# *BELLARMINE COLLEGE PREPRATORY MASTER PLAN UPDATE CONSTRUCTION HEALTH RISK ASSESSMENT*

## *San José, California*

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## Introduction

The purpose of this report is to address the potential health risk impacts associated with the proposed renovations and redevelopment at Bellarmine College Preparatory as part of its Master Plan Update. The Project is located at 960 West Hedding Street in San Jose, California. The air quality impacts from this project would be associated with the demolition, construction, and renovation of several buildings. Air pollutant emissions associated with demolition, construction, and renovations of the project were predicted using appropriate computer models. In addition, the potential health risk impacts from 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 17.64-acre project site is currently occupied by the existing Bellarmine College Preparatory School which includes a private high school and residential uses for some staff. The school currently has a maximum allowed enrollment of 1,750 students and approximately 208 faculty and staff, which includes 17 faculty and staff that live on campus. The project proposes to keep most of the existing school buildings but demolish and replace Wade and O'Donnell Hall, relocate Berchman's Hall, and renovate Liccardo Center and Matthewson Hall. The proposed project would be constructed in five different phases, with the first phase to start in October 2024 and the last phase to be completed in August 2027. There is not expected to be an increase in the allowed student enrollment or staffing. The five different phases would include:

- Relocation of Berchman's Hall
- Demolition of Wade Hall and Construction of New Academic Building
- Demolition of O'Donnell Hall and Construction of Administrative Buildings
- Renovation of Liccardo Center
- Renovation of Matthewson Hall

## 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

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

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, often because they cause cancer. 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. Health risks from TACs are estimated using the Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines, which were published in February of 2015.[2] See *Attachment 1* for a detailed description of the health risk modeling methodology used in this assessment.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors to the project site are the residents in the adjacent single- and multi-family homes to the north, south, and west. There

[2] 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.

are also children at the nearby Temple Emanu-El Preschool. This project would not introduce new sensitive receptors 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 ($PM_{2.5}$) 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.[3]

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*.[4] In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many Plan measures have been approved and adopted, including the

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

federal on-road and non-road diesel engine emission standards for new engines, and adoption of regulations for low sulfur fuel in California.

CARB has adopted and implemented a number of additional 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, CARB's program 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 $NO_X$.

Local Regulations

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 (NAAQS) and California Ambient Air Quality Standards (CAAQS). 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.[5] The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement

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

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. The BAAQMD defines overburdened communities as 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 70$^{th}$ percentile, or (ii) within 1,000 feet of any such census tract.[6] 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 as the Project site is scored at the 58$^{th}$ percentile.[7]

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 California Environmental Quality Act (CEQA) requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for TACs, odors, and greenhouse gas (GHG) emissions. *Attachment 1* includes detailed health risk modeling methodology.

<u>San José Envision 2040 General Plan</u>

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.

[6] 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.
[7] OEHAA, CalEnviroScreen 4.0 Maps https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40
[8] Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*. May.

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-10.13 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 – 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.

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.

**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 | 54 | 10 |
| $NO_x$ | 54 | 54 | 10 |
| $PM_{10}$ | 82 (Exhaust) | 82 | 15 |
| $PM_{2.5}$ | 54 (Exhaust) | 54 | 10 |
| CO | Not Applicable | 9.0 ppm (8-hour average) or 20.0 ppm (1-hour average) | |
| Fugitive Dust | Construction Dust Ordinance or other Best Management Practices | None | |
| **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$^3$ | |

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.

## Construction Health Risk Impacts and Mitigation Measures

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

A community health risk assessment was prepared to address project construction impacts on the surrounding off-site sensitive receptors. Therefore, the impact of the existing sources of TAC upon the existing sensitive receptors was assessed.

Health risk impacts are addressed by predicting increased lifetime cancer risk, the increase in annual $PM_{2.5}$ concentrations, and computing the Hazard Index (HI) for non-cancer health risks. Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust emissions pose health risks for sensitive receptors such as surrounding residents. The primary health risk impact issues associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive

receptors from construction emissions of DPM and $PM_{2.5}$.[9] This assessment included dispersion modeling to predict the offsite and onsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated. The methodology for computing health risks impacts is contained in *Attachment 1.*

**Construction Period Emissions**

The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 was used to estimate emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types and size, and anticipated construction schedule were input to CalEEMod. The CARB EMission FACtors 2021 (EMFAC2021) model was used to predict emissions from construction traffic, which includes worker travel, vendor trucks, and haul trucks.[10] The CalEEMod model output along with construction inputs are included in *Attachment 2* and EMFAC2021 vehicle emissions modeling outputs are included in *Attachment 3.*

CalEEMod Modeling

*Land Use Inputs*

The proposed project would be constructed in five different phases. Separate CalEEMod runs were developed for each separate phase. The land uses for each construction phase were entered into CalEEMod as described in Table 2.

**Table 2. Construction Land Uses Entered into CalEEMod**

| Project Land Uses | Size | Units | Square Feet | Acreage |
|---|---|---|---|---|
| **Berchman Hall Relocation (2023)** | | | | |
| Single Family Housing | 1 | Dwelling Unit | 5,030 | 1 |
| General Office Building | 1.22 | 1,000-sf | 1,223 | |
| Parking Lot | 24 | Parking Spaces | 20,000 | |
| **Wade Academic Hall (2023-2025)** | | | | |
| High School | 41.65 | 1,000-sf | 41,653 | 2.50 |
| General Office Building | 3.47 | 1,000-sf | 3,471 | |
| Parking Lot | 49 | Parking Spaces | 32,675 | |
| **New Classroom and Administration (2025-2026)** | | | | |
| High School | 8.84 | 1,000-sf | 8,840 | 0.90 |
| General Office Building | 14.44 | 1,000-sf | 14,438 | |
| Parking Lot | 49 | Parking Spaces | 32,675 | |
| **Liccardo Center Renovation (2026)** | | | | |
| High School | 22.66 | 1000-sf | 22,661 | 0.75 |
| **Matthewson Hall Renovation (2027)** | | | | |
| High School | 9.43 | 1,000-sf | 9,430 | 0.50 |
| General Office Building | 9.43 | 1000-sf | 9,430 | |
| Parking Lot | 22 | Parking Spaces | 7,000 | |

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

*Construction Inputs*

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

The CalEEMod construction equipment worksheet provided by the applicant included the schedule for each phase, projected equipment usage, and estimated truck hauling volumes. Within each phase, the quantity of equipment to be used along with the average hours per day and total number of workdays were provided. Since different equipment would have different estimates of the working days per phase, the equipment usage hours per day for each phase was computed by dividing the total number of hours that the equipment would be used by the number of days in that phase. The construction schedule included the following build-out timeline:

- Berchman Hall Relocation would begin construction in October 2023 and be renovated over a period of approximately one month, or 24 construction workdays.
- Wade Academic Hall would begin construction in November 2023 and be built over a period of approximately eight months, or 441 workdays.
- New Classroom and Administration building would begin construction in October 2025 and be built over a period of approximately 14 months, or 316 construction workdays.
- Liccardo Center Renovation would begin renovation in January 2026 and be renovated over a period of approximately seven months, or 152 workdays.
- Matthewson Hall Renovation would begin renovation in January 2027 and be renovated over a period of approximately seven months, or 152 workdays.

The earliest year of full operation following complete construction and renovation was assumed to be 2028, although as phases are finished, they may begin to operate.

*Construction Truck Traffic Emissions*

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

The latest version of the CalEEMod model is based on the older version of the CARB EMFAC2017 motor vehicle emission factor model. This model has been superseded by the

EMFAC2021 model; however, CalEEMod has not been updated to include EMFAC2021. Therefore, the construction traffic information was combined with EMFAC2021 motor vehicle emissions factors. EMFAC2021 provides aggregate emission rates in grams per mile for each vehicle type. The vehicle mix for this study was based on CalEEMod default assumptions, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1and LDT2). Vendor trips are comprised of delivery and large trucks (EMFAC category MHDT and HHDT) and haul trips, including concrete trucks, are comprised of large trucks (EMFAC category HHDT). Travel distances are based on CalEEMod default lengths, which are 10.8 miles for worker travel, 7.3 miles for vendor trips and 20 miles for hauling (soil import/export). Since CalEEMod does not address concrete trucks, these were treated as vendor travel distances. Each trip was assumed to include an idle time of 5 minutes. Emissions associated with vehicle starts were also included. On road emissions in Santa Clara County from the years 2023-2027 were used in these calculations. Table 3 provides the traffic inputs that were combined with the EMFAC2021 emission database to compute vehicle emissions.

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

| CalEEMod Run/Land Uses and Construction Phase | Trips by Trip Type | | | Notes |
|---|---|---|---|---|
| | Total Worker[1] | Total Vendor[1] | Total Haul[2] | |
| Vehicle mix[1] | 50% LDA<br>25% LDT1<br>25% LDT2 | 50% MHDT<br>50% HHDT | 100% HHDT | |
| Trip Length (miles) | 10.8 | 7.3 | 20.0 (Demo/Soil)<br>7.3 (Cement/Asphalt) | CalEEMod default distance with 5-min truck idle time. |
| **Berchman Hall Relocation (2023)** | | | | |
| Site Preparation | 104 | - | - | CalEEMod default worker trips. |
| Trenching | 88 | - | - | CalEEMod default worker trips. |
| **Wade Academic Hall (2023-2025)** | | | | |
| Demolition | 195 | - | 101 | 22,287-sf existing building demolition. CalEEMod default worker trips. |
| Site Preparation | 50 | - | - | CalEEMod default worker trips. |
| Grading | 120 | - | 375 | 3,000-cy of export volume. CalEEMod default worker trips. |
| Trenching | 240 | - | - | CalEEMod default worker trips. |
| Building Construction | 4,224 | 1,716 | 520 | 260 concrete truck round trips. CalEEMod default worker and vendor trips. |
| Architectural Coating | 1,464 | - | - | CalEEMod default worker trips. |
| Paving | 130 | | 380 | 1,900-tons asphalt hauling. CalEEMod default worker trips. |
| **New Classroom and Administration (2025-2026)** | | | | |
| Demolition | 675 | - | 208 | 45,700-sf existing building demolition. CalEEMod default worker trips. |
| Site Preparation | 40 | - | - | CalEEMod default worker trips. |
| Grading | 120 | - | 375 | 3,000-cy of export volume. CalEEMod default worker trips. |
| Trenching | 240 | - | - | CalEEMod default worker trips. |
| Building Construction | 1,936 | 792 | 208 | 104 concrete truck round trips. CalEEMod default worker and vendor trips. |
| Architectural Coating | 528 | - | - | CalEEMod default worker trips. |
| Paving | 100 | - | 240 | 1,200-tons asphalt hauling. CalEEMod default worker trips. |
| **Liccardo Center Renovation (2026)** | | | | |
| Architectural Coating | 304 | - | - | CalEEMod default worker trips. |
| **Matthewson Hall Renovation (2027)** | | | | |
| Architectural Coating | 304 | - | - | CalEEMod default worker trips. |

Notes: [1] Based on 2023-2027 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. Concrete and 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 and dividing those emissions by the number of active workdays during that year. Table 4 shows the annualized average daily construction emissions of ROG, $NO_X$, $PM_{10}$ exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 4, predicted annualized project construction emissions would not exceed the BAAQMD significance thresholds during any year of construction.

**Table 4. Construction Period Emissions**

| Year | ROG | NOx | $PM_{10}$ Exhaust | $PM_{2.5}$ Exhaust |
|---|---|---|---|---|
| *Construction Emissions Per Year (Tons)* | | | | |
| 2023 | 0.01 | 0.05 | <0.01 | <0.01 |
| 2024 | 0.18 | 0.71 | 0.03 | 0.03 |
| 2025 | 0.16 | 0.18 | 0.01 | 0.01 |
| 2026 | 0.32 | 0.59 | 0.02 | 0.02 |
| 2027 | 0.10 | 0.04 | <0.01 | <0.01 |
| *Average Daily Construction Emissions Per Day (pounds/day)* | | | | |
| 2023 (24 construction workdays) | 0.49 | 4.53 | 0.21 | 0.19 |
| 2024 (296 construction workdays) | 1.23 | 4.80 | 0.21 | 0.18 |
| 2025 (145 construction workdays) | 2.25 | 2.42 | 0.09 | 0.08 |
| 2026 (316 construction workdays) | 2.00 | 3.72 | 0.15 | 0.13 |
| 2027 (152 construction workdays) | 1.36 | 0.52 | 0.02 | 0.02 |
| *BAAQMD Thresholds (pounds per day)* | *54* lbs./day | *54* lbs./day | *82* lbs./day | *54* lbs./day |
| **Exceed Threshold?** | No | No | No | No |

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of $PM_{10}$ and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less-than-significant if best management practices are implemented to reduce these emissions. *Recommended Measure AQ-1 would implement BAAQMD-recommended best management practices*.

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

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

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

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

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

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

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

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

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

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

*Effectiveness of Mitigation Measure AQ-1*

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

**Operational Period Emissions**

An operational criteria pollutant emissions analysis was not completed for this project. The project is below operational screening criteria found in the BAAQMD CEQA Air Quality Guidelines and no changes to student or employee count are expected as a result of the proposed project. Therefore, operational period emissions were not analyzed.

**Community Health Risk from Project Construction**

Construction Emissions

The CalEEMod model and EMFAC2021 emissions provided total annual $PM_{10}$ exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total emissions from all construction stages as 0.06 tons (113 pounds). The on-

road emissions are a result of haul truck travel during grading activities, worker travel, and vendor deliveries during construction. A trip length of half a mile was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod as less than 0.07 tons (133 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 (i.e., residences) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects. [11,12] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

Construction Sources

To represent the construction equipment exhaust emissions, six area sources with an emission release height of 20 feet (6 meters) was used for the area sources.[13] An area source was used to represent construction at each individual building of the proposed project. The release height incorporates both the physical release height from the construction equipment (i.e., the height of the exhaust pipe) and plume rise after it leaves the exhaust pipe. Plume rise is due to both the high temperature of the exhaust and the high velocity of the exhaust gas. It should be noted that when modeling an area source, plume rise is not calculated by the AERMOD dispersion model as it would be for a point source (exhaust stack). Therefore, the release height from an area source used to represent emissions from sources with plume rise, such as construction equipment, should be based on the height the exhaust plume is expected to achieve, not just the height of the top of the exhaust pipe. Emissions from vehicle travel on- and off-site were distributed among the exhaust emission area sources throughout the site.

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

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

[12] BAAQMD, 2020, *BAAQMD Health Risk Assessment Modeling Protocol.* December. Web: https://www.baaqmd.gov/~/media/files/ab617-community-health/facility-risk-reduction/documents/baaqmd_hra_modeling_protocol-pdf.pdf?la=en

[13] California Air Resource Board, 2007. *Proposed Regulation for In-Use Off-Road Diesel Vehicles, Appendix D: Health Risk Methodology.* April. Web: https://ww3.arb.ca.gov/regact/2007/ordiesl07/ordiesl07.htm

Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources. Figure 1 shows the project construction site and receptors.

*AERMOD Inputs and Meteorological Data*

The modeling used a five-year data set (2013 – 2017) of hourly meteorological data from San José Airport prepared for use with the AERMOD model by BAAQMD. Construction emissions were modeled as occurring on weekdays between 7:00 a.m. to 7:00 p.m., when the majority of construction activity is expected to occur. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2023-2027 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptors. Receptor heights of 5 feet (1.5 meters) and 15 feet (4.5 meters) were used to represent the breathing height on the first and second floors of nearby residences.[14]

Summary of Construction Health Risk Impacts

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with the Office of Environmental Health Hazard Assessment (OEHHA) guidance for age sensitivity factors and exposure parameters as recommended by BAAQMD (see *Attachment 1)*. Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were also calculated and identified. Age-sensitivity factors reflect the greater sensitivity of infants and children to cancer causing TACs. Third-trimester, infant, child, and adult exposures were assumed to occur at all residences during the entire construction period. However, the exposure period was adjusted to begin in year 2024, the second year of project construction. Adjusting the exposure period in this manner resulted in higher construction risk impacts at the nearby sensitive receptors.

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

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

Additionally, modeling was conducted to predict the cancer risks, non-cancer health hazards, and maximum $PM_{2.5}$ concentrations associated with construction activities at the nearby Temple Emanu-El Preschool. The maximum increased cancer risks were adjusted using child exposure parameters. The uncontrolled cancer risk, $PM_{2.5}$ concentration, and HI at the nearby Temple

[14] 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

Emanu-El Preschool would not exceed their respective BAAQMD single-source significance thresholds, as shown in Table 5.

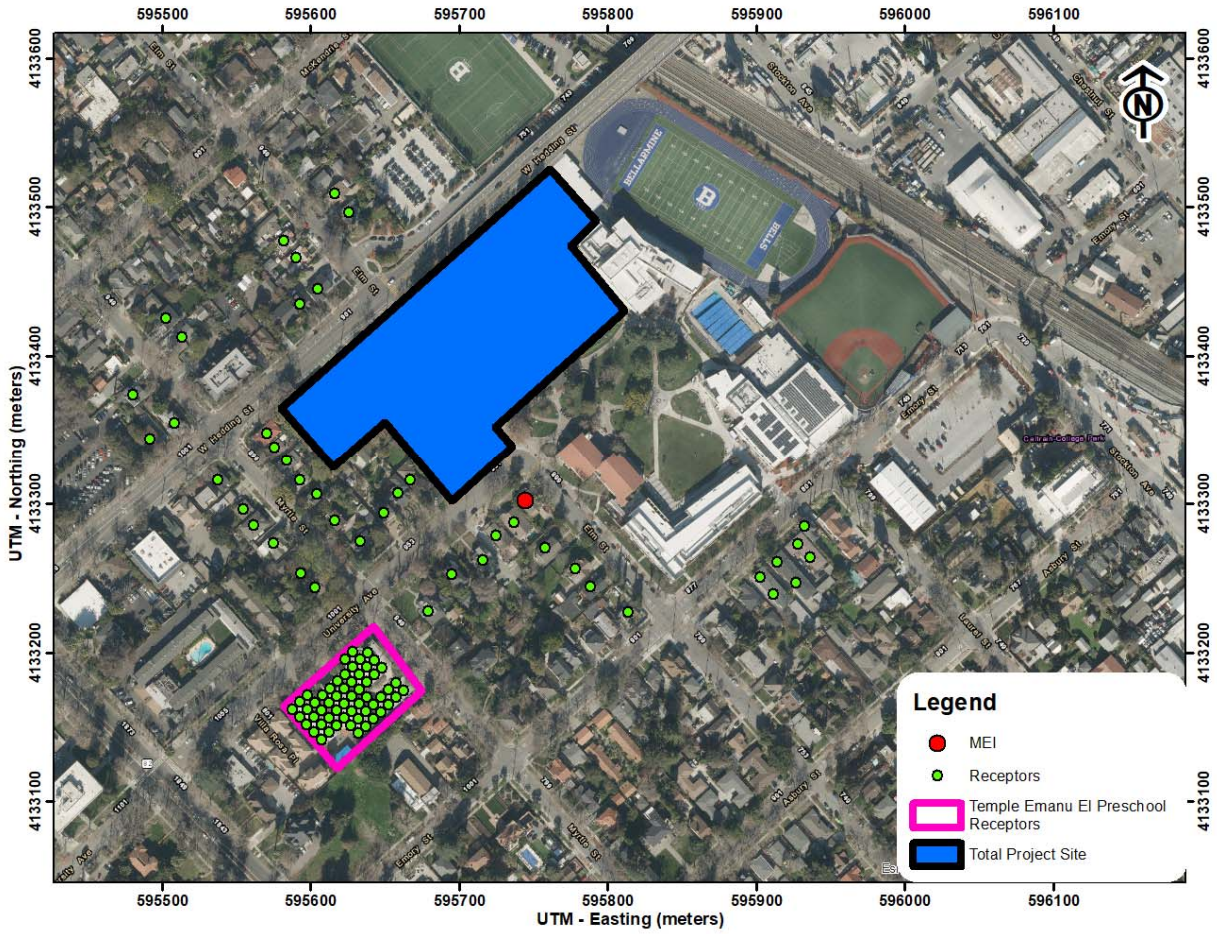
Summary of Project-Related Health Risks at the Off-Site Sensitive Receptors

As shown in Table 5, the unmitigated maximum cancer risks and annual $PM_{2.5}$ concentration from construction activities at the MEI location exceed the BAAQMD single-source significance thresholds. However, with the implementation of *Mitigation Measure AQ-1 and AQ-2*, the cancer risk and annual $PM_{2.5}$ concentration no longer exceed the single-source significance thresholds. Hazard index, unmitigated and mitigated, from construction activities at the MEI location does not exceed the BAAQMD single-source significance thresholds. Additionally, the unmitigated cancer risk, annual $PM_{2.5}$ concentration, and HI do not exceed the BAAQMD single-source significance thresholds at the Temple Emanu-El Preschool.

