	1,503	16,181	1.414E-07	1.042E-07	2.6	1.21

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.04889			

Emisson Factors from CT-EMFAC2017

2027 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_SAL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	62	5.86E-05	9	7.11%	381	3.63E-04	17	7.39%	396	3.77E-04
2	0.42%	22	2.14E-05	10	4.39%	235	2.24E-04	18	8.18%	438	4.17E-04
3	0.40%	21	2.04E-05	11	4.66%	249	2.38E-04	19	5.69%	305	2.90E-04
4	0.26%	14	1.33E-05	12	5.89%	315	3.00E-04	20	4.27%	229	2.18E-04
5	0.49%	26	2.50E-05	13	6.15%	329	3.14E-04	21	3.26%	175	1.66E-04
6	0.90%	48	4.59E-05	14	6.04%	323	3.08E-04	22	3.30%	177	1.68E-04
7	3.79%	203	1.93E-04	15	7.01%	375	3.58E-04	23	2.46%	132	1.25E-04
8	7.76%	415	3.96E-04	16	7.14%	382	3.64E-04	24	1.87%	100	9.54E-05
								Total		5,352	

Dot & Bar (Valley Title), San Jose - Offsite Residential Roadway Modeling
Project Operation - E. San Salvador Street
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2027

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEVAP_SAL	E. San Salvador Street	SB	2	112.9	0.07	13.3	44	1.3	20	5,354	1,503	16,181	1.683E-07	1.241E-07	2.6	1.21

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle per Hour (g/hour)	1.16415			
Emissions per Vehicle per Mile (g/VMT)	0.05821			

Emisson Factors from CT-EMFAC2017

2027 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_SAL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	62	6.98E-05	9	7.11%	381	4.32E-04	17	7.39%	396	4.49E-04
2	0.42%	22	2.55E-05	10	4.39%	235	2.67E-04	18	8.18%	438	4.97E-04
3	0.40%	21	2.43E-05	11	4.66%	249	2.83E-04	19	5.69%	305	3.46E-04
4	0.26%	14	1.58E-05	12	5.89%	315	3.58E-04	20	4.27%	229	2.59E-04
5	0.49%	26	2.98E-05	13	6.15%	329	3.73E-04	21	3.26%	175	1.98E-04
6	0.90%	48	5.47E-05	14	6.04%	323	3.67E-04	22	3.30%	177	2.00E-04
7	3.79%	203	2.30E-04	15	7.01%	375	4.26E-04	23	2.46%	132	1.49E-04
8	7.76%	415	4.71E-04	16	7.14%	382	4.34E-04	24	1.87%	100	1.14E-04
								Total		5,352	

Dot & Bar (Valley Title), San Jose - Offsite Residential Roadway Modeling
Project Operation - E. San Salvador Street
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2027

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
FUG_SAL	E. San Salvador Street	SB	2	112.9	0.07	13.3	44	1.3	20	5,354	1,503	16,181	9.777E-08	7.209E-08	2.6	1.21

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01680			
Road Dust - Emissions per Vehicle (g/VMT)	0.01490			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03381			

Emisson Factors from CT-EMFAC2017

2027 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_SAL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	62	4.06E-05	9	7.11%	381	2.51E-04	17	7.39%	396	2.61E-04
2	0.42%	22	1.48E-05	10	4.39%	235	1.55E-04	18	8.18%	438	2.89E-04
3	0.40%	21	1.41E-05	11	4.66%	249	1.64E-04	19	5.69%	305	2.01E-04
4	0.26%	14	9.17E-06	12	5.89%	315	2.08E-04	20	4.27%	229	1.51E-04
5	0.49%	26	1.73E-05	13	6.15%	329	2.17E-04	21	3.26%	175	1.15E-04
6	0.90%	48	3.17E-05	14	6.04%	323	2.13E-04	22	3.30%	177	1.16E-04
7	3.79%	203	1.34E-04	15	7.01%	375	2.47E-04	23	2.46%	132	8.68E-05
8	7.76%	415	2.74E-04	16	7.14%	382	2.52E-04	24	1.87%	100	6.60E-05
								Total		5,352	

Dot & Bar (Valley Title), San Jose, CA - S 2nd Street and E. San Salvador Street Project Traffic - TACs & PM2.5
Maximum Cancer Risk and PM2.5 Concentration
AERMOD Risk Modeling Parameters and Maximum Concentrations
Impacts at YWCA Childcare Center (0-6 years old), 3-Year Child Exposure - 1 meter

Emissions Years	2027
Receptor Information	
Number of Receptors	1
Receptor Height =	1.0 meters
Receptor distances =	at MEI chilcare site

Meteorological Conditions

BAAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

Emission Years	Concentration (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2027	0.00088	0.21055	0.25059

Emission Years	PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2027	0.1560	0.14558	0.0104

Maximum School Child PM2.5 Concentration (µg/m^3)* =	**0.04**

* Concentration adjusted for exposure duration at school

Dot & Bar (Valley Title), San Jose, CA - S 2nd Street and E. San Salvador Street Project Traffic Cancer Risk
Maximum MEI and Child Cancer Risk
Child Exposures (1.0 meter receptor heights)
Impacts at YWCA Childcare Center (0-6 years old), 3-Year Child Exposure - 1 meter

Cancer Risk Calculation Method

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 8hr BR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
SAF = School Adjustment Factor (unitless) for source operation and exposures different than 8 hours/day
= (24/SHR) x (7days/SDay) x (ScHR/8 hrs)
SHR = Hours of emission source operation
SDay = Modeled number of days per week of source operaion
ScHR = School operation hours while emission source in operation
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
10^{-6} = Conversion factor

Values

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

	Infant	Child
Age -->	0 - <2	2 - <16
Parameter		
ASF	10	3
8-Hr BR* =	1200	520
ScHR** =	10.00	10.00
SHR =	24	24
SDay =	7	7
A =	1	1
EF =	250	250
AT =	70	70
SAF =	1.25	1.25

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

** ScHR based on 10 hours school day

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Year	Exposure Duration (years)	Age	Maximum - Exposure Information: Age Sensitivity Factor	Annual TAC Conc (ug/m3): DPM	Exhaust TOG	Evaporative TOG	Cancer Risk (per million): DPM	Exhaust TOG	Evaporative TOG	Total	Hazard Index
1	2024	1	0 - 1	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002
2	2025	1	1 - 2	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
3	2026	1	2 - 3	3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
4	2027	1	3 - 4	3	0.0009	0.2106	0.2506	0.0185	0.0252	0.0018	0.0455	
5	2028	1	4 - 5	3	0.0009	0.2106	0.2506	0.0185	0.0252	0.0018	0.0455	
6	2029	1	5 - 6	3	0.0009	0.2106	0.2506	0.0185	0.0252	0.0018	0.0455	
Total Increased Cancer Risk								0.1833	0.2504	0.0176	**0.14**	

Dot & Bar (Valley Title), San Jose, CA - S. 2nd Street and E. San Salvador Street Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations - Project Traffic
at MAX Residential Receptors (1.5 m receptor heights)

Emission Year	2027
Receptor Information	Max residential receptor
Number of Receptors	1
Receptor Height	1.5 meters
Receptor Distances	At Max residential location
Meteorological Conditions	
BAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Maximum Residential Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.00029	0.05396	0.06422

Maximum Residential PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.03998	0.03731	0.00267