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

| Source | | Cancer Risk (per million) | Annual $PM_{2.5}$ ($\mu g/m^3$) | Hazard Index |
|---|---|---|---|---|
| Project Construction | Unmitigated | **20.80 (infant)** | **0.36** | 0.02 |
| | Mitigated | 6.95 (infant) | 0.15 | 0.01 |
| | ***BAAQMD Single-Source Threshold*** | ***10*** | ***0.3*** | ***1.0*** |
| ***Exceed Threshold?*** | Unmitigated | ***Yes*** | ***Yes*** | *No* |
| | Mitigated | *No* | *No* | *No* |
| *Impacts at Temple Emanu-El Preschool* | | | | |
| Project Construction | Unmitigated | 0.22 (child) | <0.01 | <0.01 |
| | ***BAAQMD Single-Source Threshold*** | ***10*** | ***0.3*** | ***1.0*** |
| ***Exceed Threshold?*** | Unmitigated | *No* | *No* | *No* |

**Figure 1. Locations of Project Construction Site, Off-Site Sensitive Receptors, and Maximum TAC Impacts (MEI)**

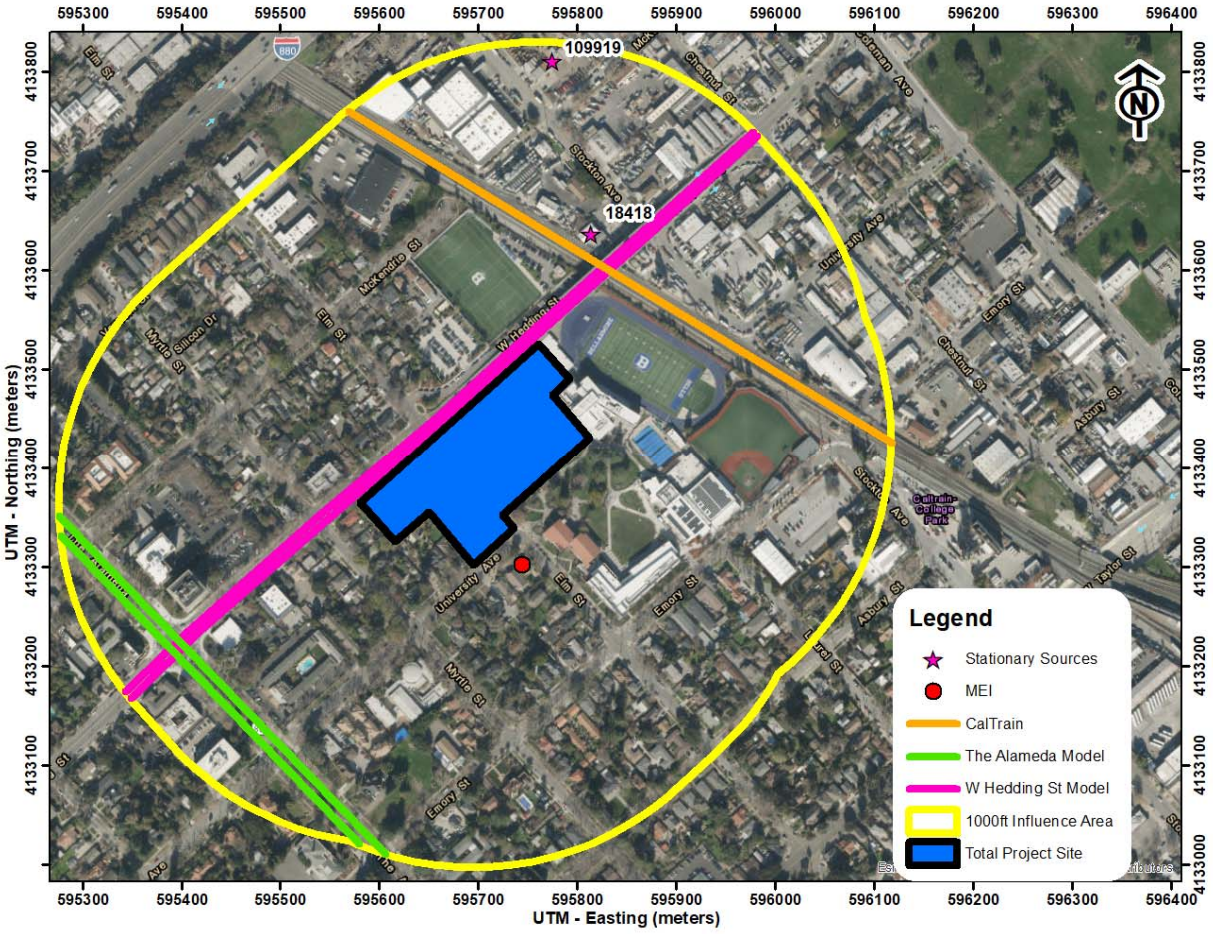



**Cumulative Health Risks of all TAC Sources at the Off-Site Project MEIs**

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

A review of the project area and based on provided traffic information indicated that two roadways within the influence area, The Alameda and West Hedding Street, would have traffic exceeding 10,000 vehicles per day. Other nearby streets would have less than 10,000 vehicles per day. A review of BAAQMD's stationary source geographic information systems (GIS) map tool identified two stationary sources with the potential to affect the project site and MEIs. Figure 2 shows the project area included within the influence area and the location of the MEIs. Health risk impacts from these sources upon the MEIs reported in Table 5. Details of the modeling and health risk calculations are included in *Attachment 5.*

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




Local Roadways – The Alameda and West Hedding Street

A refined analysis of potential health impacts from vehicle traffic on The Alameda and West Hedding Street was conducted. This analysis involved predicting emissions for the traffic volume and mix of vehicle types on the roadways near the project site and using an atmospheric dispersion model to predict exposure to TACs. The associated cancer risks were then computed based on the modeled exposures. *Attachment 1* includes a description of how health risk impacts, including cancer risk are computed.

*Traffic Emissions Modeling*

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on The Alameda and West Hedding Street using the Caltrans version of the CARB EMFAC2017 emissions model, known as CT-EMFAC2017. CT-EMFAC2017 provides emission factors for mobile source criteria pollutants and TACs, including DPM.[15] Emission processes modeled include running exhaust for DPM, $PM_{2.5}$ and total organic compounds (TOG), running evaporative

[15] The CT-EMFAC2017 version was used in the analysis because Caltrans has not yet release a CT-EMFAC version with the updated EMFAC2021 emissions that would provide TAC emission rates.

losses for TOG, and tire and brake wear and fugitive road dust for $PM_{2.5}$. $PM_{2.5}$ 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 the emissions estimate. DPM emissions are projected to decrease in the future as reflected in the CT-EMFAC2017 emissions data. Inputs to the model include region (Santa Clara County), type of road (freeway and major/collector), adjusted for the local truck mix in Santa Clara County (3.51 percent)[16], traffic mix assigned by CT-EMFAC2017 for the county, year of analysis (2023 – construction year), and season (annual).

To estimate TAC and $PM_{2.5}$ emissions over the 30-year exposure period used for calculating the increased cancer risks for sensitive receptors at the MEI, the CT-EMFAC2017 model was used to develop vehicle emission factors for the year 2023 (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, as discussed above, overall vehicle emissions, and in particular diesel truck emissions, will decrease in the future.

Average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,[17] which were then applied to the average daily traffic (ADT) volumes to obtain estimated hourly traffic volumes and emissions for the roadway. Traffic volumes were assumed to increase 1 percent per year for a total of 36,002 vehicles on The Alameda and 15,724 vehicles on West Hedding Street. For all hours of the day, an average speed of 35 mph on The Alameda and 25 mph on West Hedding Street was assumed for all vehicles based on posted speed limit signs on each roadway.

*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.[18] TAC and $PM_{2.5}$ emissions from traffic on each roadway within about 1,000 feet of the project site were evaluated with the model. Emissions from traffic were modeled in AERMOD using a series of volume sources along a line (line volume sources), with line segments used to represent opposing travel lanes on each roadway. The same meteorological data and off-site sensitive receptors used in the previous construction 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 on each roadway were calculated using the model. Concentrations were calculated at the construction MEI with

[16] 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

[17] 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.

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

receptor heights of 5 feet (1.5 meters) and 15 feet (4.5 meters) to represent the breathing heights on the first and second floors of the residences.

*Computed Cancer and Non-Cancer Health Impacts*

The cancer risk, $PM_{2.5}$ concentration, and HI impacts from The Alameda and West Hedding Street on the construction MEI are shown in Table 6. 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 The Alameda and West Hedding Street traffic are provided in *Attachment 5*.

Railways – CalTrain Zone 4

The project MEI is located near Zone 4 of the CalTrain railway. Railway health risk screening data provided by BAAQMD was incorporated into this analysis. BAAQMD developed raster files with cancer risk and $PM_{2.5}$ values for all highways/freeways, roadways (ADT > 30,000), and rail lines within the Bay Area. These raster files were used to screen Zone 4 of the CalTrain railway risks and hazards upon the project site. The risk values shown in the raster files were modeled using AERMOD and a 20x20-meter emissions grid. The raster file uses EMFAC2014 data for fleet mix and include the OEHHA 2015 factor.

The railway screening level impacts are listed in Table 5 and included in Attachment 5. Note that the cancer risk value is not adjusted for age sensitivity or exposure duration. It is conservatively higher than adjusted cancer risk values. Refined modeling of the railway would have resulted in even lower risk values. Note that BAAQMD has found that non-cancer hazards were found to be minimal, so an HI value is not included.

BAAQMD Permitted Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2020* geographic information system (GIS) map website.[19] This mapping tool identifies the location of nearby stationary sources and their estimated risk and hazard impacts. Two sources were identified using this tool, one gas dispensing facility and one petroleum products wholesaler with no data provided for the source type. A Stationary Source Information Form (SSIF) containing the identified sources was prepared and submitted to BAAQMD. BAAQMD provided updated emissions data and risk values as well as the maximum annual throughput for the gas station.

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

[19] BAAQMD, *Stationary Source Screening Map*, 2022. Web: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3

Summary of Cumulative Health Risk Impact at Construction MEIs

Table 6 reports both the project and cumulative health risk impacts at the sensitive receptors most affected by construction (i.e., the MEI). The project would have an exceedance with respect to health risk caused by project construction since the unmitigated maximum cancer risk and annual $PM_{2.5}$ concentration exceed the BAAQMD single-source threshold. However, with the implementation of *Mitigation Measure AQ-1 and AQ-2*, the cancer risk and annual $PM_{2.5}$ concentration no longer exceed the single-source significance thresholds. Hazard index, unmitigated and mitigated, from construction activities at the MEI location does not exceed the BAAQMD single-source significance thresholds. Without mitigation, the cancer risk, annual $PM_{2.5}$ concentration, and HI do not exceed the cumulative-source thresholds.

**Table 6. Impacts from Combined Sources at Construction MEIs**

| Source | | Cancer Risk (per million) | Annual $PM_{2.5}$ ($\mu g/m^3$) | Hazard Index |
|---|---|---|---|---|
| **Project Impacts** | | | | |
| Project Construction | Unmitigated | **20.80 (infant)** | **0.36** | 0.02 |
| | Mitigated | 6.95 (infant) | 0.15 | 0.01 |
| ***BAAQMD Single-Source Threshold*** | | ***10*** | ***0.3*** | ***1.0*** |
| ***Exceed Threshold?*** | Unmitigated | ***Yes*** | ***Yes*** | *No* |
| | Mitigated | *No* | *No* | *No* |
| **Cumulative Sources** | | | | |
| CalTrain Zone 4 | | 20.67 | 0.04 | - |
| The Alameda, ADT 36,002 | | 0.19 | 0.01 | <0.01 |
| West Hedding Street, ADT 15,724 | | 0.64 | 0.05 | <0.01 |
| Golden Gate Petroleum Company (Facility ID #18418, Gas Dispensing Facility), MEIs at 1000+ feet | | - | 0.09 | - |
| Wattis Construction Co Inc (Facility ID #109919_1, Gas Dispensing Facility), MEIs at 1000+ feet | | <0.01 | - | <0.01 |
| *Combined Sources* | Unmitigated | 42.31 | 0.55 | 0.05 |
| | Mitigated | 28.46 | 0.34 | 0.04 |
| ***BAAQMD Cumulative Source Threshold*** | | ***100*** | ***0.8*** | ***10.0*** |
| **Exceed Threshold?** | Unmitigated | *No* | *No* | *No* |
| | Mitigated | *No* | *No* | *No* |

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

Implement a feasible plan to reduce DPM emissions by 60 percent such that increased cancer risk and annual $PM_{2.5}$ concentrations from construction would be reduced below TAC significance levels 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 emission standards for PM ($PM_{10}$ 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 60 percent reduction in particulate matter exhaust in comparison to uncontrolled equipment; alternatively (or in combination).

b. Use of electrical welders during construction of the new academic building and new administration building.

c. Use of other electrical or non-diesel fueled equipment.

2. Alternatively, the applicant may develop another construction operations plan demonstrating that the construction equipment used on-site would achieve a reduction in construction diesel particulate matter emissions by 60 percent or greater. Elements of the plan could include a combination of some of the following measures:
   - Implementation of No. 1 above to use Tier 4 or alternatively fueled equipment,
   - Installation of electric power lines during early construction phases to avoid use of diesel generators and compressors,
   - Use of electrically-powered equipment,
   - Forklifts and aerial lifts used for exterior and interior building construction shall be electric or propane/natural gas powered,
   - Change in construction build-out plans to lengthen phases, and
   - Implementation of different building techniques that result in less diesel equipment usage.

   Such a construction operations plan would be subject to review by an air quality expert and approved by the City prior to construction.

*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 Interim engine standards and BAAQMD best management practices for construction were included. With these implemented, the project's construction cancer risk levels (assuming infant exposure) would be reduced by 67 percent to 6.97 chances per million and the annual $PM_{2.5}$ concentration would be reduced by 58 percent to 0.15 ug/$m^3$. Assuming a level of mitigation that achieves a 60-percent reduction in the project's DPM emissions, increased cancer risks would be reduced to below 10 chances per million and the annual $PM_{2.5}$ concentration would be reduced to below 0.3 ug/$m^3$. As a result, the project's construction risks would be reduced below the BAAQMD single-source thresholds.

**Non-CEQA: On-campus Community Risk Assessment for TAC Sources – Students in Existing School Buildings**

A health risk assessment was completed to determine the impact that construction TAC sources would have on the existing students at Bellarmine College Preparatory. Based on the construction schedules provided by the applicant, it appears that students would be present during some periods of project construction in the buildings near the construction area. For this analysis, a worst-case scenario was assumed that students would be present and attending class during the time of project construction.

Construction Dispersion Modeling

The construction analysis for the school students was conducted in the same manner as described above for the off-site MEI. However, risk calculations were computed using school student adjustment factors instead of residential adjustment factors, see Attachment 4. The project site and on-campus receptors are shown in Figure 3.

Summary of Construction Health Risk Impacts

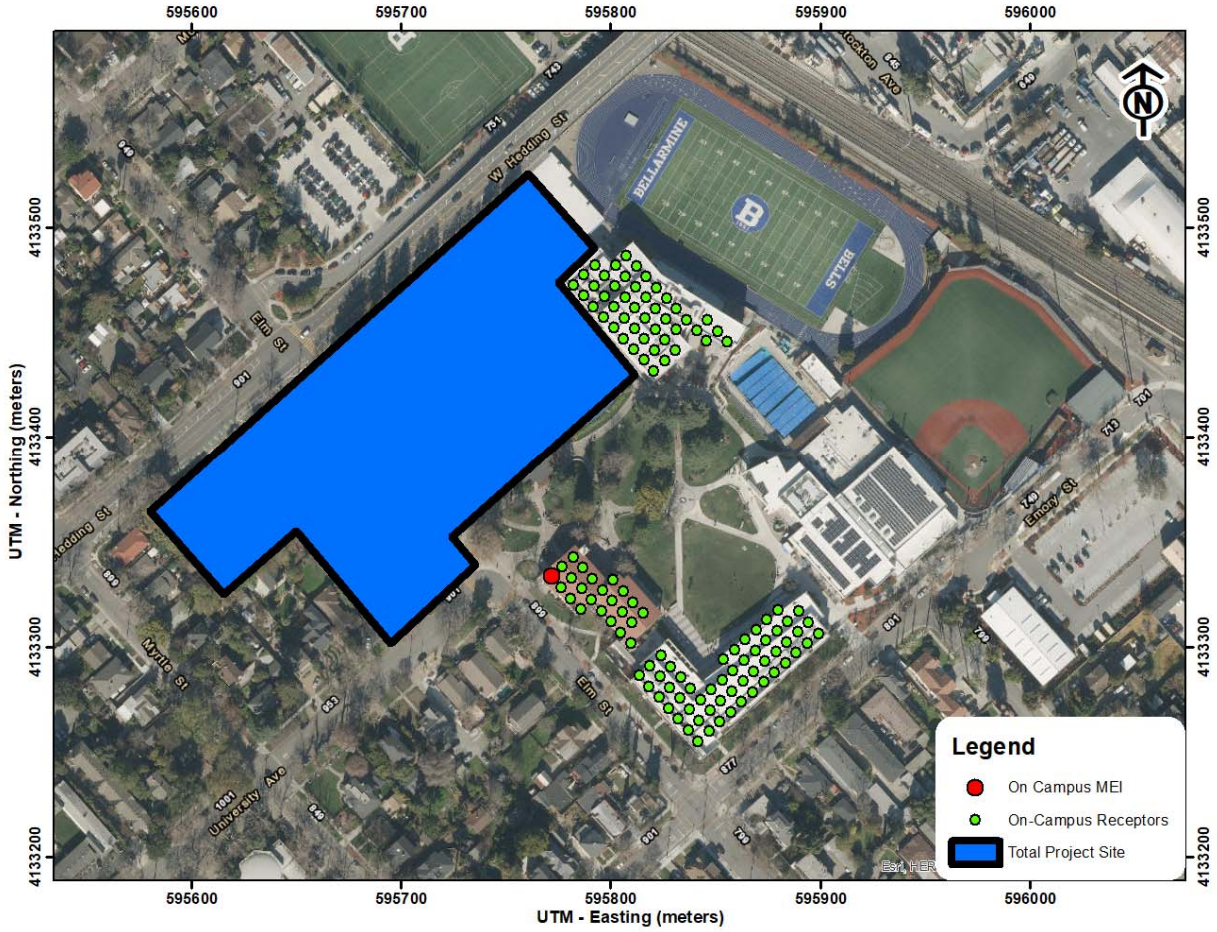
The maximum-modeled annual DPM and $PM_{2.5}$ concentrations were identified at nearby sensitive receptors (as shown in Figure 3) to find the maximally exposed individuals (MEI). Results of this assessment indicated that the on-campus construction MEI is located on the first floor (5 feet) of the Carney Science Center. Table 9 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities affecting the on-campus MEIs. *Attachment 4* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

As shown in Table 7, the unmitigated maximum cancer risks from construction activities upon students at the on-campus MEI exceeds the BAAQMD single-source significance thresholds. However, with implementation of *Mitigation Measure AQ-1 and AQ-2*, the cancer risk no longer exceeds the single-source threshold. The annual $PM_{2.5}$ concentration and hazard index do not exceed the single-source significance thresholds with or without mitigation.

**Table 7. Impacts from Combined Sources to On Campus Receptors**

| Source | | Cancer Risk (per million) | Annual $PM_{2.5}$ ($\mu g/m^3$) | Hazard Index |
|---|---|---|---|---|
| **Project Impacts** | | | | |
| Project Construction | Unmitigated | **15.76 (child)** | 0.22 | 0.02 |
| | Mitigated | 4.43 (child) | 0.10 | 0.01 |
| ***BAAQMD Single-Source Threshold*** | | ***10*** | ***0.3*** | ***1.0*** |
| ***Exceed Threshold?*** | Unmitigated | ***Yes*** | *No* | *No* |
| | Mitigated | *No* | *No* | *No* |

**Figure 3. Locations of Project Site, On-Campus Student Receptors, and Maximum TAC Impacts**



## Supporting Documentation

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

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

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

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

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

## Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[20] 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.[21] 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.[22] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

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

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

[20] 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.
[21] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[22] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment ( HRA) Guidelines*. December 2016.

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

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

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

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

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

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

Where:

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

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

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

Non-Cancer Hazards

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

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

Annual $PM_{2.5}$ Concentrations

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

# Attachment 2: CalEEMod Modeling Inputs and Outputs

# Air Quality/Noise Construction Information Data Request

**Project Name:** Bellarmine College Preparatory Berchman's Hall Relocation

**Complete ALL Portions in Yellow**

See Equipment Type TAB for type, horsepower and load factor

**Project Size**
1 Dwelling Units
1 total project acres disturbed
5030 s.f. residential
0 s.f. retail
1223 s.f. office/commercial
0 s.f. other, specify:
0 s.f. parking garage
0 spaces
20000 s.f. parking lot
24 spaces
**Construction Days** ____ to ____
**Construction Hours** 7:00 am to 7:00 pm

**Pile Driving? No pile driving is proposed**

**Project include on-site GENERATOR OR FIRE PUMP during project OPERATION (not construction)? __N__**
IF YES (if BOTH separate values) -->
Kilowatts/Horsepower: _____
Fuel Type: _____
Location in project (Plans Desired if Available):

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

| Quantity | Description | HP | Load Factor | Hours/day | Total Work Days | Avg. Hours per day | HP Annual Hours | Comments |
|---|---|---|---|---|---|---|---|---|
| | **Demolition** | **Start Date:** | | **Total phase:** | | | | **Overall Import/Export Volumes** |
| | | **End Date:** | | | | | | |
| | Concrete/Industrial Saws | 81 | 0.73 | | | #DIV/0! | 0 | **Demolition Volume** |
| | Excavators | 158 | 0.38 | | | #DIV/0! | 0 | Square footage of buildings to be demolished |
| | Rubber-Tired Dozers | 247 | 0.4 | | | #DIV/0! | 0 | (*or* total tons to be hauled) |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | #DIV/0! | 0 | **_?_** square feet *or* |
| | *Other Equipment?* | | | | | | | **_?_** Hauling volume (tons) |
| | | | | | | | | Any pavement demolished and hauled? **_?_ tons** |
| | **Site Preparation** | **Start Date:** | **10/15/2023** | **Total phase:** | **13** | | | |
| | | **End Date:** | **11/1/2023** | | | | | |
| 1 | Graders | 187 | 0.41 | 8 | 3 | 1.8461538 | 1840 | |
| 1 | Rubber Tired Dozers | 247 | 0.4 | 8 | 5 | 3.0769231 | 3952 | |
| 1 | Tractors/Loaders/Backhoes | 97 | 0.37 | 8 | 8 | 4.9230769 | 2297 | |
| | *Other Equipment?* | | | 8 | | | | |
| | **Grading / Excavation** | **Start Date:** | | **Total phase:** | | | | |
| | | **End Date:** | | | | | | **Soil Hauling Volume** |
| | Excavators | 158 | 0.38 | | | #DIV/0! | 0 | Export volume = **_?_** cubic yards? |
| | Graders | 187 | 0.41 | | | #DIV/0! | 0 | Import volume = **_?_** cubic yards? |
| | Rubber Tired Dozers | 247 | 0.4 | | | #DIV/0! | 0 | |
| | Concrete/Industrial Saws | 81 | 0.73 | | | #DIV/0! | 0 | |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | #DIV/0! | 0 | |
| | *Other Equipment?* | | | | | | | |
| | **Trenching/Foundation** | **Start Date:** | **11/1/2023** | **Total phase:** | **11** | | | |
| | | **End Date:** | **11/15/2023** | | | | | |
| 1 | Tractor/Loader/Backhoe | 97 | 0.37 | 8 | 10 | 7.2727273 | 2871 | |
| 2 | Excavators | 158 | 0.38 | 8 | 10 | 7.2727273 | 9606 | |
| | *Other Equipment?* | | | | | | | |
| | **Building - Exterior** | **Start Date:** | | **Total phase:** | | | | **Cement Trucks? _?_ Total Round-Trips** |
| | | **End Date:** | | | | | | |
| | Cranes | 231 | 0.29 | | | #DIV/0! | 0 | Electric? (Y/N) Otherwise assumed diesel |
| | Forklifts | 89 | 0.2 | | | #DIV/0! | 0 | Liquid Propane (LPG)? (Y/N) Otherwise Assumed diesel |
| | Generator Sets | 84 | 0.74 | | | #DIV/0! | 0 | Or temporary line power? (Y/N) |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | #DIV/0! | 0 | |
| | Welders | 46 | 0.45 | | | #DIV/0! | 0 | |
| | *Other Equipment?* | | | | | | | |
| | **Building - Interior/Architectural Coating** | **Start Date:** | | **Total phase:** | | | | |
| | | **End Date:** | | | | | | |
| | Air Compressors | 78 | 0.48 | | | #DIV/0! | 0 | |
| | Aerial Lift | 62 | 0.31 | | | #DIV/0! | 0 | |
| | *Other Equipment?* | | | | | | | |
| | **Paving** | **Start Date:** | | **Total phase:** | | | | |
| | | **Start Date:** | | | | | | |
| | Cement and Mortar Mixers | 9 | 0.56 | | | #DIV/0! | 0 | |
| | Pavers | 130 | 0.42 | | | #DIV/0! | 0 | **Asphalt? ___ cubic yards or ____ round trips?** |
| | Paving Equipment | 132 | 0.36 | | | #DIV/0! | 0 | |
| | Rollers | 80 | 0.38 | | | #DIV/0! | 0 | |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | #DIV/0! | 0 | |
| | *Other Equipment?* | | | | | | | |
| | **Additional Phases** | **Start Date:** | | **Total phase:** | | | | |
| | | **Start Date:** | | | | | | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |

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

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

**Complete one sheet for each project component**

It is assumed that water trucks would be used during grading

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

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

# Air Quality/Noise Construction Information Data Request

**Project Name:** Bellarmine College Preparatory Wade Academic Hall

**Complete ALL Portions in Yellow**

See Equipment Type TAB for type, horsepower and load factor

**Project Size**
- 0 Dwelling Units
- 2.5 total project acres disturbed
- 0 s.f. residential
- 0 s.f. retail
- 3471 s.f. office/commercial
- 41,653 s.f. other, specify: Educational Classrooms
- 0 s.f. parking garage — 0 spaces
- 32675 s.f. parking lot — 49 spaces

**Construction Days** ____ to ____

**Construction Hours** 7:00 am to 7:00 pm

**Pile Driving? Y/N?**

**Project include on-site GENERATOR OR FIRE PUMP during project OPERATION (not construction)? Y/N? ____**

IF YES (if BOTH separate values) -->

Kilowatts/Horsepower: _____

Fuel Type: _____

Location in project (Plans Desired if Available):

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

| Quantity | Description | HP | Load Factor | Hours/day | Total Work Days | Avg. Hours per day | HP Annual Hours | Comments |
|---|---|---|---|---|---|---|---|---|
| | **Demolition** | **Start Date:** | **11/15/2023** | **Total phase:** | **15** | | | **Overall Import/Export Volumes** |
| | | **End Date:** | **12/5/2023** | | | | | |
| 1 | Concrete/Industrial Saws | 81 | 0.73 | 8 | 5 | 2.6666667 | 2365 | **Demolition Volume** |
| 3 | Excavators | 158 | 0.38 | 8 | 15 | 8 | 21614 | Square footage of buildings to be demolished |
| 0 | Rubber-Tired Dozers | 247 | 0.4 | 0 | 0 | 0 | 0 | (*or* total tons to be hauled) |
| 1 | Tractors/Loaders/Backhoes | 97 | 0.37 | 8 | 15 | 8 | 4307 | **22,287** square feet *or* |
| | *Other Equipment?* | | | | | 0 | | **?** Hauling volume (tons) |
| | | | | | | | | Any pavement demolished and hauled? **?** **tons** |
| | **Site Preparation** | **Start Date:** | **12/6/2023** | **Total phase:** | **5** | | | |
| | | **End Date:** | **12/12/2023** | | | | | |
| 1 | Graders | 187 | 0.41 | 8 | 5 | 8 | 3067 | |
| 1 | Rubber Tired Dozers | 247 | 0.4 | 8 | 5 | 8 | 3952 | |
| 1 | Tractors/Loaders/Backhoes | 97 | 0.37 | 8 | 5 | 8 | 1436 | |
| | *Other Equipment?* | | | 8 | | | | |
| | **Grading / Excavation** | **Start Date:** | **12/15/2023** | **Total phase:** | **12** | | | |
| | | **End Date:** | **1/1/2024** | | | | | **Soil Hauling Volume** |
| 1 | Excavators | 158 | 0.38 | 8 | 10 | 6.6666667 | 4803 | Export volume = **3000** cubic yards? |
| 1 | Graders | 187 | 0.41 | 8 | 12 | 8 | 7360 | Import volume = **?** cubic yards? |
| 1 | Rubber Tired Dozers | 247 | 0.4 | 8 | 10 | 6.6666667 | 7904 | |
| 0 | Concrete/Industrial Saws | 81 | 0.73 | 8 | | 0 | 0 | |
| 1 | Tractors/Loaders/Backhoes | 97 | 0.37 | 8 | 12 | 8 | 3445 | |
| | *Other Equipment?* | | | | | | | |
| | **Trenching/Foundation** | **Start Date:** | **1/1/2024** | **Total phase:** | **30** | | | |
| | | **End Date:** | **2/9/2024** | | | | | |
| 1 | Tractor/Loader/Backhoe | 97 | 0.37 | 8 | 15 | 4 | 4307 | |
| 2 | Excavators | 158 | 0.38 | 8 | 20 | 5.3333333 | 19213 | |
| | *Other Equipment?* | | | | | | | |
| | **Building - Exterior** | **Start Date:** | **2/15/2024** | **Total phase:** | **132** | | | **Cement Trucks? _260_ Total Round-Trips** |
| | | **End Date:** | **8/16/2024** | | | | | |
| 1 | Cranes | 231 | 0.29 | 8 | 88 | 5.3333333 | 47161 | Electric? (Y/N) Otherwise assumed diesel |
| 1 | Forklifts | 89 | 0.2 | 8 | 60 | 3.6363636 | 8544 | Liquid Propane (LPG)? (Y/N) Otherwise Assumed diesel |
| 0 | Generator Sets | 84 | 0.74 | | | 0 | 0 | Or temporary line power? (Y/N) |
| 0 | Tractors/Loaders/Backhoes | 97 | 0.37 | | | 0 | 0 | |
| 3 | Welders | 46 | 0.45 | 8 | 66 | 4 | 32789 | |
| | *Other Equipment?* | | | | | | | |
| | **Building - Interior/Architectural Coating** | **Start Date:** | **8/15/2024** | **Total phase:** | **244** | | | |
| | | **End Date:** | **7/22/2025** | | | | | |
| 1 | Air Compressors | 78 | 0.48 | 8 | 160 | 5.2459016 | 47923 | |
| 2 | Aerial Lift | 62 | 0.31 | 8 | 220 | 7.2131148 | 67654 | |
| | *Other Equipment?* | | | | | | | |
| | **Paving** | **Start Date:** | **6/1/2025** | **Total phase:** | **10** | | | |
| | | **Start Date:** | **6/13/2025** | | | | | |
| | Cement and Mortar Mixers | 9 | 0.56 | | | 0 | 0 | |
| 1 | Pavers | 130 | 0.42 | 8 | 3 | 2.4 | 1310 | **Asphalt? __1900_ tons or __95__ round trips?** |
| 1 | Paving Equipment | 132 | 0.36 | 8 | 3 | 2.4 | 1140 | |
| 1 | Rollers | 80 | 0.38 | 8 | 3 | 2.4 | 730 | |
| 1 | Tractors/Loaders/Backhoes | 97 | 0.37 | 8 | 3 | 2.4 | 861 | |
| | *Other Equipment?* | | | | | | | |
| | **Additional Phases** | **Start Date:** | | **Total phase:** | | | | |
| | | **Start Date:** | | | | | | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |

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

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

It is assumed that water trucks would be used during grading

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

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

**Complete one sheet for each project component**

# Air Quality/Noise Construction Information Data Request

**Project Name:** Bellarmine College Preparatory New Classroom & Administration Bu

**Complete ALL Portions in Yellow**

See Equipment Type TAB for type, horsepower and load factor

| | | | |
|---|---|---|---|
| **Project Size** | 0 | Dwelling Units | 0.9 total project acres disturbed |
| | 0 | s.f. residential | |
| | 0 | s.f. retail | |
| | 14438 | s.f. office/commercial | |
| | 8,840 | s.f. other, specify: | Educational Classrooms |
| | 0 | s.f. parking garage | 0 spaces |
| | 32675 | s.f. parking lot | 49 spaces |
| **Construction Days** | | to | |
| **Construction Hours** | 7:00 am | to | 7:00 pm |