Dot & Bar (Valley Title), San Jose, CA - S. 2nd Street and E. San Salvador Street Cancer Risk & PM2.5
Impacts at MAX Residential- 1.5 meter receptor height (1st floor)
27 Year Residential Exposure - Project Traffic

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	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00
1	1	0 - 1	2024	10	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00
2	1	1 - 2	2025	10	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00
3	1	2 - 3	2026	3	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.00
4	1	3 - 4	2027	3	0.0003	0.0540	0.0642	0.007	0.008	0.0006	0.02
5	1	4 - 5	2028	3	0.0003	0.0540	0.0642	0.007	0.008	0.0006	0.02
6	1	5 - 6	2029	3	0.0003	0.0540	0.0642	0.007	0.008	0.0006	0.02
7	1	6 - 7	2030	3	0.0003	0.0540	0.0642	0.007	0.008	0.0006	0.02
8	1	7 - 8	2031	3	0.0003	0.0540	0.0642	0.007	0.008	0.0006	0.02
9	1	8 - 9	2032	3	0.0003	0.0540	0.0642	0.007	0.008	0.0006	0.02
10	1	9 - 10	2033	3	0.0003	0.0540	0.0642	0.007	0.008	0.0006	0.02
11	1	10 - 11	2034	3	0.0003	0.0540	0.0642	0.007	0.008	0.0006	0.02
12	1	11 - 12	2035	3	0.0003	0.0540	0.0642	0.007	0.008	0.0006	0.02
13	1	12 - 13	2036	3	0.0003	0.0540	0.0642	0.007	0.008	0.0006	0.02
14	1	13 - 14	2037	3	0.0003	0.0540	0.0642	0.007	0.008	0.0006	0.02
15	1	14 - 15	2038	3	0.0003	0.0540	0.0642	0.007	0.008	0.0006	0.02
16	1	15 - 16	2039	3	0.0003	0.0540	0.0642	0.007	0.008	0.0006	0.02
17	1	16-17	2040	1	0.0003	0.0540	0.0642	0.001	0.001	0.0001	0.00
18	1	17-18	2041	1	0.0003	0.0540	0.0642	0.001	0.001	0.0001	0.00
19	1	18-19	2042	1	0.0003	0.0540	0.0642	0.001	0.001	0.0001	0.00
20	1	19-20	2043	1	0.0003	0.0540	0.0642	0.001	0.001	0.0001	0.00
21	1	20-21	2044	1	0.0003	0.0540	0.0642	0.001	0.001	0.0001	0.00
22	1	21-22	2045	1	0.0003	0.0540	0.0642	0.001	0.001	0.0001	0.00
23	1	22-23	2046	1	0.0003	0.0540	0.0642	0.001	0.001	0.0001	0.00
24	1	23-24	2047	1	0.0003	0.0540	0.0642	0.001	0.001	0.0001	0.00
25	1	24-25	2048	1	0.0003	0.0540	0.0642	0.001	0.001	0.0001	0.00
26	1	25-26	2049	1	0.0003	0.0540	0.0642	0.001	0.001	0.0001	0.00
27	1	26-27	2050	1	0.0003	0.0540	0.0642	0.001	0.001	0.0001	0.00
28	1	27-28	2051	1	0.0003	0.0540	0.0642	0.001	0.001	0.0001	0.00
29	1	28-29	2052	1	0.0003	0.0540	0.0642	0.001	0.001	0.0001	0.00
30	1	29-30	2053	1	0.0003	0.0540	0.0642	0.001	0.001	0.0001	0.00
Total Increased Cancer Risk								0.11	0.116	0.008	**0.23**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0001	0.04	0.04

* Third trimester of pregnancy

Dot & Bar (Valley Title), San Jose, CA - S 2nd Street and E. San Salvador Street Project Traffic - TACs & PM2.5
Maximum Cancer Risk and PM2.5 Concentration
AERMOD Risk Modeling Parameters and Maximum Concentrations
Impacts at Norte Dame High School (14 years and older), 1-Year Child Exposure - 1.5 meter

Emissions Years	2027
Receptor Information	
Number of Receptors	46
Receptor Height =	1.5 meters
Receptor distances =	at high school site

Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

Emission Years	Concentration (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2027	0.00010	0.01857	0.02211

Emission Years	PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2027	0.0138	0.01286	0.0009

Maximum School Child PM2.5 Concentration (µg/m^3)* =	**0.004**

* Concentration adjusted for exposure duration at school

Dot & Bar (Valley Title), San Jose, CA - S 2nd Street and E. San Salvador Street Project Traffic Cancer Risk
Maximum Child Cancer Risk
Child Exposures (1.5 meter receptor heights)
Impacts at Norte Dame High School (14 years and older), 1-Year Child Exposure - 1.5 meter

Cancer Risk Calculation Method

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 8hr BR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
SAF = School Adjustment Factor (unitless) for source operation and exposures different than 8 hours/day
= (24/SHR) x (7days/SDay) x (ScHR/8 hrs)
SHR = Hours of emission source operation
SDay = Modeled number of days per week of source operaion
ScHR = School operation hours while emission source in operation
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
10^{-6} = Conversion factor

Values

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

	Infant	Child
Age -->	0 - <2	2 - <16
Parameter		
ASF	10	3
8-Hr BR* =	1200	520
ScHR** =	10.00	10.00
SHR =	24	24
SDay =	7	7
A =	1	1
EF =	250	250
AT =	70	70
SAF =	1.25	1.25

* 95th percentile 8-hr breathing rates for moderate intensity activities
** ScHR based on 10 hours school day

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Year	Exposure Duration (years)	Age	Maximum - Exposure Information: Age Sensitivity Factor	Annual TAC Conc (ug/m3): DPM	Exhaust TOG	Evaporative TOG	Cancer Risk (per million): DPM	Exhaust TOG	Evaporative TOG	Total	Hazard Index
1	2024	1	14 - 15	3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00002
2	2025	1	15 - 16	3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
3	2026	1	16 - 17	3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
4	2027	1	17 - 18	3	0.0001	0.0186	0.0221	0.0021	0.0022	0.0002	0.0045	
Total Increased Cancer Risk								0.0021	0.0022	0.0002	**0.004**	

Project Generators Health Risk Assessment and Calculations

Dot & Bar (Valley Title), San Jose, CA

Standby Emergency Generator Impacts - w/ BAAQMD BACT Requirements for engines >1,000-hp
Off-site Sensitive Receptors
MEI Location = 6.1 meter receptor height

DPM Emission Rates		
	DPM Emissions per Generator	
	Max Daily	Annual
Source Type	(lb/day)	(lb/year)
Two, 2,500-kW, 3,674-hp Generator BACT Requirements	0.032	11.82
CalEEMod DPM Emissions	5.91E-03	tons/year

Modeling Information		
Model	AERMOD	
Source	Diesel Generator Engine	
Source Type	Point	
Meteorological Data	2013-2017 San Jose Airport Meterological Data	
Point Source Stack Parameters		
Generator Engine Size (hp)***	3674	
Stack Height (ft) ***	27.50	1st Level Exhaust Release
Stack Diameter (ft)**	0.60	
Exhaust Gas Flowrate (CFM)***	21189	
Stack Exit Velocity (ft/sec)***	1249	
Exhaust Temperature (˚F)***	959	
Emissions Rate (lb/hr)	0.0013	0.0007 Each Gen