**Pile Driving? Y/N?**

**Project include on-site GENERATOR OR FIRE PUMP during project OPERATION (not construction)? Y/N? ____**

**IF YES (if BOTH separate values) -->**

**Kilowatts/Horsepower: _____**

**Fuel Type: _____**

**Location in project (Plans Desired if Available):**

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

| Quantity | Description | HP | Load Factor | Hours/day | Total Work Days | Avg. Hours per day | HP Annual Hours | Comments |
|---|---|---|---|---|---|---|---|---|
| | **Demolition** | **Start Date:** | **10/1/2025** | **Total phase:** | **45** | | | **Overall Import/Export Volumes** |
| | | **End Date:** | **12/2/2025** | | | | | |
| 1 | Concrete/Industrial Saws | 81 | 0.73 | 8 | 5 | 0.8888889 | 2365 | **Demolition Volume** |
| 3 | Excavators | 158 | 0.38 | 8 | 30 | 5.3333333 | 43229 | Square footage of buildings to be demolished |
| 0 | Rubber-Tired Dozers | 247 | 0.4 | 8 | 0 | 0 | 0 | (*or* total tons to be hauled) |
| 2 | Tractors/Loaders/Backhoes | 97 | 0.37 | 8 | 2 | 0.3555556 | 1148 | **45700 sf** square feet *or* |
| | *Other Equipment?* | | | | | 0 | | **0 tons** Hauling volume (tons) |
| | | | | | | | | Any pavement demolished and hauled? **0 tons** |
| | **Site Preparation** | **Start Date:** | **12/6/2025** | **Total phase:** | **5** | | | |
| | | **End Date:** | **12/12/2025** | | | | | |
| 1 | Graders | 187 | 0.41 | 8 | 5 | 8 | 3067 | |
| 1 | Rubber Tired Dozers | 247 | 0.4 | 8 | 5 | 8 | 3952 | |
| 1 | Tractors/Loaders/Backhoes | 97 | 0.37 | 8 | 5 | 8 | 1436 | |
| | *Other Equipment?* | | | 8 | | | | |
| | **Grading / Excavation** | **Start Date:** | **12/15/2025** | **Total phase:** | **12** | | | |
| | | **End Date:** | **12/30/2025** | | | | | **Soil Hauling Volume** |
| 1 | Excavators | 158 | 0.38 | 8 | 10 | 6.6666667 | 4803 | Export volume = **3,000** cubic yards? |
| 1 | Graders | 187 | 0.41 | 8 | 10 | 6.6666667 | 6134 | Import volume = **0** cubic yards? |
| 1 | Rubber Tired Dozers | 247 | 0.4 | 8 | 10 | 6.6666667 | 7904 | |
| 0 | Concrete/Industrial Saws | 81 | 0.73 | 8 | | 0 | 0 | |
| 1 | Tractors/Loaders/Backhoes | 97 | 0.37 | 8 | 10 | 6.6666667 | 2871 | |
| | *Other Equipment?* | | | | | | | |
| | **Trenching/Foundation** | **Start Date:** | **1/1/2026** | **Total phase:** | **30** | | | |
| | | **End Date:** | **2/11/2026** | | | | | |
| 1 | Tractor/Loader/Backhoe | 97 | 0.37 | 8 | 15 | 4 | 4307 | |
| 2 | Excavators | 158 | 0.38 | 8 | 20 | 5.3333333 | 19213 | |
| | *Other Equipment?* | | | | | | | |
| | **Building - Exterior** | **Start Date:** | **2/15/2026** | **Total phase:** | **88** | | | **Cement Trucks? 104 Total Round-Trips** |
| | | **End Date:** | **6/17/2026** | | | | | |
| 1 | Cranes | 231 | 0.29 | 8 | 44 | 4 | 23580 | Electric? (Y/N) Otherwise assumed diesel |
| 1 | Forklifts | 89 | 0.2 | 8 | 44 | 4 | 6266 | Liquid Propane (LPG)? (Y/N) Otherwise Assumed diesel |
| 0 | Generator Sets | 84 | 0.74 | | | 0 | 0 | Or temporary line power? (Y/N) |
| 0 | Tractors/Loaders/Backhoes | 97 | 0.37 | | | 0 | 0 | |
| 3 | Welders | 46 | 0.45 | 8 | 44 | 4 | 21859 | |
| | *Other Equipment?* | | | | | | | |
| | **Building - Interior/Architectural Coating** | **Start Date:** | **6/15/2026** | **Total phase:** | **132** | | | |
| | | **End Date:** | **12/15/2026** | | | | | |
| 1 | Air Compressors | 78 | 0.48 | 8 | 100 | 6.0606061 | 29952 | |
| 2 | Aerial Lift | 62 | 0.31 | 8 | 132 | 8 | 40593 | |
| | *Other Equipment?* | | | | | | | |
| | **Paving** | **Start Date:** | **10/15/2026** | **Total phase:** | **10** | | | |
| | | **Start Date:** | **10/28/2026** | | | | | |
| | Cement and Mortar Mixers | 9 | 0.56 | | | 0 | 0 | |
| 1 | Pavers | 130 | 0.42 | 8 | 3 | 2.4 | 1310 | **Asphalt 1,200 tons or 60_ round trips** |
| 1 | Paving Equipment | 132 | 0.36 | 8 | 3 | 2.4 | 1140 | |
| 1 | Rollers | 80 | 0.38 | 8 | 3 | 2.4 | 730 | |
| 1 | Tractors/Loaders/Backhoes | 97 | 0.37 | 8 | 3 | 2.4 | 861 | |
| | *Other Equipment?* | | | | | | | |
| | **Additional Phases** | **Start Date:** | | **Total phase:** | | | | |
| | | **Start Date:** | | | | | | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |

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

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

**Complete one sheet for each project component**

It is assumed that water trucks would be used during grading

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

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

# Air Quality/Noise Construction Information Data Request

**Project Name:** Bellarmine College Preparatory Liccardo Renovation

**Complete ALL Portions in Yellow**

See Equipment Type TAB for type, horsepower and load factor

**Project Size**
- 0 Dwelling Units
- 0.75 total project acres disturbed
- 0 s.f. residential
- 0 s.f. retail
- 0 s.f. office/commercial
- 22,661 s.f. other, specify: Educational Facility
- 0 s.f. parking garage — 0 spaces
- 0 s.f. parking lot — 0 spaces

**Construction Days** ____ to ____

**Construction Hours** 7:00 am to 7:00 pm

**Pile Driving? No pile driving is proposed**

**Project include on-site GENERATOR OR FIRE PUMP during project OPERATION (not construction)? __N__**

IF YES (if BOTH separate values) -->

Kilowatts/Horsepower: _____

Fuel Type: _____

Location in project (Plans Desired if Available):

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

| Quantity | Description | HP | Load Factor | Hours/day | Total Work Days | Avg. Hours per day | HP Annual Hours | Comments |
|---|---|---|---|---|---|---|---|---|
| | **Demolition** | **Start Date:** | | **Total phase:** | | | | **Overall Import/Export Volumes** |
| | | **End Date:** | | | | | | |
| | Concrete/Industrial Saws | 81 | 0.73 | | | #DIV/0! | 0 | **Demolition Volume** |
| | Excavators | 158 | 0.38 | | | #DIV/0! | 0 | Square footage of buildings to be demolished |
| | Rubber-Tired Dozers | 247 | 0.4 | | | #DIV/0! | 0 | (*or* total tons to be hauled) |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | #DIV/0! | 0 | _?_ square feet *or* |
| | *Other Equipment?* | | | | | | | _?_ Hauling volume (tons) |
| | | | | | | | | Any pavement demolished and hauled? _?_ tons |
| | **Site Preparation** | **Start Date:** | | **Total phase:** | | | | |
| | | **End Date:** | | | | | | |
| | Graders | 187 | 0.41 | | | #DIV/0! | 0 | |
| | Rubber Tired Dozers | 247 | 0.4 | | | #DIV/0! | 0 | |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | #DIV/0! | 0 | |
| | *Other Equipment?* | | | | | | | |
| | **Grading / Excavation** | **Start Date:** | | **Total phase:** | | | | |
| | | **End Date:** | | | | | | **Soil Hauling Volume** |
| | Excavators | 158 | 0.38 | | | #DIV/0! | 0 | Export volume = _?_ cubic yards? |
| | Graders | 187 | 0.41 | | | #DIV/0! | 0 | Import volume = _?_ cubic yards? |
| | Rubber Tired Dozers | 247 | 0.4 | | | #DIV/0! | 0 | |
| | Concrete/Industrial Saws | 81 | 0.73 | | | #DIV/0! | 0 | |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | #DIV/0! | 0 | |
| | *Other Equipment?* | | | | | | | |
| | **Trenching/Foundation** | **Start Date:** | | **Total phase:** | | | | |
| | | **End Date:** | | | | | | |
| | Tractor/Loader/Backhoe | 97 | 0.37 | | | #DIV/0! | 0 | |
| | Excavators | 158 | 0.38 | | | #DIV/0! | 0 | |
| | *Other Equipment?* | | | | | | | |
| | **Building - Exterior** | **Start Date:** | | **Total phase:** | | | | **Cement Trucks? _?_ Total Round-Trips** |
| | | **End Date:** | | | | | | |
| | Cranes | 231 | 0.29 | | | #DIV/0! | 0 | Electric? (Y/N) Otherwise assumed diesel |
| | Forklifts | 89 | 0.2 | | | #DIV/0! | 0 | Liquid Propane (LPG)? (Y/N) Otherwise Assumed diesel |
| | Generator Sets | 84 | 0.74 | | | #DIV/0! | 0 | Or temporary line power? (Y/N) |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | #DIV/0! | 0 | |
| | Welders | 46 | 0.45 | | | #DIV/0! | 0 | |
| | *Other Equipment?* | | | | | | | |
| | **Building - Interior/Architectural Coating** | **Start Date:** | 1/1/2026 | **Total phase:** | 152 | | | |
| | | **End Date:** | 8/1/2026 | | | | | |
| 1 | Air Compressors | 78 | 0.48 | 8 | 10 | 0.5263158 | 2995 | |
| 1 | Aerial Lift | 62 | 0.31 | 8 | 40 | 2.1052632 | 6150 | |
| | *Other Equipment?* | | | | | | | |
| | **Paving** | **Start Date:** | | **Total phase:** | | | | |
| | | **Start Date:** | | | | | | |
| | Cement and Mortar Mixers | 9 | 0.56 | | | #DIV/0! | 0 | |
| | Pavers | 130 | 0.42 | | | #DIV/0! | 0 | **Asphalt? ___ cubic yards or ____ round trips?** |
| | Paving Equipment | 132 | 0.36 | | | #DIV/0! | 0 | |
| | Rollers | 80 | 0.38 | | | #DIV/0! | 0 | |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | #DIV/0! | 0 | |
| | *Other Equipment?* | | | | | | | |
| | **Additional Phases** | **Start Date:** | | **Total phase:** | | | | |
| | | **Start Date:** | | | | | | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |

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

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

It is assumed that water trucks would be used during grading

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

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

**Complete one sheet for each project component**

# Air Quality/Noise Construction Information Data Request

**Project Name:** **Bellarmine College Preparatory Matthewson Renovation**

**Complete ALL Portions in Yellow**

See Equipment Type TAB for type, horsepower and load factor

**Project Size**
- 0 Dwelling Units
- 0.5 total project acres disturbed
- 0 s.f. residential
- 0 s.f. retail
- 9430 s.f. office/commercial
- 9,430 s.f. other, specify: Educational Classrooms
- 0 s.f. parking garage — 0 spaces
- 7000 s.f. parking lot — 22 spaces

**Construction Days** ____ to ____

**Construction Hours** 7:00 am to 7:00 pm

**Pile Driving? No pile driving is proposed**

**Project include on-site GENERATOR OR FIRE PUMP during project OPERATION (not construction)? __N__**

IF YES (if BOTH separate values) -->

Kilowatts/Horsepower: _____

Fuel Type: _____

Location in project (Plans Desired if Available):

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

| Quantity | Description | HP | Load Factor | Hours/day | Total Work Days | Avg. Hours per day | HP Annual Hours | Comments |
|---|---|---|---|---|---|---|---|---|
| | **Demolition** | **Start Date:** | | **Total phase:** | | | | **Overall Import/Export Volumes** |
| | | **End Date:** | | | | | | |
| | Concrete/Industrial Saws | 81 | 0.73 | | | #DIV/0! | 0 | **Demolition Volume** |
| | Excavators | 158 | 0.38 | | | #DIV/0! | 0 | Square footage of buildings to be demolished |
| | Rubber-Tired Dozers | 247 | 0.4 | | | #DIV/0! | 0 | (*or* total tons to be hauled) |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | #DIV/0! | 0 | **_?_** square feet *or* |
| | *Other Equipment?* | | | | | | | **_?_** Hauling volume (tons) |
| | | | | | | | | Any pavement demolished and hauled? **_?_ tons** |
| | **Site Preparation** | **Start Date:** | | **Total phase:** | | | | |
| | | **End Date:** | | | | | | |
| | Graders | 187 | 0.41 | | | #DIV/0! | 0 | |
| | Rubber Tired Dozers | 247 | 0.4 | | | #DIV/0! | 0 | |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | #DIV/0! | 0 | |
| | *Other Equipment?* | | | | | | | |
| | **Grading / Excavation** | **Start Date:** | | **Total phase:** | | | | |
| | | **End Date:** | | | | | | **Soil Hauling Volume** |
| | Excavators | 158 | 0.38 | | | #DIV/0! | 0 | Export volume = **_?_** cubic yards? |
| | Graders | 187 | 0.41 | | | #DIV/0! | 0 | Import volume = **_?_** cubic yards? |
| | Rubber Tired Dozers | 247 | 0.4 | | | #DIV/0! | 0 | |
| | Concrete/Industrial Saws | 81 | 0.73 | | | #DIV/0! | 0 | |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | #DIV/0! | 0 | |
| | *Other Equipment?* | | | | | | | |
| | **Trenching/Foundation** | **Start Date:** | | **Total phase:** | | | | |
| | | **End Date:** | | | | | | |
| | Tractor/Loader/Backhoe | 97 | 0.37 | | | #DIV/0! | 0 | |
| | Excavators | 158 | 0.38 | | | #DIV/0! | 0 | |
| | *Other Equipment?* | | | | | | | |
| | **Building - Exterior** | **Start Date:** | | **Total phase:** | | | | **Cement Trucks? _?_ Total Round-Trips** |
| | | **End Date:** | | | | | | |
| | Cranes | 231 | 0.29 | | | #DIV/0! | 0 | Electric? (Y/N) Otherwise assumed diesel |
| | Forklifts | 89 | 0.2 | | | #DIV/0! | 0 | Liquid Propane (LPG)? (Y/N) Otherwise Assumed diesel |
| | Generator Sets | 84 | 0.74 | | | #DIV/0! | 0 | Or temporary line power? (Y/N) |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | #DIV/0! | 0 | |
| | Welders | 46 | 0.45 | | | #DIV/0! | 0 | |
| | *Other Equipment?* | | | | | | | |
| | **Building - Interior/Architectural Coating** | **Start Date:** | 1/1/2027 | **Total phase:** | 152 | | | |
| | | **End Date:** | 8/1/2027 | | | | | |
| 1 | Air Compressors | 78 | 0.48 | 8 | 25 | 1.3157895 | 7488 | |
| 1 | Aerial Lift | 62 | 0.31 | 8 | 80 | 4.2105263 | 12301 | |
| | *Other Equipment?* | | | | | | | |
| | **Paving** | **Start Date:** | | **Total phase:** | | | | |
| | | **Start Date:** | | | | | | |
| | Cement and Mortar Mixers | 9 | 0.56 | | | #DIV/0! | 0 | |
| | Pavers | 130 | 0.42 | | | #DIV/0! | 0 | **Asphalt? ___ cubic yards or ____ round trips?** |
| | Paving Equipment | 132 | 0.36 | | | #DIV/0! | 0 | |
| | Rollers | 80 | 0.38 | | | #DIV/0! | 0 | |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | #DIV/0! | 0 | |
| | *Other Equipment?* | | | | | | | |
| | **Additional Phases** | **Start Date:** | | **Total phase:** | | | | |
| | | **Start Date:** | | | | | | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |
| | | | | | | #DIV/0! | 0 | |

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

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

It is assumed that water trucks would be used during grading

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

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

**Complete one sheet for each project component**

| Construction Criteria Air Pollutants | | | | | | | |
|---|---|---|---|---|---|---|---|
| *Unmitigated* | ROG | NOX | PM10 Exhaust | PM2.5 Exhaust | PM2.5 Fugitive | **CO2e** | |
| Year | Tons | | | | | MT | |
| Construction Equipment | | | | | | | |
| 2023 | 0.01 | 0.05 | 0.00 | 0.00 | 0.01 | 9.84 | |
| 2024 | 0.18 | 0.66 | 0.03 | 0.03 | 0.03 | 114.34 | |
| 2025 | 0.16 | 0.15 | 0.00 | 0.00 | 0.00 | 37.75 | |
| 2026 | 0.31 | 0.54 | 0.02 | 0.02 | 0.03 | 117.67 | |
| 2027 | 0.10 | 0.04 | 0.00 | 0.00 | 0.00 | 10.04 | |
| *EMFAC* | | | | | | | |
| 2023 | 0.0003 | 0.0002 | 0.00004 | 0.0000 | 0.0001 | 0.6336 | |
| 2024 | 0.0071 | 0.0533 | 0.0036 | 0.0015 | 0.0033 | 46.0679 | |
| 2025 | 0.0033 | 0.0250 | 0.0018 | 0.0007 | 0.0016 | 22.1818 | |
| 2026 | 0.0058 | 0.0514 | 0.0038 | 0.0016 | 0.0031 | 45.9990 | |
| 2027 | 0.0004 | 0.0003 | 0.0001 | 0.0000 | 0.0002 | 0.9088 | |
| *Total Construction Emissions by Year* | | | | | | | |
| 2023 | 0.01 | 0.05 | 0.003 | 0.002 | | 10.47 | |
| 2024 | 0.18 | 0.71 | 0.03 | 0.03 | | 160.41 | |
| 2025 | 0.16 | 0.18 | 0.01 | 0.01 | | 59.93 | |
| 2026 | 0.32 | 0.59 | 0.02 | 0.02 | | 163.66 | |
| 2027 | 0.10 | 0.04 | 0.001 | 0.001 | | 10.95 | |
| | *Total Construction Emissions* | | | | | | |
| Tons | 0.77 | 1.57 | 0.07 | 0.06 | | 405.43 | |
| Pounds/Workdays | *Average Daily Emissions* | | | | | Workdays | |
| 2023 | 0.49 | 4.53 | 0.21 | 0.19 | | | **24** |
| 2024 | 1.23 | 4.80 | 0.21 | 0.18 | | | **296** |
| 2025 | 2.25 | 2.42 | 0.09 | 0.08 | | | **145** |
| 2026 | 2.00 | 3.72 | 0.15 | 0.13 | | | **316** |
| 2027 | 1.36 | 0.52 | 0.02 | 0.02 | | | **152** |
| **Threshold - lbs/day** | **54.0** | **54.0** | **82.0** | **54.0** | | | |
| | *Total Construction Emissions* | | | | | | |
| Pounds | 7.33 | 15.99 | 0.68 | 0.59 | | 0.00 | |
| Average | 1.65 | 3.36 | 0.14 | 0.12 | | 0.00 | 933.00 |
| **Threshold - lbs/day** | **54.0** | **54.0** | **82.0** | **54.0** | | | |

Berchman's Hall Relocation Const - Bellarmine College Prep - Santa Clara County, Annual

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

# Berchman's Hall Relocation Const - Bellarmine College Prep

**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 | 1.22 | 1000sqft | 0.00 | 1,223.00 | 0 |
| Parking Lot | 24.00 | Space | 0.00 | 20,000.00 | 0 |
| Single Family Housing | 1.00 | Dwelling Unit | 1.00 | 5,030.00 | 3 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2024 |
| **Utility Company** | San Jose Clean Energy | | | | |
| **CO2 Intensity (lb/MWhr)** | 178 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

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

Project Characteristics - San Jose Clean Energy 2020 rate = 178 lb/MWh.

Land Use - Total lot acreage and square footage provided by construction worksheet.

Construction Phase - Provided in construction sheet.

Off-road Equipment - Provided by construction sheet.

Off-road Equipment - Provided in construction sheet.

Trips and VMT - EMFAC2021 adjustment 0 trips.