* AERMOD default

**BAAQMD default generator parameters

*** Generator Spec Sheet

Dot & Bar (Valley Title), San Jose, CA - Project Generator Impacts
Maximum DPM Cancer Risk and PM2.5 Calculations
Impacts at YWCA Childcare Center (0-6 years old), 3-Year Child Exposure - 1 meter

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/24 hrs) x (7 days/7 days) x (10/8) = 1.25
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 =	1.25	1.25	1.00

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

Project Generators Operation 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	0 - 1	2024	0.00000	10	0.000
2	1	1 - 2	2025	0.00000	10	0.000
3	1	2 - 3	2026	0.00000	3	0.000
4	1	3 - 4	2027	0.00003	3	0.001
5	1	4 - 5	2028	0.00003	3	0.001
6	1	5 - 6	2029	0.00003	3	0.001
7	1			0.0000	3	0.000
8	1			0.0000	3	0.000
9	1			0.0000	3	0.000
Total Increased Cancer Risk						**0.002**

Maximum	
Hazard Index	**Total PM2.5**
0.00001	0.00003

* Children assumed to be 0-6 years of age or older with 3 years of Exposure

Dot & Bar (Valley Title), San Jose - Cancer Risks from Project Operation
Project Emergency Generator
Impacts at MAX Off-Site Residential Receptors- 1.5m
Impact at Off-Site MEI (27-year Exposure)

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

	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

Project Generators Operation Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information: DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Cancer Risk (per million)	Hazard Index	Total PM2.5
0	0.25	-0.25 - 0*	2024	0.00000	10	0.000		
1	1	0 - 1	2024	0.00000	10	0.000		
2	1	1 - 2	2025	0.00000	10	0.000		
3	1	2 - 3	2026	0.00000	3	0.000		
4	1	3 - 4	2027	0.00037	3	0.010	0.0001	0.0004
5	1	4 - 5	2028	0.00037	3	0.010		
6	1	5 - 6	2029	0.00037	3	0.010		
7	1	6 - 7	2030	0.00037	3	0.010		
8	1	7 - 8	2031	0.00037	3	0.010		
9	1	8 - 9	2032	0.00037	3	0.010		
10	1	9 - 10	2033	0.00037	3	0.010		
11	1	10 - 11	2034	0.00037	3	0.010		
12	1	11 - 12	2035	0.00037	3	0.010		
13	1	12 - 13	2036	0.00037	3	0.010		
14	1	13 - 14	2037	0.00037	3	0.010		
15	1	14 - 15	2038	0.00037	3	0.010		
16	1	15 - 16	2039	0.00037	3	0.010		
17	1	16-17	2040	0.00037	1	0.001		
18	1	17-18	2041	0.00037	1	0.001		
19	1	18-19	2042	0.00037	1	0.001		
20	1	19-20	2043	0.00037	1	0.001		
21	1	20-21	2044	0.00037	1	0.001		
22	1	21-22	2045	0.00037	1	0.001		
23	1	22-23	2046	0.00037	1	0.001		
24	1	23-24	2047	0.00037	1	0.001		
25	1	24-25	2048	0.00037	1	0.001		
26	1	25-26	2049	0.00037	1	0.001		
27	1	26-27	2050	0.00037	1	0.001		
28	1	27-28	2051	0.00037	1	0.001		
29	1	28-29	2052	0.00037	1	0.001		
30	1	29-30	2053	0.00037	1	0.001		
Total Increased Cancer Risk						**0.14**		

* Third trimester of pregnancy

Dot & Bar (Valley Title), San Jose, CA - Project Generator Impacts
Maximum DPM Cancer Risk and PM2.5 Calculations
Impacts at Norte Dame High School (14 years and older), 1-Year Child Exposure - 1.5 meter

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/24 hrs) x (7 days/7 days) x (10/8) = 1.25
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 =	1.25	1.25	1.00

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

Project Generators Operation 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	14 - 15	2024	0.00000	3	0.00
2	1	15 - 16	2025	0.00000	3	0.00
3	1	16 - 17	2026	0.00000	3	0.00
4	1	17 - 18	2027	0.00027	3	0.01
5	1			0.00000	3	0.00
6	1			0.00000	3	0.00
7	1			0.00000	3	0.00
8	1			0.00000	3	0.00
9	1			0.00000	3	0.00
Total Increased Cancer Risk						**0.01**

Maximum	
Hazard Index	**Total PM2.5**
0.0001	0.0003

* Children assumed to be 14 years of age or older with 1 years of exposure

Project Cooling Towers Health Risk Assessment and Calculations

Evaporative Cooling Tower PM Emissions

No. Cooling Tower Cells			3
Total Water Flow Rate (gpm)			3,680
Cooling Tower Circulating Water TDS (ppm)*			1,500
Mist Eliminator Efficiency (%)			0.005
Total Cooling Tower Drift (gpm)			0.18
Particulate Matter Emissions			
	PM	PM10	PM2.5
Fraction of PM**	1.0	0.7	0.42
Hourly (lb/hr)	0.14	0.10	0.06
Daily (lb/day)	3.3	2.3	1.4
Annual lb/yr)	1210	846.9	508.1
Annual (ton/yr)	0.60	0.4	0.3

* Maximum TDS value provided by applicant.
** South Coast AQMD, Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM2.5 Significance Thresholds, Appendix A.

Dot & Bar (Valley Title), San Jose, CA - Project Cooling Tower - PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations - Project Cooling Towers at Childcare MEI and MAX Residential Receptors (1 m and 1.5 m receptor heights)

Emission Year	2027
Receptor Information	Childcare MEI and Max residential receptors
Number of Receptors	2
Receptor Height	1 and 1.5 meters
Receptor Distances	At Childcare MEI and Max residential locations
Meteorological Conditions	
BAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

PM2.5 Maximum Concentrations

Meteorological	PM2.5 Concentration (µg/m3)	
Data Years	Childcare MEI	Max Residential
2013-2017	0.010	0.013

Attachment 5: Cumulative Community Risk from Existing TAC Sources

CT-EMFAC2017 Emissions Factors for Santa Clara County 2023

File Name: Market St - Santa Clara (SF) - 2023 - Annual.EF
CT-EMFAC2017 Version: 1.0.2.27401
Run Date: 10/28/2021 16:35
Area: Santa Clara (SF)
Analysis Year: 2023
Season: Annual

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.015	0.487	0.513
Truck 2	0.02	0.938	0.047
Non-Truck	0.965	0.014	0.958

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	0.009229	0.005981	0.004054	0.002896	0.002194	0.001765	0.001511	0.001375
TOG	0.195764	0.127928	0.086105	0.061055	0.046181	0.036838	0.030861	0.027137
Diesel PM	0.000904	0.000732	0.000563	0.000446	0.000382	0.000353	0.00035	0.00037

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

Pollutant Name	Emission Factor
TOG	1.35761

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	0.016808

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

Pollutant Name	Emission Factor
PM2.5	0.014855

END

S. Market Street Traffic Emissions and Health Risk Calculations

Analysis Year = ***2023***

Vehicle Type	2021 Caltrans Vehicles (veh/day)	2023 Vehicles (veh/day)
Total	**18,145**	**18,508**

Increase From 2021	1.02
Vehicles/Direction	**9,254**
Avg Vehicles/Hour/Direction	386

Traffic Data Year = ***2021***

Project Traffic Data - Background ADT	AADT Total	Total Truck
S. Market Street & San Carlos St	18,145	637
Percent of Total Vehicles		3.51%