Grading -

Construction Off-road Equipment Mitigation - BMPs, tier 4 interim mitigation.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |

Berchman's Hall Relocation Const - Bellarmine College Prep - 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 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstructionPhase | NumDays | 1.00 | 13.00 |
| tblLandUse | LandUseSquareFeet | 1,220.00 | 1,223.00 |
| tblLandUse | LandUseSquareFeet | 9,600.00 | 20,000.00 |
| tblLandUse | LandUseSquareFeet | 1,800.00 | 5,030.00 |
| tblLandUse | LotAcreage | 0.03 | 0.00 |
| tblLandUse | LotAcreage | 0.22 | 0.00 |
| tblLandUse | LotAcreage | 0.32 | 1.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 1.80 |
| tblOffRoadEquipment | UsageHours | 8.00 | 4.90 |
| tblProjectCharacteristics | CO2IntensityFactor | 807.98 | 178 |
| tblTripsAndVMT | WorkerTripNumber | 8.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 8.00 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Unmitigated Construction**

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

Berchman's Hall Relocation Const - Bellarmine College Prep - Santa Clara County, Annual

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

| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 | 5.54E-03 | 0.0541 | 0.0631 | 1.1000e-004 | 0.0173 | 2.4700e-003 | 0.0198 | 8.5700e-003 | 2.2700e-003 | 0.0108 | 0.0000 | 9.7561 | 9.7561 | 3.1600e-003 | 0.0000 | 9.835 |
| **Maximum** | **5.5400e-003** | **0.0541** | **0.0631** | **1.1000e-004** | **0.0173** | **2.47E-03** | **0.0198** | **8.57E-03** | **2.27E-03** | **0.0108** | **0.0000** | **9.7561** | **9.7561** | **3.1600e-003** | **0.0000** | **9.8350** |

**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 | 1.7700e-003 | 0.0433 | 0.0770 | 1.1000e-004 | 7.7800e-003 | 1.80E-04 | 7.9600e-003 | 3.85E-03 | 1.8000e-004 | 4.0400e-003 | 0.0000 | 9.7561 | 9.7561 | 3.1600e-003 | 0.0000 | 9.8350 |
| **Maximum** | **1.77E-03** | **0.0433** | **0.0770** | **1.1000e-004** | **7.7800e-003** | **1.8000e-004** | **7.9600e-003** | **3.8500e-003** | **1.8000e-004** | **4.0400e-003** | **0.0000** | **9.7561** | **9.7561** | **3.1600e-003** | **0.0000** | **9.8350** |

| | ROG | NOx | 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** | **68.05** | **20.07** | **-22.00** | **0.00** | **54.98** | **92.71** | **59.70** | **55.08** | **92.07** | **62.73** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| | | Highest | | |

## 2.2 Overall Operational

**Unmitigated Operational**

Berchman's Hall Relocation Const - Bellarmine College Prep - 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 | | | | | |
| Area | 0.0365 | 2.2000e-004 | 0.0162 | 2.0000e-005 | | 1.2800e-003 | 1.2800e-003 | | 1.2800e-003 | 1.2800e-003 | 0.1271 | 0.0438 | 0.1709 | 2.5000e-004 | 1.0000e-005 | 0.1794 |
| Energy | 2.5000e-004 | 2.2000e-003 | 1.3400e-003 | 1.0000e-005 | | 1.7000e-004 | 1.7000e-004 | | 1.7000e-004 | 1.7000e-004 | 0.0000 | 5.3714 | 5.3714 | 5.8000e-004 | 1.1000e-004 | 5.4189 |
| Mobile | 7.1700e-003 | 7.8500e-003 | 0.0683 | 1.4000e-004 | 0.0159 | 1.0000e-004 | 0.0160 | 4.2500e-003 | 9.0000e-005 | 4.3400e-003 | 0.0000 | 13.2274 | 13.2274 | 8.5000e-004 | 6.2000e-004 | 13.4341 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.4852 | 0.0000 | 0.4852 | 0.0287 | 0.0000 | 1.2019 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0895 | 0.1724 | 0.2618 | 9.2200e-003 | 2.2000e-004 | 0.5581 |
| **Total** | **0.0439** | **0.0103** | **0.0858** | **1.7000e-004** | **0.0159** | **1.5500e-003** | **0.0175** | **4.2500e-003** | **1.5400e-003** | **5.7900e-003** | **0.7017** | **18.8149** | **19.5167** | **0.0396** | **9.6000e-004** | **20.7925** |

**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 | 0.0365 | 2.2000e-004 | 0.0162 | 2.0000e-005 | | 1.2800e-003 | 1.2800e-003 | | 1.2800e-003 | 1.2800e-003 | 0.1271 | 0.0438 | 0.1709 | 2.5000e-004 | 1.0000e-005 | 0.1794 |
| Energy | 2.5000e-004 | 2.2000e-003 | 1.3400e-003 | 1.0000e-005 | | 1.7000e-004 | 1.7000e-004 | | 1.7000e-004 | 1.7000e-004 | 0.0000 | 5.3714 | 5.3714 | 5.8000e-004 | 1.1000e-004 | 5.4189 |
| Mobile | 7.1700e-003 | 7.8500e-003 | 0.0683 | 1.4000e-004 | 0.0159 | 1.0000e-004 | 0.0160 | 4.2500e-003 | 9.0000e-005 | 4.3400e-003 | 0.0000 | 13.2274 | 13.2274 | 8.5000e-004 | 6.2000e-004 | 13.4341 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.4852 | 0.0000 | 0.4852 | 0.0287 | 0.0000 | 1.2019 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0895 | 0.1724 | 0.2618 | 9.2200e-003 | 2.2000e-004 | 0.5581 |
| **Total** | **0.0439** | **0.0103** | **0.0858** | **1.7000e-004** | **0.0159** | **1.5500e-003** | **0.0175** | **4.2500e-003** | **1.5400e-003** | **5.7900e-003** | **0.7017** | **18.8149** | **19.5167** | **0.0396** | **9.6000e-004** | **20.7925** |

Berchman's Hall Relocation Const - Bellarmine College Prep - 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 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 10/15/2023 | 11/1/2023 | 5 | 13 | |
| 2 | Trenching | Trenching | 11/1/2023 | 11/15/2023 | 5 | 11 | |

**Acres of Grading (Site Preparation Phase): 3.98**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Graders | 1 | 1.80 | 187 | 0.41 |
| Site Preparation | Rubber Tired Dozers | 1 | 3.10 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 1 | 4.90 | 97 | 0.37 |
| Trenching | Excavators | 2 | 7.30 | 158 | 0.38 |
| Trenching | Tractors/Loaders/Backhoes | 1 | 7.30 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 3 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Trenching | 3 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

## 3.2 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0173 | 0.0000 | 0.0173 | 8.5700e-003 | 0.0000 | 8.5700e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.8900e-003 | 0.0309 | 0.0192 | 4.0000e-005 | | 1.3300e-003 | 1.3300e-003 | | 1.2200e-003 | 1.2200e-003 | 0.0000 | 3.8292 | 3.8292 | 1.2400e-003 | 0.0000 | 3.8601 |
| **Total** | **2.8900e-003** | **0.0309** | **0.0192** | **4.0000e-005** | **0.0173** | **1.3300e-003** | **0.0186** | **8.5700e-003** | **1.2200e-003** | **9.7900e-003** | **0.0000** | **3.8292** | **3.8292** | **1.2400e-003** | **0.0000** | **3.8601** |

**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 |

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

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

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 7.7800e-003 | 0.0000 | 7.7800e-003 | 3.8500e-003 | 0.0000 | 3.8500e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 7.9000e-004 | 0.0136 | 0.0259 | 4.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | 0.0000 | 3.8291 | 3.8291 | 1.2400e-003 | 0.0000 | 3.8601 |
| **Total** | **7.9000e-004** | **0.0136** | **0.0259** | **4.0000e-005** | **7.7800e-003** | **7.0000e-005** | **7.8500e-003** | **3.8500e-003** | **7.0000e-005** | **3.9200e-003** | **0.0000** | **3.8291** | **3.8291** | **1.2400e-003** | **0.0000** | **3.8601** |

## 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 |

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

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

## 3.3 Trenching - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 2.6500e-003 | 0.0233 | 0.0439 | 7.0000e-005 | | 1.1400e-003 | 1.1400e-003 | | 1.0500e-003 | 1.0500e-003 | 0.0000 | 5.9270 | 5.9270 | 1.9200e-003 | 0.0000 | 5.9749 |
| **Total** | **2.6500e-003** | **0.0233** | **0.0439** | **7.0000e-005** | | **1.1400e-003** | **1.1400e-003** | | **1.0500e-003** | **1.0500e-003** | **0.0000** | **5.9270** | **5.9270** | **1.9200e-003** | **0.0000** | **5.9749** |

### 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** |

Date: 11/4/2022 4:22 PM

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

## Mitigated Construction 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 | 9.9000e-004 | 0.0297 | 0.0511 | 7.0000e-005 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | 0.0000 | 5.9270 | 5.9270 | 1.9200e-003 | 0.0000 | 5.9749 |
| **Total** | **9.9000e-004** | **0.0297** | **0.0511** | **7.0000e-005** | | **1.1000e-004** | **1.1000e-004** | | **1.1000e-004** | **1.1000e-004** | **0.0000** | **5.9270** | **5.9270** | **1.9200e-003** | **0.0000** | **5.9749** |

## 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** |

Berchman's Hall Relocation Const - Bellarmine College Prep - Santa Clara County, Annual

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

## 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 | 7.1700e-003 | 7.8500e-003 | 0.0683 | 1.4000e-004 | 0.0159 | 1.0000e-004 | 0.0160 | 4.2500e-003 | 9.0000e-005 | 4.3400e-003 | 0.0000 | 13.2274 | 13.2274 | 8.5000e-004 | 6.2000e-004 | 13.4341 |
| Unmitigated | 7.1700e-003 | 7.8500e-003 | 0.0683 | 1.4000e-004 | 0.0159 | 1.0000e-004 | 0.0160 | 4.2500e-003 | 9.0000e-005 | 4.3400e-003 | 0.0000 | 13.2274 | 13.2274 | 8.5000e-004 | 6.2000e-004 | 13.4341 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Office Building | 11.88 | 2.70 | 0.85 | 21,496 | 21,496 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Single Family Housing | 9.44 | 9.54 | 8.55 | 21,542 | 21,542 |
| Total | 21.32 | 12.24 | 9.40 | 43,038 | 43,038 |

### 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 |
| Single Family Housing | 10.80 | 4.80 | 5.70 | 31.00 | 15.00 | 54.00 | 86 | 11 | 3 |

### 4.4 Fleet Mix

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

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Office Building | 0.572464 | 0.055653 | 0.187060 | 0.115672 | 0.020329 | 0.005102 | 0.007934 | 0.006404 | 0.000900 | 0.000380 | 0.024412 | 0.000914 | 0.002776 |
| Parking Lot | 0.572464 | 0.055653 | 0.187060 | 0.115672 | 0.020329 | 0.005102 | 0.007934 | 0.006404 | 0.000900 | 0.000380 | 0.024412 | 0.000914 | 0.002776 |
| Single Family Housing | 0.572464 | 0.055653 | 0.187060 | 0.115672 | 0.020329 | 0.005102 | 0.007934 | 0.006404 | 0.000900 | 0.000380 | 0.024412 | 0.000914 | 0.002776 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.8931 | 2.8931 | 5.4000e-004 | 7.0000e-005 | 2.9259 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.8931 | 2.8931 | 5.4000e-004 | 7.0000e-005 | 2.9259 |
| NaturalGas Mitigated | 2.5000e-004 | 2.2000e-003 | 1.3400e-003 | 1.0000e-005 | | 1.7000e-004 | 1.7000e-004 | | 1.7000e-004 | 1.7000e-004 | 0.0000 | 2.4783 | 2.4783 | 5.0000e-005 | 5.0000e-005 | 2.4931 |
| NaturalGas Unmitigated | 2.5000e-004 | 2.2000e-003 | 1.3400e-003 | 1.0000e-005 | | 1.7000e-004 | 1.7000e-004 | | 1.7000e-004 | 1.7000e-004 | 0.0000 | 2.4783 | 2.4783 | 5.0000e-005 | 5.0000e-005 | 2.4931 |

### 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

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

| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Office Building | 19812.6 | 1.1000e-004 | 9.7000e-004 | 8.2000e-004 | 1.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | 0.0000 | 1.0573 | 1.0573 | 2.0000e-005 | 2.0000e-005 | 1.0636 |
| 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 |
| Single Family Housing | 26629.5 | 1.4000e-004 | 1.2300e-003 | 5.2000e-004 | 1.0000e-005 | | 1.0000e-004 | 1.0000e-004 | | 1.0000e-004 | 1.0000e-004 | 0.0000 | 1.4211 | 1.4211 | 3.0000e-005 | 3.0000e-005 | 1.4295 |
| **Total** | | **2.5000e-004** | **2.2000e-003** | **1.3400e-003** | **2.0000e-005** | | **1.7000e-004** | **1.7000e-004** | | **1.7000e-004** | **1.7000e-004** | **0.0000** | **2.4783** | **2.4783** | **5.0000e-005** | **5.0000e-005** | **2.4931** |

**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 | 19812.6 | 1.1000e-004 | 9.7000e-004 | 8.2000e-004 | 1.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | 0.0000 | 1.0573 | 1.0573 | 2.0000e-005 | 2.0000e-005 | 1.0636 |
| 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 |
| Single Family Housing | 26629.5 | 1.4000e-004 | 1.2300e-003 | 5.2000e-004 | 1.0000e-005 | | 1.0000e-004 | 1.0000e-004 | | 1.0000e-004 | 1.0000e-004 | 0.0000 | 1.4211 | 1.4211 | 3.0000e-005 | 3.0000e-005 | 1.4295 |
| **Total** | | **2.5000e-004** | **2.2000e-003** | **1.3400e-003** | **2.0000e-005** | | **1.7000e-004** | **1.7000e-004** | | **1.7000e-004** | **1.7000e-004** | **0.0000** | **2.4783** | **2.4783** | **5.0000e-005** | **5.0000e-005** | **2.4931** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | 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**

| Land Use | kWh/yr | MT/yr | | | |
|---|---|---|---|---|---|
| General Office Building | 20998.9 | 1.6954 | 3.1000e-004 | 4.0000e-005 | 1.7147 |
| Parking Lot | 7000 | 0.5652 | 1.0000e-004 | 1.0000e-005 | 0.5716 |
| Single Family Housing | 7833.22 | 0.6325 | 1.2000e-004 | 1.0000e-005 | 0.6396 |
| **Total** | | **2.8931** | **5.3000e-004** | **6.0000e-005** | **2.9259** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Office Building | 20998.9 | 1.6954 | 3.1000e-004 | 4.0000e-005 | 1.7147 |
| Parking Lot | 7000 | 0.5652 | 1.0000e-004 | 1.0000e-005 | 0.5716 |
| Single Family Housing | 7833.22 | 0.6325 | 1.2000e-004 | 1.0000e-005 | 0.6396 |
| **Total** | | **2.8931** | **5.3000e-004** | **6.0000e-005** | **2.9259** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

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

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.0365 | 2.2000e-004 | 0.0162 | 2.0000e-005 | | 1.2800e-003 | 1.2800e-003 | | 1.2800e-003 | 1.2800e-003 | 0.1271 | 0.0438 | 0.1709 | 2.5000e-004 | 1.0000e-005 | 0.1794 |
| Unmitigated | 0.0365 | 2.2000e-004 | 0.0162 | 2.0000e-005 | | 1.2800e-003 | 1.2800e-003 | | 1.2800e-003 | 1.2800e-003 | 0.1271 | 0.0438 | 0.1709 | 2.5000e-004 | 1.0000e-005 | 0.1794 |

## 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 | 4.6000e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0257 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 5.8900e-003 | 1.3000e-004 | 8.5700e-003 | 2.0000e-005 | | 1.2400e-003 | 1.2400e-003 | | 1.2400e-003 | 1.2400e-003 | 0.1271 | 0.0312 | 0.1583 | 2.4000e-004 | 1.0000e-005 | 0.1665 |
| Landscaping | 2.4000e-004 | 9.0000e-005 | 7.6500e-003 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | 0.0000 | 0.0126 | 0.0126 | 1.0000e-005 | 0.0000 | 0.0129 |
| **Total** | **0.0364** | **2.2000e-004** | **0.0162** | **2.0000e-005** | | **1.2800e-003** | **1.2800e-003** | | **1.2800e-003** | **1.2800e-003** | **0.1271** | **0.0438** | **0.1709** | **2.5000e-004** | **1.0000e-005** | **0.1794** |

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

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 4.6000e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0257 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 5.8900e-003 | 1.3000e-004 | 8.5700e-003 | 2.0000e-005 | | 1.2400e-003 | 1.2400e-003 | | 1.2400e-003 | 1.2400e-003 | 0.1271 | 0.0312 | 0.1583 | 2.4000e-004 | 1.0000e-005 | 0.1665 |
| Landscaping | 2.4000e-004 | 9.0000e-005 | 7.6500e-003 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | 0.0000 | 0.0126 | 0.0126 | 1.0000e-005 | 0.0000 | 0.0129 |
| **Total** | **0.0364** | **2.2000e-004** | **0.0162** | **2.0000e-005** | | **1.2800e-003** | **1.2800e-003** | | **1.2800e-003** | **1.2800e-003** | **0.1271** | **0.0438** | **0.1709** | **2.5000e-004** | **1.0000e-005** | **0.1794** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 0.2618 | 9.2200e-003 | 2.2000e-004 | 0.5581 |
| Unmitigated | 0.2618 | 9.2200e-003 | 2.2000e-004 | 0.5581 |

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

## 7.2 Water by Land Use

### Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Office Building | 0.216835 / 0.132899 | 0.2011 | 7.0900e-003 | 1.7000e-004 | 0.4289 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 0.065154 / 0.0410754 | 0.0607 | 2.1300e-003 | 5.0000e-005 | 0.1292 |
| **Total** | | **0.2618** | **9.2200e-003** | **2.2000e-004** | **0.5581** |

### Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Office Building | 0.216835 / 0.132899 | 0.2011 | 7.0900e-003 | 1.7000e-004 | 0.4289 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 0.065154 / 0.0410754 | 0.0607 | 2.1300e-003 | 5.0000e-005 | 0.1292 |
| **Total** | | **0.2618** | **9.2200e-003** | **2.2000e-004** | **0.5581** |

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

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 0.4852 | 0.0287 | 0.0000 | 1.2019 |
| Unmitigated | 0.4852 | 0.0287 | 0.0000 | 1.2019 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Office Building | 1.13 | 0.2294 | 0.0136 | 0.0000 | 0.5683 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 1.26 | 0.2558 | 0.0151 | 0.0000 | 0.6337 |
| **Total** | | **0.4852** | **0.0287** | **0.0000** | **1.2019** |

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

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Office Building | 1.13 | 0.2294 | 0.0136 | 0.0000 | 0.5683 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 1.26 | 0.2558 | 0.0151 | 0.0000 | 0.6337 |
| **Total** | | **0.4852** | **0.0287** | **0.0000** | **1.2019** |

## 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 |
|---|---|

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

## 11.0 Vegetation

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

# Wade Academic Hall, Bellarmine College Prep

**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 | 3.47 | 1000sqft | 2.50 | 3,471.00 | 0 |
| High School | 41.65 | 1000sqft | 0.00 | 41,653.00 | 0 |
| Parking Lot | 49.00 | Space | 0.00 | 32,675.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2026 |
| **Utility Company** | San Jose Clean Energy | | | | |
| **CO2 Intensity (lb/MWhr)** | 178 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

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

Project Characteristics - San Jose Clean Energy 2020 rate = 178 lb/MWh.

Land Use - Total lot acreage and square footage provided by construction sheet.

Construction Phase - Provided in construction worksheet.

Off-road Equipment - Provided in construction worksheet.

Off-road Equipment - Provided in construction worksheet.

Off-road Equipment - Provided in construction worksheet.

Off-road Equipment - Provided in construction worksheet.