Traffic Increase per Year (%) = *1.00%*

Dot & Bar (Valley Title), San Jose - Offsite Residential Roadway Modeling
Cumulative Operation - S. Market Street
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2023

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
DPM_NB_MAR	S. Market Street Northbound	NB	2	754.2	0.47	13.3	43.7	3.4	Varied	9,254	10,042	108,095	1.764E-09	1.301E-09	6.8	3.16
DPM_SB_MAR	S. Market Street Southbound	SB	2	717.3	0.45	13.3	43.7	3.4	Varied	9,254	9,551	102,806	1.764E-09	1.301E-09	6.8	3.16
									Total	18,508						

Emission Factors - DPM

Speed Category	1	2	3	4
Travel Speed (mph)	30	25		
Emissions per Vehicle (g/VMT)	0.00035	0.00038		

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and DPM Emissions - DPM_NB_MAR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.91%	362	1.66E-05	9	6.50%	601	2.99E-05	17	5.58%	516	2.57E-05
2	2.59%	239	1.10E-05	10	7.36%	681	3.13E-05	18	3.28%	303	1.51E-05
3	2.88%	266	1.22E-05	11	6.33%	585	2.69E-05	19	2.36%	218	1.00E-05
4	3.34%	309	1.42E-05	12	6.84%	633	2.91E-05	20	0.92%	85	3.91E-06
5	2.19%	202	9.29E-06	13	6.15%	569	2.62E-05	21	2.99%	277	1.27E-05
6	3.39%	314	1.44E-05	14	6.15%	569	2.62E-05	22	4.14%	383	1.76E-05
7	5.98%	553	2.54E-05	15	5.23%	484	2.23E-05	23	2.47%	229	1.05E-05
8	4.66%	431	2.14E-05	16	3.91%	362	1.66E-05	24	0.86%	80	3.67E-06
								Total		9,254	

2023 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_MAR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.91%	362	1.58E-05	9	6.50%	601	2.84E-05	17	5.58%	516	2.44E-05
2	2.59%	239	1.05E-05	10	7.36%	681	2.98E-05	18	3.28%	303	1.43E-05
3	2.88%	266	1.16E-05	11	6.33%	585	2.56E-05	19	2.36%	218	9.54E-06
4	3.34%	309	1.35E-05	12	6.84%	633	2.77E-05	20	0.92%	85	3.72E-06
5	2.19%	202	8.84E-06	13	6.15%	569	2.49E-05	21	2.99%	277	1.21E-05
6	3.39%	314	1.37E-05	14	6.15%	569	2.49E-05	22	4.14%	383	1.67E-05
7	5.98%	553	2.42E-05	15	5.23%	484	2.12E-05	23	2.47%	229	1.00E-05
8	4.66%	431	2.04E-05	16	3.91%	362	1.58E-05	24	0.86%	80	3.49E-06
								Total		9,254	

Dot & Bar (Valley Title), San Jose - Offsite Residential Roadway Modeling
Cumulative Operation - S. Market Street
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2023

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
PM25_NB_MAR	S. Market Street Northbound	NB	2	754.2	0.47	13.3	44	1.3	Varied	9,254	10,042	108,095	8.822E-09	6.505E-09	2.6	1.21
PM25_SB_MAR	S. Market Street Southbound	SB	2	717.3	0.45	13.3	44	1.3	Varied	9,254	9,551	102,806	8.822E-09	6.505E-09	2.6	1.21
									Total	18,508						

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30	25		
Emissions per Vehicle (g/VMT)	0.001765	0.002194		

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and PM2.5 Emissions - PM25_NB_MAR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	107	2.45E-05	9	7.11%	658	1.88E-04	17	7.38%	683	1.95E-04
2	0.42%	39	8.88E-06	10	4.39%	406	9.34E-05	18	8.17%	756	2.16E-04
3	0.41%	38	8.67E-06	11	4.66%	432	9.92E-05	19	5.70%	527	1.21E-04
4	0.26%	24	5.60E-06	12	5.89%	545	1.25E-04	20	4.27%	396	9.09E-05
5	0.50%	46	1.06E-05	13	6.15%	569	1.31E-04	21	3.26%	302	6.93E-05
6	0.90%	84	1.92E-05	14	6.04%	559	1.28E-04	22	3.30%	305	7.01E-05
7	3.79%	351	8.06E-05	15	7.01%	649	1.49E-04	23	2.46%	228	5.23E-05
8	7.76%	718	2.05E-04	16	7.14%	660	1.52E-04	24	1.86%	172	3.96E-05
								Total		9,254	

2023 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM25_SB_MAR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	107	2.33E-05	9	7.11%	658	1.79E-04	17	7.38%	683	1.86E-04
2	0.42%	39	8.44E-06	10	4.39%	406	8.88E-05	18	8.17%	756	2.05E-04
3	0.41%	38	8.24E-06	11	4.66%	432	9.43E-05	19	5.70%	527	1.15E-04
4	0.26%	24	5.32E-06	12	5.89%	545	1.19E-04	20	4.27%	396	8.64E-05
5	0.50%	46	1.01E-05	13	6.15%	569	1.24E-04	21	3.26%	302	6.59E-05
6	0.90%	84	1.83E-05	14	6.04%	559	1.22E-04	22	3.30%	305	6.67E-05
7	3.79%	351	7.67E-05	15	7.01%	649	1.42E-04	23	2.46%	228	4.97E-05
8	7.76%	718	1.95E-04	16	7.14%	660	1.44E-04	24	1.86%	172	3.77E-05
								Total		9,254	

Dot & Bar (Valley Title), San Jose - Offsite Residential Roadway Modeling
Cumulative Operation - S. Market Street
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2023

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEXH_NB_MAR	S. Market Street Northbound	NB	2	754.2	0.47	13.3	44	1.3	Varied	9,254	10,042	108,095	1.841E-07	1.358E-07	2.6	1.21
TEXH_SB_MAR	S. Market Street Southbound	SB	2	717.3	0.45	13.3	44	1.3	Varied	9,254	9,551	102,806	1.841E-07	1.358E-07	2.6	1.21
									Total	18,508						

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	30	25		
Emissions per Vehicle (g/VMT)	0.03684	0.04618		

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_MAR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	107	5.11E-04	9	7.11%	658	3.96E-03	17	7.38%	683	4.11E-03
2	0.42%	39	1.85E-04	10	4.39%	406	1.95E-03	18	8.17%	756	4.55E-03
3	0.41%	38	1.81E-04	11	4.66%	432	2.07E-03	19	5.70%	527	2.53E-03
4	0.26%	24	1.17E-04	12	5.89%	545	2.61E-03	20	4.27%	396	1.90E-03
5	0.50%	46	2.22E-04	13	6.15%	569	2.73E-03	21	3.26%	302	1.45E-03
6	0.90%	84	4.01E-04	14	6.04%	559	2.68E-03	22	3.30%	305	1.46E-03
7	3.79%	351	1.68E-03	15	7.01%	649	3.11E-03	23	2.46%	228	1.09E-03
8	7.76%	718	4.32E-03	16	7.14%	660	3.17E-03	24	1.86%	172	8.27E-04
								Total		9,254	

2023 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_MAR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	107	4.86E-04	9	7.11%	658	3.76E-03	17	7.38%	683	3.91E-03
2	0.42%	39	1.76E-04	10	4.39%	406	1.85E-03	18	8.17%	756	4.32E-03
3	0.41%	38	1.72E-04	11	4.66%	432	1.97E-03	19	5.70%	527	2.40E-03
4	0.26%	24	1.11E-04	12	5.89%	545	2.49E-03	20	4.27%	396	1.80E-03
5	0.50%	46	2.11E-04	13	6.15%	569	2.60E-03	21	3.26%	302	1.38E-03
6	0.90%	84	3.82E-04	14	6.04%	559	2.55E-03	22	3.30%	305	1.39E-03
7	3.79%	351	1.60E-03	15	7.01%	649	2.96E-03	23	2.46%	228	1.04E-03
8	7.76%	718	4.11E-03	16	7.14%	660	3.01E-03	24	1.86%	172	7.87E-04
								Total		9,254	

Dot & Bar (Valley Title), San Jose - Offsite Residential Roadway Modeling
Cumulative Operation - S. Market Street
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2023

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height	(Sigma z) Initial Vertical Dimension
TEVAP_NB_MAR	S. Market Street Northbound	NB	2	754.2	0.47	13.3	44	1.3	Varied	9,254	10,042	108,095	2.262E-07	1.668E-07	2.6	1.21
TEVAP_SB_MAR	S. Market Street Southbound	SB	2	717.3	0.45	13.3	44	1.3	Varied	9,254	9,551	102,806	2.262E-07	1.668E-07	2.6	1.21
									Total	18,508						

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	30	25		
Emissions per Vehicle per Hour (g/hour)	1.35761	1.35761		
Emissions per Vehicle per Mile (g/VMT)	0.04525	0.05430		

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_MAR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	107	6.28E-04	9	7.11%	658	4.65E-03	17	7.38%	683	4.83E-03
2	0.42%	39	2.28E-04	10	4.39%	406	2.39E-03	18	8.17%	756	5.35E-03
3	0.41%	38	2.22E-04	11	4.66%	432	2.54E-03	19	5.70%	527	3.11E-03
4	0.26%	24	1.43E-04	12	5.89%	545	3.21E-03	20	4.27%	396	2.33E-03
5	0.50%	46	2.73E-04	13	6.15%	569	3.35E-03	21	3.26%	302	1.78E-03
6	0.90%	84	4.93E-04	14	6.04%	559	3.29E-03	22	3.30%	305	1.80E-03
7	3.79%	351	2.07E-03	15	7.01%	649	3.82E-03	23	2.46%	228	1.34E-03
8	7.76%	718	5.08E-03	16	7.14%	660	3.89E-03	24	1.86%	172	1.02E-03
								Total		9,254	

2023 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_MAR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	107	5.97E-04	9	7.11%	658	4.42E-03	17	7.38%	683	4.59E-03
2	0.42%	39	2.16E-04	10	4.39%	406	2.28E-03	18	8.17%	756	5.08E-03
3	0.41%	38	2.11E-04	11	4.66%	432	2.42E-03	19	5.70%	527	2.95E-03
4	0.26%	24	1.36E-04	12	5.89%	545	3.05E-03	20	4.27%	396	2.22E-03
5	0.50%	46	2.60E-04	13	6.15%	569	3.19E-03	21	3.26%	302	1.69E-03
6	0.90%	84	4.69E-04	14	6.04%	559	3.13E-03	22	3.30%	305	1.71E-03
7	3.79%	351	1.97E-03	15	7.01%	649	3.64E-03	23	2.46%	228	1.28E-03
8	7.76%	718	4.83E-03	16	7.14%	660	3.70E-03	24	1.86%	172	9.66E-04
								Total		9,254	

Dot & Bar (Valley Title), San Jose - Offsite Residential Roadway Modeling
Cumulative Operation - S. Market Street
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2023

											Line Area					
Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day	Area (sq m)	Area (sq ft)	Emission (g/s/m2)	Emission (lb/hr/ft2)	Initial Vertical height (m)	(Sigma z) Initial Vertical Dimension
FUG_NB_MAR	S. Market Street Northbound	NB	2	754.2	0.47	13.3	44	1.3	Varied	9,254	10,042	108,095	1.688E-07	1.245E-07	2.6	1.21
FUG_SB_MAR	S. Market Street Southbound	SB	2	717.3	0.45	13.3	44	1.3	Varied	9,254	9,551	102,806	1.688E-07	1.245E-07	2.6	1.21
									Total	18,508						

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30	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)	0.01486	0.01486		
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03377	0.03377		

Emisson Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_MAR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	107	4.68E-04	9	7.11%	658	2.89E-03	17	7.38%	683	3.00E-03
2	0.42%	39	1.70E-04	10	4.39%	406	1.79E-03	18	8.17%	756	3.32E-03
3	0.41%	38	1.66E-04	11	4.66%	432	1.90E-03	19	5.70%	527	2.32E-03
4	0.26%	24	1.07E-04	12	5.89%	545	2.40E-03	20	4.27%	396	1.74E-03
5	0.50%	46	2.04E-04	13	6.15%	569	2.50E-03	21	3.26%	302	1.33E-03
6	0.90%	84	3.68E-04	14	6.04%	559	2.46E-03	22	3.30%	305	1.34E-03
7	3.79%	351	1.54E-03	15	7.01%	649	2.85E-03	23	2.46%	228	1.00E-03
8	7.76%	718	3.16E-03	16	7.14%	660	2.90E-03	24	1.86%	172	7.58E-04
								Total		9,254	

2023 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_MAR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	107	4.46E-04	9	7.11%	658	2.75E-03	17	7.38%	683	2.86E-03
2	0.42%	39	1.62E-04	10	4.39%	406	1.70E-03	18	8.17%	756	3.16E-03
3	0.41%	38	1.58E-04	11	4.66%	432	1.80E-03	19	5.70%	527	2.20E-03
4	0.26%	24	1.02E-04	12	5.89%	545	2.28E-03	20	4.27%	396	1.65E-03
5	0.50%	46	1.94E-04	13	6.15%	569	2.38E-03	21	3.26%	302	1.26E-03
6	0.90%	84	3.50E-04	14	6.04%	559	2.34E-03	22	3.30%	305	1.28E-03
7	3.79%	351	1.47E-03	15	7.01%	649	2.71E-03	23	2.46%	228	9.52E-04
8	7.76%	718	3.00E-03	16	7.14%	660	2.76E-03	24	1.86%	172	7.21E-04
								Total		9,254	

Dot & Bar (Valley Title), San Jose, CA - S. Market Street - TACs & PM2.5
Maximum Cancer Risk and PM2.5 Concentration
AERMOD Risk Modeling Parameters and Maximum Concentrations
Impacts at YWCA Childcare Center (0-6 years old), 6-Year Infant & Child Exposure - 1 meter

Emissions Years	2027
Receptor Information	
Number of Receptors	1
Receptor Height =	1.0 meters
Receptor distances =	at MEI chilcare site

Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

Emission Years	Concentration (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2027	0.00025	0.02825	0.03428

Emission Years	PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2027	0.0257	0.02437	0.0014

Maximum School Child PM2.5 Concentration (µg/m^3)* =	**0.01**

* Concentration adjusted for exposure duration at school

Dot & Bar (Valley Title), San Jose, CA - S. Market Street Cancer Risk
Maximum MEI and Child Cancer Risk
Child Exposures (1.0 meter receptor heights)
Impacts at YWCA Childcare Center (0-6 years old), 6-Year Infant & Child Exposure - 1 meter