Off-road Equipment - Provided in construction worksheet.

Off-road Equipment - Provided in construction worksheet.

Off-road Equipment - Provided in construction worksheet.

Date: 12/15/2022 11:54 AM

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

Trips and VMT - EMFAC2021 adjustment 0 trips. Building const = 260 concrete truck round trips, asphalt = 1900-tons.

Demolition - Existing building demo = 22,287-sqft

Grading - Grading = 3,000-cy soil export.

Construction Off-road Equipment Mitigation - BMPs, tier 4 interim mitigation.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstEquipMitigation | FuelType | Diesel | Electrical |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 6.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 5.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |

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

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstructionPhase | NumDays | 10.00 | 244.00 |
| tblConstructionPhase | NumDays | 220.00 | 132.00 |
| tblConstructionPhase | NumDays | 20.00 | 15.00 |
| tblConstructionPhase | NumDays | 6.00 | 12.00 |
| tblConstructionPhase | NumDays | 3.00 | 5.00 |
| tblGrading | AcresOfGrading | 10.00 | 5.00 |
| tblGrading | MaterialExported | 0.00 | 3,000.00 |
| tblLandUse | LandUseSquareFeet | 3,470.00 | 3,471.00 |
| tblLandUse | LandUseSquareFeet | 41,650.00 | 41,653.00 |
| tblLandUse | LandUseSquareFeet | 19,600.00 | 32,675.00 |
| tblLandUse | LotAcreage | 0.08 | 2.50 |
| tblLandUse | LotAcreage | 0.96 | 0.00 |
| tblLandUse | LotAcreage | 0.44 | 0.00 |
| tblOffRoadEquipment | HorsePower | 247.00 | 367.00 |
| tblOffRoadEquipment | LoadFactor | 0.40 | 0.48 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 1.00 |

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

| | | | |
|---|---|---|---|
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 1.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 2.70 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 6.70 |
| tblOffRoadEquipment | UsageHours | 7.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 5.30 |
| tblOffRoadEquipment | UsageHours | 7.00 | 3.60 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 4.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 5.20 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 2.40 |
| tblOffRoadEquipment | UsageHours | 8.00 | 2.40 |
| tblOffRoadEquipment | UsageHours | 8.00 | 2.40 |
| tblOffRoadEquipment | UsageHours | 8.00 | 2.40 |
| tblProjectCharacteristics | CO2IntensityFactor | 807.98 | 178 |
| tblTripsAndVMT | HaulingTripNumber | 101.00 | 0.00 |
| tblTripsAndVMT | HaulingTripNumber | 375.00 | 0.00 |
| tblTripsAndVMT | VendorTripNumber | 13.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 13.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 10.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 10.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 8.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 32.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 6.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 13.00 | 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**

# 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2023 | 0.0200 | 0.1973 | 0.2040 | 3.7000e-004 | 0.0624 | 8.6200e-003 | 0.0711 | 0.0261 | 7.9500e-003 | 0.0341 | 0.0000 | 32.7188 | 32.7188 | 0.0102 | 0.0000 | 32.9740 |
| 2024 | 0.1550 | 0.4605 | 0.5375 | 9.6000e-004 | 8.5400e-003 | 0.0182 | 0.0267 | 2.0400e-003 | 0.0173 | 0.0193 | 0.0000 | 80.8911 | 80.8911 | 0.0191 | 0.0000 | 81.3689 |
| 2025 | 0.1601 | 0.1505 | 0.2731 | 4.3000e-004 | 0.0000 | 4.9000e-003 | 4.9000e-003 | 0.0000 | 4.7700e-003 | 4.7700e-003 | 0.0000 | 37.5533 | 37.5533 | 7.8300e-003 | 0.0000 | 37.7491 |
| **Maximum** | **0.1601** | **0.4605** | **0.5375** | **9.6000e-004** | **0.0624** | **0.0182** | **0.0711** | **0.0261** | **0.0173** | **0.0341** | **0.0000** | **80.8911** | **80.8911** | **0.0191** | **0.0000** | **81.3689** |

### 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 | 5.8400e-003 | 0.1327 | 0.2417 | 3.7000e-004 | 0.0281 | 6.0000e-004 | 0.0287 | 0.0118 | 6.0000e-004 | 0.0124 | 0.0000 | 32.7188 | 32.7188 | 0.0102 | 0.0000 | 32.9740 |
| 2024 | 0.1114 | 0.2750 | 0.4629 | 7.1000e-004 | 3.8400e-003 | 4.3200e-003 | 8.1600e-003 | 9.2000e-004 | 4.3200e-003 | 5.2400e-003 | 0.0000 | 62.2572 | 62.2572 | 0.0172 | 0.0000 | 62.6874 |
| 2025 | 0.1531 | 0.2010 | 0.3009 | 4.3000e-004 | 0.0000 | 5.3300e-003 | 5.3300e-003 | 0.0000 | 5.3300e-003 | 5.3300e-003 | 0.0000 | 37.5533 | 37.5533 | 7.8300e-003 | 0.0000 | 37.7491 |

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

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Maximum** | **0.1531** | **0.2750** | **0.4629** | **7.1000e-004** | **0.0281** | **5.3300e-003** | **0.0287** | **0.0118** | **5.3300e-003** | **0.0124** | **0.0000** | **62.2572** | **62.2572** | **0.0172** | **0.0000** | **62.6874** |

| | ROG | NOx | 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** | **19.32** | **24.68** | **0.89** | **14.20** | **55.01** | **67.63** | **58.90** | **54.99** | **65.83** | **60.59** | **0.00** | **12.33** | **12.33** | **5.11** | **0.00** | **12.28** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **11-15-2023** | **2-14-2024** | 0.2720 | 0.1997 |
| **2** | **2-15-2024** | **5-14-2024** | 0.1738 | 0.0447 |
| **3** | **5-15-2024** | **8-14-2024** | 0.1776 | 0.0457 |
| **4** | **8-15-2024** | **11-14-2024** | 0.1421 | 0.1562 |
| **5** | **11-15-2024** | **2-14-2025** | 0.1369 | 0.1552 |
| **6** | **2-15-2025** | **5-14-2025** | 0.1311 | 0.1501 |
| **7** | **5-15-2025** | **8-14-2025** | 0.1125 | 0.1273 |
| | | **Highest** | 0.2720 | 0.1997 |

## 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 | 0.2026 | 1.0000e-005 | 8.6000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.6800e-003 | 1.6800e-003 | 0.0000 | 0.0000 | 1.7900e-003 |
| Energy | 4.4100e-003 | 0.0401 | 0.0337 | 2.4000e-004 | | 3.0400e-003 | 3.0400e-003 | | 3.0400e-003 | 3.0400e-003 | 0.0000 | 66.9008 | 66.9008 | 5.1500e-003 | 1.3200e-003 | 67.4239 |
| Mobile | 0.1807 | 0.1984 | 1.7798 | 3.8900e-003 | 0.4603 | 2.7000e-003 | 0.4630 | 0.1229 | 2.5100e-003 | 0.1254 | 0.0000 | 358.7258 | 358.7258 | 0.0217 | 0.0162 | 364.1081 |

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

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 11.6476 | 0.0000 | 11.6476 | 0.6884 | 0.0000 | 28.8565 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.6344 | 1.9854 | 2.6198 | 0.0655 | 1.5800e-003 | 4.7298 |
| **Total** | **0.3877** | **0.2384** | **1.8143** | **4.1300e-003** | **0.4603** | **5.7400e-003** | **0.4661** | **0.1229** | **5.5500e-003** | **0.1284** | **12.2820** | **427.6137** | **439.8957** | **0.7807** | **0.0191** | **465.1200** |

## 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 | 0.2026 | 1.0000e-005 | 8.6000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.6800e-003 | 1.6800e-003 | 0.0000 | 0.0000 | 1.7900e-003 |
| Energy | 4.4100e-003 | 0.0401 | 0.0337 | 2.4000e-004 | | 3.0400e-003 | 3.0400e-003 | | 3.0400e-003 | 3.0400e-003 | 0.0000 | 66.9008 | 66.9008 | 5.1500e-003 | 1.3200e-003 | 67.4239 |
| Mobile | 0.1807 | 0.1984 | 1.7798 | 3.8900e-003 | 0.4603 | 2.7000e-003 | 0.4630 | 0.1229 | 2.5100e-003 | 0.1254 | 0.0000 | 358.7258 | 358.7258 | 0.0217 | 0.0162 | 364.1081 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 11.6476 | 0.0000 | 11.6476 | 0.6884 | 0.0000 | 28.8565 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.6344 | 1.9854 | 2.6198 | 0.0655 | 1.5800e-003 | 4.7298 |
| **Total** | **0.3877** | **0.2384** | **1.8143** | **4.1300e-003** | **0.4603** | **5.7400e-003** | **0.4661** | **0.1229** | **5.5500e-003** | **0.1284** | **12.2820** | **427.6137** | **439.8957** | **0.7807** | **0.0191** | **465.1200** |

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

## 3.0 Construction Detail

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

## Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 11/15/2023 | 12/5/2023 | 5 | 15 | |
| 2 | Site Preparation | Site Preparation | 12/6/2023 | 12/12/2023 | 5 | 5 | |
| 3 | Grading | Grading | 12/15/2023 | 1/1/2024 | 5 | 12 | |
| 4 | Trenching | Trenching | 1/1/2024 | 2/9/2024 | 5 | 30 | |
| 5 | Building Construction | Building Construction | 2/15/2024 | 8/16/2024 | 5 | 132 | |
| 6 | Architectural Coating | Architectural Coating | 8/15/2024 | 7/22/2025 | 5 | 244 | |
| 7 | Paving | Paving | 6/1/2025 | 6/13/2025 | 5 | 10 | |

**Acres of Grading (Site Preparation Phase): 5**

**Acres of Grading (Grading Phase): 11.03**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 67,686; Non-Residential Outdoor: 22,562; Striped Parking Area: 1,961**

## OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 2.70 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 0 | 0.00 | 247 | 0.40 |
| Demolition | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Site Preparation | Graders | 1 | 8.00 | 187 | 0.41 |
| Site Preparation | Rubber Tired Dozers | 1 | 8.00 | 367 | 0.48 |
| Site Preparation | Scrapers | 1 | 8.00 | 367 | 0.48 |
| Site Preparation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 1 | 6.70 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 6.70 | 247 | 0.40 |

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

| | | | | | |
|---|---|---|---|---|---|
| Grading | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Trenching | Excavators | 2 | 5.30 | 158 | 0.38 |
| Trenching | Tractors/Loaders/Backhoes | 1 | 4.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 5.30 | 231 | 0.29 |
| Building Construction | Forklifts | 1 | 3.60 | 89 | 0.20 |
| Building Construction | Generator Sets | 0 | 0.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 0 | 0.00 | 97 | 0.37 |
| Building Construction | Welders | 3 | 4.00 | 46 | 0.45 |
| Architectural Coating | Aerial Lifts | 2 | 7.20 | 63 | 0.31 |
| Architectural Coating | Air Compressors | 1 | 5.20 | 78 | 0.48 |
| Paving | Cement and Mortar Mixers | 0 | 0.00 | 9 | 0.56 |
| Paving | Pavers | 1 | 2.40 | 130 | 0.42 |
| Paving | Paving Equipment | 1 | 2.40 | 132 | 0.36 |
| Paving | Rollers | 2 | 2.40 | 80 | 0.38 |
| Paving | Tractors/Loaders/Backhoes | 1 | 2.40 | 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 | 5 | 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 | 4 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Trenching | 3 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 5 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 3 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 5 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0110 | 0.0000 | 0.0110 | 1.6600e-003 | 0.0000 | 1.6600e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 6.2300e-003 | 0.0529 | 0.0993 | 1.6000e-004 | | 2.6000e-003 | 2.6000e-003 | | 2.4200e-003 | 2.4200e-003 | 0.0000 | 13.6208 | 13.6208 | 4.0300e-003 | 0.0000 | 13.7216 |
| **Total** | **6.2300e-003** | **0.0529** | **0.0993** | **1.6000e-004** | **0.0110** | **2.6000e-003** | **0.0136** | **1.6600e-003** | **2.4200e-003** | **4.0800e-003** | **0.0000** | **13.6208** | **13.6208** | **4.0300e-003** | **0.0000** | **13.7216** |

### 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 |

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

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

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 4.9400e-003 | 0.0000 | 4.9400e-003 | 7.5000e-004 | 0.0000 | 7.5000e-004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.2400e-003 | 0.0670 | 0.1155 | 1.6000e-004 | | 2.5000e-004 | 2.5000e-004 | | 2.5000e-004 | 2.5000e-004 | 0.0000 | 13.6208 | 13.6208 | 4.0300e-003 | 0.0000 | 13.7216 |
| **Total** | **2.2400e-003** | **0.0670** | **0.1155** | **1.6000e-004** | **4.9400e-003** | **2.5000e-004** | **5.1900e-003** | **7.5000e-004** | **2.5000e-004** | **1.0000e-003** | **0.0000** | **13.6208** | **13.6208** | **4.0300e-003** | **0.0000** | **13.7216** |

## 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 |

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

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

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0177 | 0.0000 | 0.0177 | 8.5600e-003 | 0.0000 | 8.5600e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 6.7700e-003 | 0.0704 | 0.0538 | 1.0000e-004 | | 2.9400e-003 | 2.9400e-003 | | 2.7100e-003 | 2.7100e-003 | 0.0000 | 8.8501 | 8.8501 | 2.8600e-003 | 0.0000 | 8.9217 |
| **Total** | **6.7700e-003** | **0.0704** | **0.0538** | **1.0000e-004** | **0.0177** | **2.9400e-003** | **0.0207** | **8.5600e-003** | **2.7100e-003** | **0.0113** | **0.0000** | **8.8501** | **8.8501** | **2.8600e-003** | **0.0000** | **8.9217** |

### 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 |

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

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

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 7.9700e-003 | 0.0000 | 7.9700e-003 | 3.8500e-003 | 0.0000 | 3.8500e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.6900e-003 | 0.0278 | 0.0550 | 1.0000e-004 | | 1.6000e-004 | 1.6000e-004 | | 1.6000e-004 | 1.6000e-004 | 0.0000 | 8.8501 | 8.8501 | 2.8600e-003 | 0.0000 | 8.9217 |
| **Total** | **1.6900e-003** | **0.0278** | **0.0550** | **1.0000e-004** | **7.9700e-003** | **1.6000e-004** | **8.1300e-003** | **3.8500e-003** | **1.6000e-004** | **4.0100e-003** | **0.0000** | **8.8501** | **8.8501** | **2.8600e-003** | **0.0000** | **8.9217** |

## 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 |

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

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

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0338 | 0.0000 | 0.0338 | 0.0159 | 0.0000 | 0.0159 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 6.9600e-003 | 0.0740 | 0.0509 | 1.2000e-004 | | 3.0700e-003 | 3.0700e-003 | | 2.8300e-003 | 2.8300e-003 | 0.0000 | 10.2479 | 10.2479 | 3.3100e-003 | 0.0000 | 10.3307 |
| **Total** | **6.9600e-003** | **0.0740** | **0.0509** | **1.2000e-004** | **0.0338** | **3.0700e-003** | **0.0368** | **0.0159** | **2.8300e-003** | **0.0187** | **0.0000** | **10.2479** | **10.2479** | **3.3100e-003** | **0.0000** | **10.3307** |

### 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 |

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

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

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0152 | 0.0000 | 0.0152 | 7.1600e-003 | 0.0000 | 7.1600e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.9100e-003 | 0.0379 | 0.0711 | 1.2000e-004 | | 1.9000e-004 | 1.9000e-004 | | 1.9000e-004 | 1.9000e-004 | 0.0000 | 10.2479 | 10.2479 | 3.3100e-003 | 0.0000 | 10.3307 |
| **Total** | **1.9100e-003** | **0.0379** | **0.0711** | **1.2000e-004** | **0.0152** | **1.9000e-004** | **0.0154** | **7.1600e-003** | **1.9000e-004** | **7.3500e-003** | **0.0000** | **10.2479** | **10.2479** | **3.3100e-003** | **0.0000** | **10.3307** |

## 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 |

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

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

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 8.5400e-003 | 0.0000 | 8.5400e-003 | 2.0400e-003 | 0.0000 | 2.0400e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 6.2000e-004 | 6.3700e-003 | 4.6200e-003 | 1.0000e-005 | | 2.6000e-004 | 2.6000e-004 | | 2.4000e-004 | 2.4000e-004 | 0.0000 | 0.9316 | 0.9316 | 3.0000e-004 | 0.0000 | 0.9391 |
| **Total** | **6.2000e-004** | **6.3700e-003** | **4.6200e-003** | **1.0000e-005** | **8.5400e-003** | **2.6000e-004** | **8.8000e-003** | **2.0400e-003** | **2.4000e-004** | **2.2800e-003** | **0.0000** | **0.9316** | **0.9316** | **3.0000e-004** | **0.0000** | **0.9391** |

### 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 |

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

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

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 3.8400e-003 | 0.0000 | 3.8400e-003 | 9.2000e-004 | 0.0000 | 9.2000e-004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.7000e-004 | 3.4400e-003 | 6.4700e-003 | 1.0000e-005 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.9316 | 0.9316 | 3.0000e-004 | 0.0000 | 0.9391 |
| **Total** | **1.7000e-004** | **3.4400e-003** | **6.4700e-003** | **1.0000e-005** | **3.8400e-003** | **2.0000e-005** | **3.8600e-003** | **9.2000e-004** | **2.0000e-005** | **9.4000e-004** | **0.0000** | **0.9316** | **0.9316** | **3.0000e-004** | **0.0000** | **0.9391** |

## 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 |

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

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

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 4.6600e-003 | 0.0387 | 0.0817 | 1.3000e-004 | | 1.8700e-003 | 1.8700e-003 | | 1.7200e-003 | 1.7200e-003 | 0.0000 | 11.0731 | 11.0731 | 3.5800e-003 | 0.0000 | 11.1627 |
| **Total** | **4.6600e-003** | **0.0387** | **0.0817** | **1.3000e-004** | | **1.8700e-003** | **1.8700e-003** | | **1.7200e-003** | **1.7200e-003** | **0.0000** | **11.0731** | **11.0731** | **3.5800e-003** | **0.0000** | **11.1627** |

### 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 |

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

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

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 1.7800e-003 | 0.0554 | 0.0954 | 1.3000e-004 | | 2.1000e-004 | 2.1000e-004 | | 2.1000e-004 | 2.1000e-004 | 0.0000 | 11.0731 | 11.0731 | 3.5800e-003 | 0.0000 | 11.1626 |
| **Total** | **1.7800e-003** | **0.0554** | **0.0954** | **1.3000e-004** | | **2.1000e-004** | **2.1000e-004** | | **2.1000e-004** | **2.1000e-004** | **0.0000** | **11.0731** | **11.0731** | **3.5800e-003** | **0.0000** | **11.1626** |

## 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** |

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Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