Cancer Risk Calculation Method

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 8hr BR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
SAF = School Adjustment Factor (unitless) for source operation and exposures different than 8 hours/day
= (24/SHR) x (7days/SDay) x (ScHR/8 hrs)
SHR = Hours of emission source operation
SDay = Modeled number of days per week of source operaion
ScHR = School operation hours while emission source in operation
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
10^{-6} = Conversion factor

Values

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

	Infant	Child
Age -->	0 - <2	2 - <16
Parameter		
ASF	10	3
8-Hr BR* =	1200	520
ScHR** =	10.00	10.00
SHR =	24	24
SDay =	7	7
A =	1	1
EF =	250	250
AT =	70	70
SAF =	1.25	1.25

* 95th percentile 8-hr breathing rates for moderate intensity activities
** ScHR based on 10 hours school day

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Year	Exposure Duration (years)	Age	Maximum - Exposure Information: Age Sensitivity Factor	Annual TAC Conc (ug/m3): DPM	Exhaust TOG	Evaporative TOG	Cancer Risk (per million): DPM	Exhaust TOG	Evaporative TOG	Total	Hazard Index
1	2024	1	0 - 1	10	0.0003	0.0283	0.0343	0.0404	0.0260	0.0019	0.0683	0.0001
2	2025	1	1 - 2	10	0.0003	0.0283	0.0343	0.0404	0.0260	0.0019	0.0683	
3	2026	1	2 - 3	3	0.0003	0.0283	0.0343	0.0052	0.0034	0.0002	0.0089	
4	2027	1	3 - 4	3	0.0003	0.0283	0.0343	0.0052	0.0034	0.0002	0.0089	
5	2028	1	4 - 5	3	0.0003	0.0283	0.0343	0.0052	0.0034	0.0002	0.0089	
6	2029	1	5 - 6	3	0.0003	0.0283	0.0343	0.0052	0.0034	0.0002	0.0089	
Total Increased Cancer Risk								0.1380	0.0891	0.0064	**0.17**	

Dot & Bar (Valley Title), San Jose, CA - S. Market Street Traffic - TACs & PM2.5 AERMOD Risk Modeling Parameters and Maximum Concentrations - Project Traffic at MAX Residential Receptors (1.5 m receptor heights)

Emission Year	2027
Receptor Information	Max residential receptor
Number of Receptors	1
Receptor Height	1.5 meters
Receptor Distances	At Max residential location
Meteorological Conditions	
BAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Maximum Residential Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.00029	0.0345	0.04185

Maximum Residential PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.03137	0.02972	0.00165

Dot & Bar (Valley Title), San Jose, CA - S. Market Street Cancer Risk & PM2.5
Impacts at MAX Residential Receptor- 1.5 meter receptor height (1st floor)
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*	2024	10	0.0003	0.0345	0.0419	0.004	0.003	0.0002	0.01
1	1	0 - 1	2024	10	0.0003	0.0345	0.0419	0.048	0.032	0.0023	0.08
2	1	1 - 2	2025	10	0.0003	0.0345	0.0419	0.048	0.032	0.0023	0.08
3	1	2 - 3	2026	3	0.0003	0.0345	0.0419	0.007	0.005	0.0004	0.01
4	1	3 - 4	2027	3	0.0003	0.0345	0.0419	0.007	0.005	0.0004	0.01
5	1	4 - 5	2028	3	0.0003	0.0345	0.0419	0.007	0.005	0.0004	0.01
6	1	5 - 6	2029	3	0.0003	0.0345	0.0419	0.007	0.005	0.0004	0.01
7	1	6 - 7	2030	3	0.0003	0.0345	0.0419	0.007	0.005	0.0004	0.01
8	1	7 - 8	2031	3	0.0003	0.0345	0.0419	0.007	0.005	0.0004	0.01
9	1	8 - 9	2032	3	0.0003	0.0345	0.0419	0.007	0.005	0.0004	0.01
10	1	9 - 10	2033	3	0.0003	0.0345	0.0419	0.007	0.005	0.0004	0.01
11	1	10 - 11	2034	3	0.0003	0.0345	0.0419	0.007	0.005	0.0004	0.01
12	1	11 - 12	2035	3	0.0003	0.0345	0.0419	0.007	0.005	0.0004	0.01
13	1	12 - 13	2036	3	0.0003	0.0345	0.0419	0.007	0.005	0.0004	0.01
14	1	13 - 14	2037	3	0.0003	0.0345	0.0419	0.007	0.005	0.0004	0.01
15	1	14 - 15	2038	3	0.0003	0.0345	0.0419	0.007	0.005	0.0004	0.01
16	1	15 - 16	2039	3	0.0003	0.0345	0.0419	0.007	0.005	0.0004	0.01
17	1	16-17	2040	1	0.0003	0.0345	0.0419	0.001	0.001	0.0000	0.00
18	1	17-18	2041	1	0.0003	0.0345	0.0419	0.001	0.001	0.0000	0.00
19	1	18-19	2042	1	0.0003	0.0345	0.0419	0.001	0.001	0.0000	0.00
20	1	19-20	2043	1	0.0003	0.0345	0.0419	0.001	0.001	0.0000	0.00
21	1	20-21	2044	1	0.0003	0.0345	0.0419	0.001	0.001	0.0000	0.00
22	1	21-22	2045	1	0.0003	0.0345	0.0419	0.001	0.001	0.0000	0.00
23	1	22-23	2046	1	0.0003	0.0345	0.0419	0.001	0.001	0.0000	0.00
24	1	23-24	2047	1	0.0003	0.0345	0.0419	0.001	0.001	0.0000	0.00
25	1	24-25	2048	1	0.0003	0.0345	0.0419	0.001	0.001	0.0000	0.00
26	1	25-26	2049	1	0.0003	0.0345	0.0419	0.001	0.001	0.0000	0.00
27	1	26-27	2050	1	0.0003	0.0345	0.0419	0.001	0.001	0.0000	0.00
28	1	27-28	2051	1	0.0003	0.0345	0.0419	0.001	0.001	0.0000	0.00
29	1	28-29	2052	1	0.0003	0.0345	0.0419	0.001	0.001	0.0000	0.00
30	1	29-30	2053	1	0.0003	0.0345	0.0419	0.001	0.001	0.0000	0.00
Total Increased Cancer Risk								0.22	0.147	0.010	**0.37**

* Third trimester of pregnancy

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0001	0.03	0.03

Dot & Bar (Valley Title), San Jose, CA - S. Market Street - TACs & PM2.5
Maximum Cancer Risk and PM2.5 Concentration
AERMOD Risk Modeling Parameters and Maximum Concentrations
Impacts at Norte Dame High School (14 years and older), 1-Year Child Exposure - 1.5 meter

Emissions Years	2027
Receptor Information	
Number of Receptors	46
Receptor Height =	1.5 meters
Receptor distances =	at high school site

Meteorological Conditions

BAAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

Emission Years	Concentration (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2027	0.00039	0.05229	0.06338

Emission Years	PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2027	0.0474	0.04488	0.0025

Maximum School Child PM2.5 Concentration (µg/m^3)* =	**0.01**

* Concentration adjusted for exposure duration at school

Dot & Bar (Valley Title), San Jose, CA - S. Market Street Cancer Risk
Maximum Child Cancer Risk
Child Exposures (1.0 meter receptor heights)
Impacts at Norte Dame High School (14 years and older), 1-Year Child Exposure - 1.5 meter

Cancer Risk Calculation Method

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 8hr BR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
SAF = School Adjustment Factor (unitless) for source operation and exposures different than 8 hours/day
= (24/SHR) x (7days/SDay) x (ScHR/8 hrs)
SHR = Hours of emission source operation
SDay = Modeled number of days per week of source operaion
ScHR = School operation hours while emission source in operation
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
10^{-6} = Conversion factor

Values

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

	Infant	Child
Age -->	0 - <2	2 - <16
Parameter		
ASF	10	3
8-Hr BR* =	1200	520
ScHR** =	10.00	10.00
SHR =	24	24
SDay =	7	7
A =	1	1
EF =	250	250
AT =	70	70
SAF =	1.25	1.25

* 95th percentile 8-hr breathing rates for moderate intensity activities
** ScHR based on 10 hours school day

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Year	Exposure Duration (years)	Age	Maximum - Exposure Information: Age Sensitivity Factor	Annual TAC Conc (ug/m3): DPM	Exhaust TOG	Evaporative TOG	Cancer Risk (per million): DPM	Exhaust TOG	Evaporative TOG	Total	Hazard Index
1	2024	1	14 - 15	3	0.0004	0.0523	0.0634	0.0082	0.0063	0.0004	0.015	0.0001
2	2025	1	15 - 16	3	0.0004	0.0523	0.0634	0.0082	0.0063	0.0004	0.015	
3	2026	1	16 - 17	3	0.0004	0.0523	0.0634	0.0082	0.0063	0.0004	0.015	
4	2027	1	17 - 18	3	0.0004	0.0523	0.0634	0.0082	0.0063	0.0004	0.015	
Total Increased Cancer Risk								0.0327	0.0251	0.0018	**0.06**	

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	**7/2/2021**
Contact Name	Casey Divine
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x103
Email	cdivine@illingworthrodkin.com
Project Name	Dot & Bar (Valley Title)
Address	San Carlos & S 2nd Streets SE Corner
City	San Jose
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	Mixed-Use
Project Size (# of units or building square feet)	1.4m-sf office, 60k-sf retail
Comments:	

For Air District assistance, the following steps must be completed:

1. Complete all the contact and project information requested in **Table A** ncomplete forms will not be processed. Please include a project site map.

2. Download and install the free program Google Earth, **http://www.google.com/earth/download/ge/,** and then download the county specific Google Earth stationary source application files from the District's website, **http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.** The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.

3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.

4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.

5. List the stationary source information in **Table B** blue section only.

6. Note that a small percentage of the stationa ve Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name ght). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.

7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.

Submit forms, maps, and questions to Matthew Hanson at 415-749-8733, or mhanson@baaqmd.gov

Table B: Google Earth data

Project Childcare MEI

Distance from Receptor (feet) or MEI[1]	Plant No.	Facility Name	Address	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
790	2060	Team San Jose	408 Almaden Boulevard	20.06	0.03	0.59		Generator, Boiler (5), Fire Pump		2018 Dataset	0.06	1.20	0.002	0.04
+1000	8556	FMT SJ, LLC dba Fairmont Hotel, San Jose	170 So Market Street	10.03	0.02	0.49		Generator (2), Dry Cleaning Machine, Boiler (2)		2018 Dataset	0.04	0.40	0.001	0.02
500	15031	Robert F Peckham Federal Building	280 So 1st Street	1.57	0.004	0.14		Generator, Boiler		2018 Dataset	0.12	0.19	0.0005	0.02
860	15125	San Jose Marriott Hotel	301 So Market Street	1.29	0.002	0.12		Generator, Tank, Boiler (2)		2018 Dataset	0.05	0.06	0.0001	0.01
+1000	16778	Owl Energy Resources Inc	170 So Market Street	14.25	0.10	2.85		Natural Gas Generator (2)		2018 Dataset	0.04	0.57	0.004	0.11
805	17018	San Jose Redevelopment Agency	435 So Market Street	0.13	--	--		Generators		2018 Dataset	0.06	0.01	#VALUE!	#VALUE!
+1000	19298	DataPipe Inc	150 So 1st Street	62.76	0.06	0.08		Generators		2018 Dataset	0.04	2.51	0.002	0.003
800	22239	G&K Management	201 So 4th Street	1.06	0.004	0.003		Generators		2018 Dataset	0.06	0.06	0.0002	0.0002
980	111979	Super Gas & Mart	498 S 4th St	2.37	0.01	--		Gas Dispensing Facility		2018 Dataset	0.01	0.04	0.0001	#VALUE!

Footnotes:

1. Maximally exposed individual
2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.
3. Each plant may have multiple permits and sources.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. Fuel codes: 98 = diesel, 189 = Natural Gas.
6. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.
7. The date that the HRSA was completed.
8. Engineer who completed the HRSA. For District purposes only.
9. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
10. The HRSA "Chronic Health" number represents the Hazard Index.
11. Further information about common sources:
    a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
    b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of 0.003 or
    c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
    d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but instead should reflect
    e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
    f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    g. This spray booth is considered to be insignificant.