## 3.6 Building 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 | 0.0407 | 0.3162 | 0.2761 | 5.5000e-004 | | 0.0126 | 0.0126 | | 0.0120 | 0.0120 | 0.0000 | 44.7883 | 44.7883 | 0.0104 | 0.0000 | 45.0473 |
| **Total** | **0.0407** | **0.3162** | **0.2761** | **5.5000e-004** | | **0.0126** | **0.0126** | | **0.0120** | **0.0120** | **0.0000** | **44.7883** | **44.7883** | **0.0104** | **0.0000** | **45.0473** |

### 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** |

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Wade Academic Hall, Bellarmine College Prep - 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 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 | 5.1600e-003 | 0.0866 | 0.1688 | 3.0000e-004 | | 4.9000e-004 | 4.9000e-004 | | 4.9000e-004 | 4.9000e-004 | 0.0000 | 26.1544 | 26.1544 | 8.4600e-003 | 0.0000 | 26.3659 |
| **Total** | **5.1600e-003** | **0.0866** | **0.1688** | **3.0000e-004** | | **4.9000e-004** | **4.9000e-004** | | **4.9000e-004** | **4.9000e-004** | **0.0000** | **26.1544** | **26.1544** | **8.4600e-003** | **0.0000** | **26.3659** |

**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** |

## 3.7 Architectural Coating - 2024

**Unmitigated Construction On-Site**

Date: 12/15/2022 11:54 AM

Wade Academic Hall, Bellarmine College Prep - 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 | | | | | |
| Archit. Coating | 0.0982 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0108 | 0.0992 | 0.1750 | 2.8000e-004 | | 3.4300e-003 | 3.4300e-003 | | 3.3600e-003 | 3.3600e-003 | 0.0000 | 24.0981 | 24.0981 | 4.8700e-003 | 0.0000 | 24.2198 |
| **Total** | **0.1091** | **0.0992** | **0.1750** | **2.8000e-004** | | **3.4300e-003** | **3.4300e-003** | | **3.3600e-003** | **3.3600e-003** | **0.0000** | **24.0981** | **24.0981** | **4.8700e-003** | **0.0000** | **24.2198** |

**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**

Wade Academic Hall, Bellarmine College Prep - 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 | | | | | |
| Archit. Coating | 0.0982 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 6.0200e-003 | 0.1296 | 0.1922 | 2.8000e-004 | | 3.6100e-003 | 3.6100e-003 | | 3.6100e-003 | 3.6100e-003 | 0.0000 | 24.0980 | 24.0980 | 4.8700e-003 | 0.0000 | 24.2197 |
| **Total** | **0.1043** | **0.1296** | **0.1922** | **2.8000e-004** | | **3.6100e-003** | **3.6100e-003** | | **3.6100e-003** | **3.6100e-003** | **0.0000** | **24.0980** | **24.0980** | **4.8700e-003** | **0.0000** | **24.2197** |

**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** |

## 3.7 Architectural Coating - 2025

**Unmitigated Construction On-Site**

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Wade Academic Hall, Bellarmine College Prep - 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 | | | | | |
| Archit. Coating | 0.1439 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0152 | 0.1399 | 0.2561 | 4.1000e-004 | | 4.4000e-003 | 4.4000e-003 | | 4.3100e-003 | 4.3100e-003 | 0.0000 | 35.2951 | 35.2951 | 7.1000e-003 | 0.0000 | 35.4727 |
| **Total** | **0.1591** | **0.1399** | **0.2561** | **4.1000e-004** | | **4.4000e-003** | **4.4000e-003** | | **4.3100e-003** | **4.3100e-003** | **0.0000** | **35.2951** | **35.2951** | **7.1000e-003** | **0.0000** | **35.4727** |

**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**

Wade Academic Hall, Bellarmine College Prep - 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 | | | | | |
| Archit. Coating | 0.1439 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 8.8200e-003 | 0.1898 | 0.2815 | 4.1000e-004 | | 5.2800e-003 | 5.2800e-003 | | 5.2800e-003 | 5.2800e-003 | 0.0000 | 35.2951 | 35.2951 | 7.1000e-003 | 0.0000 | 35.4726 |
| **Total** | **0.1527** | **0.1898** | **0.2815** | **4.1000e-004** | | **5.2800e-003** | **5.2800e-003** | | **5.2800e-003** | **5.2800e-003** | **0.0000** | **35.2951** | **35.2951** | **7.1000e-003** | **0.0000** | **35.4726** |

**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** |

## 3.8 Paving - 2025

**Unmitigated Construction On-Site**

Date: 12/15/2022 11:54 AM

Wade Academic Hall, Bellarmine College Prep - 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 | | | | | |
| Off-Road | 1.0900e-003 | 0.0106 | 0.0171 | 3.0000e-005 | | 5.0000e-004 | 5.0000e-004 | | 4.6000e-004 | 4.6000e-004 | 0.0000 | 2.2582 | 2.2582 | 7.3000e-004 | 0.0000 | 2.2765 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **1.0900e-003** | **0.0106** | **0.0171** | **3.0000e-005** | | **5.0000e-004** | **5.0000e-004** | | **4.6000e-004** | **4.6000e-004** | **0.0000** | **2.2582** | **2.2582** | **7.3000e-004** | **0.0000** | **2.2765** |

**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**

Wade Academic Hall, Bellarmine College Prep - 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 | | | | | |
| Off-Road | 4.4000e-004 | 0.0113 | 0.0195 | 3.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | 0.0000 | 2.2582 | 2.2582 | 7.3000e-004 | 0.0000 | 2.2765 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **4.4000e-004** | **0.0113** | **0.0195** | **3.0000e-005** | | **4.0000e-005** | **4.0000e-005** | | **4.0000e-005** | **4.0000e-005** | **0.0000** | **2.2582** | **2.2582** | **7.3000e-004** | **0.0000** | **2.2765** |

**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** |

## 4.0 Operational Detail - Mobile

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

## 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.1807 | 0.1984 | 1.7798 | 3.8900e-003 | 0.4603 | 2.7000e-003 | 0.4630 | 0.1229 | 2.5100e-003 | 0.1254 | 0.0000 | 358.7258 | 358.7258 | 0.0217 | 0.0162 | 364.1081 |
| Unmitigated | 0.1807 | 0.1984 | 1.7798 | 3.8900e-003 | 0.4603 | 2.7000e-003 | 0.4630 | 0.1229 | 2.5100e-003 | 0.1254 | 0.0000 | 358.7258 | 358.7258 | 0.0217 | 0.0162 | 364.1081 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Office Building | 33.80 | 7.67 | 2.43 | 61,139 | 61,139 |
| High School | 586.02 | 165.77 | 71.22 | 1,184,556 | 1,184,556 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 619.81 | 173.44 | 73.65 | 1,245,695 | 1,245,695 |

## 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 |
| High School | 9.50 | 7.30 | 7.30 | 77.80 | 17.20 | 5.00 | 75 | 19 | 6 |
| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

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

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Office Building | 0.574685 | 0.056097 | 0.185093 | 0.115164 | 0.020188 | 0.005209 | 0.008091 | 0.006312 | 0.000884 | 0.000364 | 0.024358 | 0.000887 | 0.002668 |
| High School | 0.574685 | 0.056097 | 0.185093 | 0.115164 | 0.020188 | 0.005209 | 0.008091 | 0.006312 | 0.000884 | 0.000364 | 0.024358 | 0.000887 | 0.002668 |
| Parking Lot | 0.574685 | 0.056097 | 0.185093 | 0.115164 | 0.020188 | 0.005209 | 0.008091 | 0.006312 | 0.000884 | 0.000364 | 0.024358 | 0.000887 | 0.002668 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 23.2903 | 23.2903 | 4.3200e-003 | 5.2000e-004 | 23.5542 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 23.2903 | 23.2903 | 4.3200e-003 | 5.2000e-004 | 23.5542 |
| NaturalGas Mitigated | 4.4100e-003 | 0.0401 | 0.0337 | 2.4000e-004 | | 3.0400e-003 | 3.0400e-003 | | 3.0400e-003 | 3.0400e-003 | 0.0000 | 43.6105 | 43.6105 | 8.4000e-004 | 8.0000e-004 | 43.8697 |
| NaturalGas Unmitigated | 4.4100e-003 | 0.0401 | 0.0337 | 2.4000e-004 | | 3.0400e-003 | 3.0400e-003 | | 3.0400e-003 | 3.0400e-003 | 0.0000 | 43.6105 | 43.6105 | 8.4000e-004 | 8.0000e-004 | 43.8697 |

### 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Office Building | 56230.2 | 3.0000e-004 | 2.7600e-003 | 2.3200e-003 | 2.0000e-005 | | 2.1000e-004 | 2.1000e-004 | | 2.1000e-004 | 2.1000e-004 | 0.0000 | 3.0007 | 3.0007 | 6.0000e-005 | 6.0000e-005 | 3.0185 |
| High School | 761000 | 4.1000e-003 | 0.0373 | 0.0313 | 2.2000e-004 | | 2.8400e-003 | 2.8400e-003 | | 2.8400e-003 | 2.8400e-003 | 0.0000 | 40.6099 | 40.6099 | 7.8000e-004 | 7.4000e-004 | 40.8512 |
| 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** | | **4.4000e-003** | **0.0401** | **0.0337** | **2.4000e-004** | | **3.0500e-003** | **3.0500e-003** | | **3.0500e-003** | **3.0500e-003** | **0.0000** | **43.6105** | **43.6105** | **8.4000e-004** | **8.0000e-004** | **43.8697** |

**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 | 56230.2 | 3.0000e-004 | 2.7600e-003 | 2.3200e-003 | 2.0000e-005 | | 2.1000e-004 | 2.1000e-004 | | 2.1000e-004 | 2.1000e-004 | 0.0000 | 3.0007 | 3.0007 | 6.0000e-005 | 6.0000e-005 | 3.0185 |
| High School | 761000 | 4.1000e-003 | 0.0373 | 0.0313 | 2.2000e-004 | | 2.8400e-003 | 2.8400e-003 | | 2.8400e-003 | 2.8400e-003 | 0.0000 | 40.6099 | 40.6099 | 7.8000e-004 | 7.4000e-004 | 40.8512 |
| 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** | | **4.4000e-003** | **0.0401** | **0.0337** | **2.4000e-004** | | **3.0500e-003** | **3.0500e-003** | | **3.0500e-003** | **3.0500e-003** | **0.0000** | **43.6105** | **43.6105** | **8.4000e-004** | **8.0000e-004** | **43.8697** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Office Building | 59597.1 | 4.8118 | 8.9000e-004 | 1.1000e-004 | 4.8664 |
| High School | 217429 | 17.5551 | 3.2500e-003 | 3.9000e-004 | 17.7540 |
| Parking Lot | 11436.3 | 0.9234 | 1.7000e-004 | 2.0000e-005 | 0.9338 |
| **Total** | | **23.2903** | **4.3100e-003** | **5.2000e-004** | **23.5542** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Office Building | 59597.1 | 4.8118 | 8.9000e-004 | 1.1000e-004 | 4.8664 |
| High School | 217429 | 17.5551 | 3.2500e-003 | 3.9000e-004 | 17.7540 |
| Parking Lot | 11436.3 | 0.9234 | 1.7000e-004 | 2.0000e-005 | 0.9338 |
| **Total** | | **23.2903** | **4.3100e-003** | **5.2000e-004** | **23.5542** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Wade Academic Hall, Bellarmine College Prep - 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 | | | | | |
| Mitigated | 0.2026 | 1.0000e-005 | 8.6000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.6800e-003 | 1.6800e-003 | 0.0000 | 0.0000 | 1.7900e-003 |
| Unmitigated | 0.2026 | 1.0000e-005 | 8.6000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.6800e-003 | 1.6800e-003 | 0.0000 | 0.0000 | 1.7900e-003 |

## 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 | 0.0242 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.1783 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 8.0000e-005 | 1.0000e-005 | 8.6000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.6800e-003 | 1.6800e-003 | 0.0000 | 0.0000 | 1.7900e-003 |
| **Total** | **0.2026** | **1.0000e-005** | **8.6000e-004** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **1.6800e-003** | **1.6800e-003** | **0.0000** | **0.0000** | **1.7900e-003** |

**Mitigated**

Wade Academic Hall, Bellarmine College Prep - 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0242 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.1783 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 8.0000e-005 | 1.0000e-005 | 8.6000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.6800e-003 | 1.6800e-003 | 0.0000 | 0.0000 | 1.7900e-003 |
| **Total** | **0.2026** | **1.0000e-005** | **8.6000e-004** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **1.6800e-003** | **1.6800e-003** | **0.0000** | **0.0000** | **1.7900e-003** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 2.6198 | 0.0655 | 1.5800e-003 | 4.7298 |
| Unmitigated | 2.6198 | 0.0655 | 1.5800e-003 | 4.7298 |

### 7.2 Water by Land Use

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

## Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Office Building | 0.616736 / 0.378 | 0.5719 | 0.0202 | 4.8000e-004 | 1.2200 |
| High School | 1.38297 / 3.55622 | 2.0479 | 0.0454 | 1.1000e-003 | 3.5098 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **2.6198** | **0.0655** | **1.5800e-003** | **4.7298** |

## Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Office Building | 0.616736 / 0.378 | 0.5719 | 0.0202 | 4.8000e-004 | 1.2200 |
| High School | 1.38297 / 3.55622 | 2.0479 | 0.0454 | 1.1000e-003 | 3.5098 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **2.6198** | **0.0655** | **1.5800e-003** | **4.7298** |

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 11.6476 | 0.6884 | 0.0000 | 28.8565 |
| Unmitigated | 11.6476 | 0.6884 | 0.0000 | 28.8565 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Office Building | 3.23 | 0.6557 | 0.0388 | 0.0000 | 1.6244 |
| High School | 54.15 | 10.9920 | 0.6496 | 0.0000 | 27.2321 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **11.6476** | **0.6884** | **0.0000** | **28.8565** |

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Office Building | 3.23 | 0.6557 | 0.0388 | 0.0000 | 1.6244 |
| High School | 54.15 | 10.9920 | 0.6496 | 0.0000 | 27.2321 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **11.6476** | **0.6884** | **0.0000** | **28.8565** |

## 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 |
|---|---|

Wade Academic Hall, Bellarmine College Prep - Santa Clara County, Annual

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

## 11.0 Vegetation

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

# New Classroom & Administration - Bellarmine CP

**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 | 14.44 | 1000sqft | 0.90 | 14,438.00 | 0 |
| High School | 8.84 | 1000sqft | 0.00 | 8,840.00 | 0 |
| Parking Lot | 49.00 | Space | 0.00 | 32,675.00 | 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)** | 178 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

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

Project Characteristics - San Jose Clean Energy 2020 rate = 178 lb/MWh.

Land Use - Provided by construction sheet.

Construction Phase - Schedule from construction sheet provided by applicant.

Off-road Equipment - Provided by construction sheet.

Off-road Equipment - Provided construction sheet by applicant.

Off-road Equipment - Provided construction sheet by applicant.

Off-road Equipment - Provided construction sheet by applicant.

Off-road Equipment - Provided construction sheet by applicant.

Off-road Equipment - Provided construction sheet by applicant.

Off-road Equipment - Provided construction sheet by applicant.

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

Trips and VMT - EMFAC2021 adjustment 0 trips, building const = 104 concrete truck round trips, paving = 1,200-tons of asphalt.

Demolition - Existing building demo = 45,700-sqft.

Grading - Grading = 3,000-cy of soil export.

Construction Off-road Equipment Mitigation - BMPs, tier 4 interim mitigation, electric welders.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstEquipMitigation | FuelType | Diesel | Electrical |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 6.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 6.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |

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

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstructionPhase | NumDays | 5.00 | 132.00 |
| tblConstructionPhase | NumDays | 100.00 | 88.00 |
| tblConstructionPhase | NumDays | 10.00 | 45.00 |
| tblConstructionPhase | NumDays | 2.00 | 12.00 |
| tblConstructionPhase | NumDays | 5.00 | 10.00 |
| tblConstructionPhase | NumDays | 1.00 | 5.00 |
| tblGrading | MaterialExported | 0.00 | 3,000.00 |
| tblLandUse | LandUseSquareFeet | 14,440.00 | 14,438.00 |
| tblLandUse | LandUseSquareFeet | 19,600.00 | 32,675.00 |
| tblLandUse | LotAcreage | 0.33 | 0.90 |
| tblLandUse | LotAcreage | 0.20 | 0.00 |
| tblLandUse | LotAcreage | 0.44 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.90 |
| tblOffRoadEquipment | UsageHours | 6.00 | 4.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 6.70 |
| tblOffRoadEquipment | UsageHours | 7.00 | 2.40 |
| tblOffRoadEquipment | UsageHours | 7.00 | 2.40 |
| tblOffRoadEquipment | UsageHours | 1.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 6.70 |

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

| | | | |
|---|---|---|---|
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 0.40 |
| tblOffRoadEquipment | UsageHours | 7.00 | 6.70 |
| tblOffRoadEquipment | UsageHours | 7.00 | 2.40 |
| tblProjectCharacteristics | CO2IntensityFactor | 807.98 | 178 |
| tblTripsAndVMT | HaulingTripNumber | 208.00 | 0.00 |
| tblTripsAndVMT | HaulingTripNumber | 375.00 | 0.00 |
| tblTripsAndVMT | VendorTripNumber | 9.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 15.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 8.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 10.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 8.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 22.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 4.00 | 0.00 |
| tblTripsAndVMT | WorkerTripNumber | 10.00 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2025 | 0.0176 | 0.1555 | 0.2277 | 4.2000e-004 | 0.0760 | 6.7600e-003 | 0.0827 | 0.0292 | 6.2400e-003 | 0.0354 | 0.0000 | 36.6341 | 36.6341 | 0.0115 | 0.0000 | 36.9208 |
| 2026 | 0.1725 | 0.3633 | 0.5314 | 9.0000e-004 | 0.0000 | 0.0132 | 0.0132 | 0.0000 | 0.0126 | 0.0126 | 0.0000 | 75.8439 | 75.8439 | 0.0172 | 0.0000 | 76.2729 |

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

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Maximum** | **0.1725** | **0.3633** | **0.5314** | **9.0000e-004** | **0.0760** | **0.0132** | **0.0827** | **0.0292** | **0.0126** | **0.0354** | **0.0000** | **75.8439** | **75.8439** | **0.0172** | **0.0000** | **76.2729** |