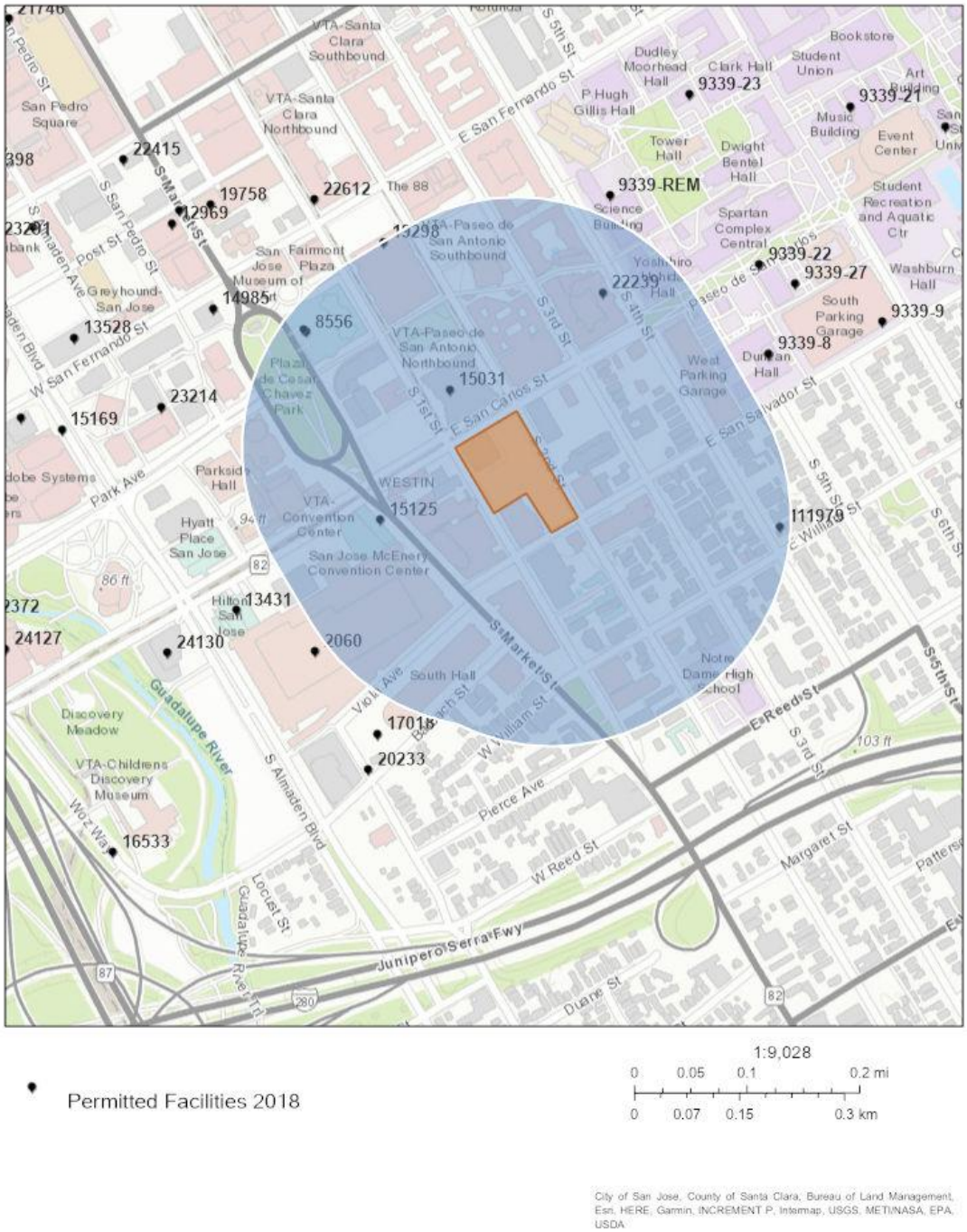
Date last updated:
03/13/2018

Stationary Source Risk & Hazards Screening Report

Area of Interest (AOI) Information

Area : 4,997,211.3 ft²

Jul 2 2021 15:32:33 Pacific Daylight Time



Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Facilities 2018	7	N/A	N/A

Permitted Facilities 2018

#	FACID	Name	Address	City	St
1	8556	FMT SJ, LLC dba Fairmont Hotel, San Jose	170 So Market Street	San Jose	CA
2	15031	Robert F Peckham Federal Building	280 So 1st Street	San Jose	CA
3	15125	San Jose Marriott Hotel	301 So Market Street	San Jose	CA
4	16778	Owl Energy Resources Inc	170 So Market Street	San Jose	CA
5	19298	DataPipe Inc	150 So 1st Street	San Jose	CA
6	22239	G&K Management	201 So 4th Street	San Jose	CA
7	111979	Super Gas & Mart	498 S 4th St	San Jose	CA

#	Zip	County	Cancer	Hazard	PM_25	Type	Count
1	95113	Santa Clara	10.030	0.020	0.490	Contact BAAQMD	1
2	95113	Santa Clara	1.570	0.000	0.140	Contact BAAQMD	1
3	95113	Santa Clara	1.290	0.000	0.120	Contact BAAQMD	1
4	95113	Santa Clara	14.250	0.100	2.850	Contact BAAQMD	1
5	95113	Santa Clara	62.760	0.060	0.080	Generators	1
6	95112	Santa Clara	1.060	0.000	0.000	Generators	1
7	95112	Santa Clara	2.370	0.010	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.

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality

429 East Cotati Avenue
Cotati, CA 94931

Tel: 707-794-0400 *Fax: 707-794-0405*
www.illingworthrodkin.com *illro@illingworthrodkin.com*

M E M O

Date: September 23, 2021

To: Shannon George
Vice President & Principal Project Manager
David J. Powers & Associates, Inc.
1871 The Alameda, Suite 200
San José, CA 95126

From: James A. Reyff
Illingworth & Rodkin, Inc.
429 East Cotati Avenue
Cotati, CA 94931

SUBJECT: Icon-Echo Mixed-Use Towers Air Quality Cumulative Memo
I&R Job# 20-009

The City of San José currently has and is planning for the construction of many development projects in the downtown area. Due to the high number of construction activities from development projects, the City requested that air quality assessments for these projects include the construction community risk impacts from these nearby developments in the cumulative analysis.

The inclusion of construction community risk impacts in the cumulative analysis is problematic because not all nearby developments have had CEQA studies conducted, nor have these projects been scheduled for construction in a timely manner that the cumulative analysis could properly include their effects. Construction projects can have elevated effects but usually only temporarily (e.g., for one year or so). Refined information is not usually available for these construction assessments so cumulative analyses have to assume projects meet the health risk single-source significance thresholds. With these assumptions, it only takes the inclusion of two to three projects to reveal exceedances of the annual $PM_{2.5}$ concentration cumulative threshold. There are often more than three approved projects in downtown San José that could be constructed around the same time as a proposed project. Therefore, downtown San José has become an environment where the existing health risk impacts could exceed the cumulative significance thresholds on their own without a proposed project.

The Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines state that, "A Lead Agency shall examine TAC and/or $PM_{2.5}$ sources that are located within 1,000 feet of a proposed project site. Sources of TACs include, but are not limited to, land uses such as freeways and high-volume roadways, truck distribution centers, ports, rail yards, refineries, chrome plating

facilities, dry cleaners using perchloroethylene, and gasoline dispensing facilities." While the Guidelines do not exclude construction impacts from nearby developments as a cumulative source, *Illingworth & Rodkin, Inc.* (I&R) has typically not included this as a cumulative source due to its adjustable and temporary variables. The construction activities of a project can change from what was analyzed in a report and most substantial emissions from construction would only last a few years or less.

Alternatively, I&R reached out to BAAQMD[1] to get direction on how to address the cumulative impact threshold when a project's maximally exposure individual (MEI) is at receptors that has existing exposure levels already exceeding cumulative thresholds. This would mean that no matter what mitigation was applied to the project, the resulting cumulative level would be above the threshold. I&R's approach has been (1) apply mitigation to the project to minimize project impacts to below the single-source threshold and (2) explain that the cumulative sources alone exceed the cumulative threshold, and the project, using best available mitigation measures, would only contribute a small percentage to the total cumulative risk impact, and therefore the project's impact is not cumulatively considerable. BAAMQD response concurred with this approach and that the impact would not be considered significant after mitigation is applied.

It should be noted that BAAQMD is considering new cancer risk thresholds for overburdened communities.[2] The District recently held a workshop to encourage public comment. These would include a lower cancer risk threshold of 6 chances per million at an MEI. Overburdened communities are proposed to be defined as an area located (1) 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 (2) within 1,000 feet of any such census tract. The City, as a lead agency, could consider areas with cumulative cancer risk greater than 100 per million or annual $PM_{2.5}$ concentrations greater than 0.8 micrograms per cubic meter to also be overburdened. The District's proposal is only that and is currently going through the public workshop process. The risk of 6 chances per million as at this stage and idea and not adopted. We are aware of one other community that has a similar approach, which is San Francisco. In overburdened areas of that City (considered Air Pollution Exposure Zones), they use a cancer risk threshold of 7 chances per million.

[1] Correspondence with Areana Flores, MSc, Environmental Planner, BAAQMD, February 23, 2021.
[2] See BAAQMD Proposed Regulation 2: Permits - 2021 Amendments to Rules 2-1 and 2-5 (Under Development) https://www.baaqmd.gov/rules-and-compliance/rules/reg-2-permits?rule_version=2021%20Amendments