## 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 | | | | | |
| 2025 | 5.9900e-003 | 0.1622 | 0.2881 | 4.2000e-004 | 0.0342 | 6.8000e-004 | 0.0349 | 0.0131 | 6.8000e-004 | 0.0138 | 0.0000 | 36.6340 | 36.6340 | 0.0115 | 0.0000 | 36.9207 |
| 2026 | 0.1422 | 0.3078 | 0.4942 | 7.3000e-004 | 0.0000 | 5.8600e-003 | 5.8600e-003 | 0.0000 | 5.8600e-003 | 5.8600e-003 | 0.0000 | 63.4212 | 63.4212 | 0.0160 | 0.0000 | 63.8208 |
| **Maximum** | **0.1422** | **0.3078** | **0.4942** | **7.3000e-004** | **0.0342** | **5.8600e-003** | **0.0349** | **0.0131** | **5.8600e-003** | **0.0138** | **0.0000** | **63.4212** | **63.4212** | **0.0160** | **0.0000** | **63.8208** |

| | ROG | NOx | 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** | **22.00** | **9.40** | **-3.07** | **12.88** | **55.00** | **67.22** | **57.54** | **55.00** | **65.32** | **59.05** | **0.00** | **11.04** | **11.04** | **4.12** | **0.00** | **11.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **10-1-2025** | **12-31-2025** | 0.1697 | 0.1663 |
| **2** | **1-1-2026** | **3-31-2026** | 0.1115 | 0.0759 |
| **3** | **4-1-2026** | **6-30-2026** | 0.1513 | 0.0611 |
| **4** | **7-1-2026** | **9-30-2026** | 0.1435 | 0.1652 |
| | | **Highest** | 0.1697 | 0.1663 |

## 2.2 Overall Operational

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

## 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 | 0.1059 | 1.0000e-005 | 6.6000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.2900e-003 | 1.2900e-003 | 0.0000 | 0.0000 | 1.3800e-003 |
| Energy | 2.1300e-003 | 0.0194 | 0.0163 | 1.2000e-004 | | 1.4700e-003 | 1.4700e-003 | | 1.4700e-003 | 1.4700e-003 | 0.0000 | 45.7646 | 45.7646 | 4.9800e-003 | 9.4000e-004 | 46.1695 |
| Mobile | 0.0724 | 0.0775 | 0.7068 | 1.5400e-003 | 0.1869 | 1.0500e-003 | 0.1880 | 0.0499 | 9.8000e-004 | 0.0509 | 0.0000 | 141.8023 | 141.8023 | 8.6000e-003 | 6.4500e-003 | 143.9406 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 5.0585 | 0.0000 | 5.0585 | 0.2990 | 0.0000 | 12.5323 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.9074 | 1.9073 | 2.8146 | 0.0936 | 2.2400e-003 | 5.8218 |
| **Total** | **0.1804** | **0.0969** | **0.7238** | **1.6600e-003** | **0.1869** | **2.5200e-003** | **0.1894** | **0.0499** | **2.4500e-003** | **0.0523** | **5.9659** | **189.4755** | **195.4413** | **0.4061** | **9.6300e-003** | **208.4655** |

## 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 | 0.1059 | 1.0000e-005 | 6.6000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.2900e-003 | 1.2900e-003 | 0.0000 | 0.0000 | 1.3800e-003 |
| Energy | 2.1300e-003 | 0.0194 | 0.0163 | 1.2000e-004 | | 1.4700e-003 | 1.4700e-003 | | 1.4700e-003 | 1.4700e-003 | 0.0000 | 45.7646 | 45.7646 | 4.9800e-003 | 9.4000e-004 | 46.1695 |
| Mobile | 0.0724 | 0.0775 | 0.7068 | 1.5400e-003 | 0.1869 | 1.0500e-003 | 0.1880 | 0.0499 | 9.8000e-004 | 0.0509 | 0.0000 | 141.8023 | 141.8023 | 8.6000e-003 | 6.4500e-003 | 143.9406 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 5.0585 | 0.0000 | 5.0585 | 0.2990 | 0.0000 | 12.5323 |

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

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.9074 | 1.9073 | 2.8146 | 0.0936 | 2.2400e-003 | 5.8218 |
| **Total** | **0.1804** | **0.0969** | **0.7238** | **1.6600e-003** | **0.1869** | **2.5200e-003** | **0.1894** | **0.0499** | **2.4500e-003** | **0.0523** | **5.9659** | **189.4755** | **195.4413** | **0.4061** | **9.6300e-003** | **208.4655** |

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

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 10/1/2025 | 12/2/2025 | 5 | 45 | |
| 2 | Site Preparation | Site Preparation | 12/6/2025 | 12/12/2025 | 5 | 5 | |
| 3 | Grading | Grading | 12/15/2025 | 12/30/2025 | 5 | 12 | |
| 4 | Trenching | Trenching | 1/1/2026 | 2/11/2026 | 5 | 30 | |
| 5 | Building Construction | Building Construction | 2/15/2026 | 6/17/2026 | 5 | 88 | |
| 6 | Architectural Coating | Architectural Coating | 6/15/2026 | 12/15/2026 | 5 | 132 | |
| 7 | Paving | Paving | 10/15/2026 | 10/28/2026 | 5 | 10 | |

**Acres of Grading (Site Preparation Phase): 5**

**Acres of Grading (Grading Phase): 10.05**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 34,917; Non-Residential Outdoor: 11,639; Striped Parking Area: 1,961**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 0.90 | 81 | 0.73 |

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

| | | | | | |
|---|---|---|---|---|---|
| Demolition | Excavators | 3 | 5.30 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 0 | 0.00 | 247 | 0.40 |
| Demolition | Tractors/Loaders/Backhoes | 2 | 0.40 | 97 | 0.37 |
| Site Preparation | Graders | 1 | 8.00 | 187 | 0.41 |
| Site Preparation | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 1 | 6.70 | 158 | 0.38 |
| Grading | Graders | 1 | 6.70 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 6.70 | 247 | 0.40 |
| Grading | Tractors/Loaders/Backhoes | 1 | 6.70 | 97 | 0.37 |
| Trenching | Excavators | 2 | 5.30 | 158 | 0.38 |
| Trenching | Tractors/Loaders/Backhoes | 1 | 4.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 4.00 | 231 | 0.29 |
| Building Construction | Forklifts | 1 | 4.00 | 89 | 0.20 |
| Building Construction | Tractors/Loaders/Backhoes | 0 | 0.00 | 97 | 0.37 |
| Building Construction | Welders | 3 | 4.00 | 46 | 0.45 |
| Architectural Coating | Aerial Lifts | 2 | 8.00 | 63 | 0.31 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Paving | Cement and Mortar Mixers | 0 | 0.00 | 9 | 0.56 |
| Paving | Pavers | 1 | 2.40 | 130 | 0.42 |
| Paving | Paving Equipment | 1 | 2.40 | 132 | 0.36 |
| Paving | Rollers | 1 | 2.40 | 80 | 0.38 |
| Paving | Tractors/Loaders/Backhoes | 1 | 2.40 | 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 | 6 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 3 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 4 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Trenching | 3 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 5 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 3 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 4 | 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

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

## 3.2 Demolition - 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 | | | | | |
| Fugitive Dust | | | | | 0.0225 | 0.0000 | 0.0225 | 3.4100e-003 | 0.0000 | 3.4100e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 8.5200e-003 | 0.0634 | 0.1600 | 2.5000e-004 | | 3.0300e-003 | 3.0300e-003 | | 2.8100e-003 | 2.8100e-003 | 0.0000 | 22.2753 | 22.2753 | 6.8200e-003 | 0.0000 | 22.4459 |
| **Total** | **8.5200e-003** | **0.0634** | **0.1600** | **2.5000e-004** | **0.0225** | **3.0300e-003** | **0.0255** | **3.4100e-003** | **2.8100e-003** | **6.2200e-003** | **0.0000** | **22.2753** | **22.2753** | **6.8200e-003** | **0.0000** | **22.4459** |

**Unmitigated Construction Off-Site**

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

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

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0101 | 0.0000 | 0.0101 | 1.5300e-003 | 0.0000 | 1.5300e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.2900e-003 | 0.1105 | 0.1903 | 2.5000e-004 | | 4.1000e-004 | 4.1000e-004 | | 4.1000e-004 | 4.1000e-004 | 0.0000 | 22.2753 | 22.2753 | 6.8200e-003 | 0.0000 | 22.4459 |
| **Total** | **3.2900e-003** | **0.1105** | **0.1903** | **2.5000e-004** | **0.0101** | **4.1000e-004** | **0.0105** | **1.5300e-003** | **4.1000e-004** | **1.9400e-003** | **0.0000** | **22.2753** | **22.2753** | **6.8200e-003** | **0.0000** | **22.4459** |

**Mitigated Construction Off-Site**

New Classroom & Administration - Bellarmine CP - 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** |

## 3.3 Site Preparation - 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 | | | | | |
| Fugitive Dust | | | | | 0.0177 | 0.0000 | 0.0177 | 8.5600e-003 | 0.0000 | 8.5600e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.7300e-003 | 0.0286 | 0.0171 | 5.0000e-005 | | 1.1400e-003 | 1.1400e-003 | | 1.0500e-003 | 1.0500e-003 | 0.0000 | 4.0126 | 4.0126 | 1.3000e-003 | 0.0000 | 4.0451 |
| **Total** | **2.7300e-003** | **0.0286** | **0.0171** | **5.0000e-005** | **0.0177** | **1.1400e-003** | **0.0189** | **8.5600e-003** | **1.0500e-003** | **9.6100e-003** | **0.0000** | **4.0126** | **4.0126** | **1.3000e-003** | **0.0000** | **4.0451** |

### Unmitigated Construction Off-Site

New Classroom & Administration - Bellarmine CP - 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 | | | | | |
| Fugitive Dust | | | | | 7.9700e-003 | 0.0000 | 7.9700e-003 | 3.8500e-003 | 0.0000 | 3.8500e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 7.9000e-004 | 0.0134 | 0.0260 | 5.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | 0.0000 | 4.0126 | 4.0126 | 1.3000e-003 | 0.0000 | 4.0450 |
| **Total** | **7.9000e-004** | **0.0134** | **0.0260** | **5.0000e-005** | **7.9700e-003** | **7.0000e-005** | **8.0400e-003** | **3.8500e-003** | **7.0000e-005** | **3.9200e-003** | **0.0000** | **4.0126** | **4.0126** | **1.3000e-003** | **0.0000** | **4.0450** |

**Mitigated Construction Off-Site**

New Classroom & Administration - Bellarmine CP - 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** |

## 3.4 Grading - 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 | | | | | |
| Fugitive Dust | | | | | 0.0358 | 0.0000 | 0.0358 | 0.0172 | 0.0000 | 0.0172 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 6.3200e-003 | 0.0635 | 0.0507 | 1.2000e-004 | | 2.5900e-003 | 2.5900e-003 | | 2.3800e-003 | 2.3800e-003 | 0.0000 | 10.3462 | 10.3462 | 3.3500e-003 | 0.0000 | 10.4298 |
| **Total** | **6.3200e-003** | **0.0635** | **0.0507** | **1.2000e-004** | **0.0358** | **2.5900e-003** | **0.0384** | **0.0172** | **2.3800e-003** | **0.0196** | **0.0000** | **10.3462** | **10.3462** | **3.3500e-003** | **0.0000** | **10.4298** |

**Unmitigated Construction Off-Site**

New Classroom & Administration - Bellarmine CP - 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 | | | | | |
| Fugitive Dust | | | | | 0.0161 | 0.0000 | 0.0161 | 7.7600e-003 | 0.0000 | 7.7600e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.9100e-003 | 0.0383 | 0.0719 | 1.2000e-004 | | 1.9000e-004 | 1.9000e-004 | | 1.9000e-004 | 1.9000e-004 | 0.0000 | 10.3462 | 10.3462 | 3.3500e-003 | 0.0000 | 10.4298 |
| **Total** | **1.9100e-003** | **0.0383** | **0.0719** | **1.2000e-004** | **0.0161** | **1.9000e-004** | **0.0163** | **7.7600e-003** | **1.9000e-004** | **7.9500e-003** | **0.0000** | **10.3462** | **10.3462** | **3.3500e-003** | **0.0000** | **10.4298** |

**Mitigated Construction Off-Site**

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

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

## 3.5 Trenching - 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 | 4.3100e-003 | 0.0343 | 0.0815 | 1.3000e-004 | | 1.6000e-003 | 1.6000e-003 | | 1.4700e-003 | 1.4700e-003 | 0.0000 | 11.0764 | 11.0764 | 3.5800e-003 | 0.0000 | 11.1660 |
| **Total** | **4.3100e-003** | **0.0343** | **0.0815** | **1.3000e-004** | | **1.6000e-003** | **1.6000e-003** | | **1.4700e-003** | **1.4700e-003** | **0.0000** | **11.0764** | **11.0764** | **3.5800e-003** | **0.0000** | **11.1660** |

### Unmitigated Construction Off-Site

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

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

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 1.7800e-003 | 0.0554 | 0.0954 | 1.3000e-004 | | 2.1000e-004 | 2.1000e-004 | | 2.1000e-004 | 2.1000e-004 | 0.0000 | 11.0764 | 11.0764 | 3.5800e-003 | 0.0000 | 11.1659 |
| **Total** | **1.7800e-003** | **0.0554** | **0.0954** | **1.3000e-004** | | **2.1000e-004** | **2.1000e-004** | | **2.1000e-004** | **2.1000e-004** | **0.0000** | **11.0764** | **11.0764** | **3.5800e-003** | **0.0000** | **11.1659** |

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

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

## 3.6 Building 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 | | | | | |
| Off-Road | 0.0233 | 0.1763 | 0.1722 | 3.3000e-004 | | 6.6300e-003 | 6.6300e-003 | | 6.3100e-003 | 6.3100e-003 | 0.0000 | 26.5301 | 26.5301 | 5.7400e-003 | 0.0000 | 26.6736 |
| **Total** | **0.0233** | **0.1763** | **0.1722** | **3.3000e-004** | | **6.6300e-003** | **6.6300e-003** | | **6.3100e-003** | **6.3100e-003** | **0.0000** | **26.5301** | **26.5301** | **5.7400e-003** | **0.0000** | **26.6736** |

### 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 | | | | | |

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

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

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 2.8400e-003 | 0.0483 | 0.0931 | 1.6000e-004 | | 2.6000e-004 | 2.6000e-004 | | 2.6000e-004 | 2.6000e-004 | 0.0000 | 14.1075 | 14.1075 | 4.5600e-003 | 0.0000 | 14.2216 |
| **Total** | **2.8400e-003** | **0.0483** | **0.0931** | **1.6000e-004** | | **2.6000e-004** | **2.6000e-004** | | **2.6000e-004** | **2.6000e-004** | **0.0000** | **14.1075** | **14.1075** | **4.5600e-003** | **0.0000** | **14.2216** |

## 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 |

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

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

## 3.7 Architectural Coating - 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 | 0.1282 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0158 | 0.1443 | 0.2634 | 4.2000e-004 | | 4.5700e-003 | 4.5700e-003 | | 4.4800e-003 | 4.4800e-003 | 0.0000 | 36.3249 | 36.3249 | 7.2200e-003 | 0.0000 | 36.5054 |
| **Total** | **0.1440** | **0.1443** | **0.2634** | **4.2000e-004** | | **4.5700e-003** | **4.5700e-003** | | **4.4800e-003** | **4.4800e-003** | **0.0000** | **36.3249** | **36.3249** | **7.2200e-003** | **0.0000** | **36.5054** |

### 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 |

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

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

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.1282 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 9.0500e-003 | 0.1945 | 0.2892 | 4.2000e-004 | | 5.3500e-003 | 5.3500e-003 | | 5.3500e-003 | 5.3500e-003 | 0.0000 | 36.3249 | 36.3249 | 7.2200e-003 | 0.0000 | 36.5053 |
| **Total** | **0.1373** | **0.1945** | **0.2892** | **4.2000e-004** | | **5.3500e-003** | **5.3500e-003** | | **5.3500e-003** | **5.3500e-003** | **0.0000** | **36.3249** | **36.3249** | **7.2200e-003** | **0.0000** | **36.5053** |

## 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 |

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

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

## 3.8 Paving - 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 | 8.8000e-004 | 8.4400e-003 | 0.0143 | 2.0000e-005 | | 4.0000e-004 | 4.0000e-004 | | 3.6000e-004 | 3.6000e-004 | 0.0000 | 1.9125 | 1.9125 | 6.2000e-004 | 0.0000 | 1.9279 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **8.8000e-004** | **8.4400e-003** | **0.0143** | **2.0000e-005** | | **4.0000e-004** | **4.0000e-004** | | **3.6000e-004** | **3.6000e-004** | **0.0000** | **1.9125** | **1.9125** | **6.2000e-004** | **0.0000** | **1.9279** |

### 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 |

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

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

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 3.6000e-004 | 9.5600e-003 | 0.0165 | 2.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | 0.0000 | 1.9125 | 1.9125 | 6.2000e-004 | 0.0000 | 1.9279 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **3.6000e-004** | **9.5600e-003** | **0.0165** | **2.0000e-005** | | **4.0000e-005** | **4.0000e-005** | | **4.0000e-005** | **4.0000e-005** | **0.0000** | **1.9125** | **1.9125** | **6.2000e-004** | **0.0000** | **1.9279** |

## 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 |

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

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

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.0724 | 0.0775 | 0.7068 | 1.5400e-003 | 0.1869 | 1.0500e-003 | 0.1880 | 0.0499 | 9.8000e-004 | 0.0509 | 0.0000 | 141.8023 | 141.8023 | 8.6000e-003 | 6.4500e-003 | 143.9406 |
| Unmitigated | 0.0724 | 0.0775 | 0.7068 | 1.5400e-003 | 0.1869 | 1.0500e-003 | 0.1880 | 0.0499 | 9.8000e-004 | 0.0509 | 0.0000 | 141.8023 | 141.8023 | 8.6000e-003 | 6.4500e-003 | 143.9406 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Office Building | 140.65 | 31.91 | 10.11 | 254,423 | 254,423 |
| High School | 124.38 | 35.18 | 15.12 | 251,416 | 251,416 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 265.02 | 67.10 | 25.22 | 505,839 | 505,839 |

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

## 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 |
| High School | 9.50 | 7.30 | 7.30 | 77.80 | 17.20 | 5.00 | 75 | 19 | 6 |
| 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 | 0.575564 | 0.056293 | 0.184251 | 0.115043 | 0.020151 | 0.005257 | 0.008159 | 0.006240 | 0.000877 | 0.000356 | 0.024310 | 0.000874 | 0.002624 |
| High School | 0.575564 | 0.056293 | 0.184251 | 0.115043 | 0.020151 | 0.005257 | 0.008159 | 0.006240 | 0.000877 | 0.000356 | 0.024310 | 0.000874 | 0.002624 |
| Parking Lot | 0.575564 | 0.056293 | 0.184251 | 0.115043 | 0.020151 | 0.005257 | 0.008159 | 0.006240 | 0.000877 | 0.000356 | 0.024310 | 0.000874 | 0.002624 |

# 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 24.6644 | 24.6644 | 4.5700e-003 | 5.5000e-004 | 24.9439 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 24.6644 | 24.6644 | 4.5700e-003 | 5.5000e-004 | 24.9439 |
| NaturalGas Mitigated | 2.1300e-003 | 0.0194 | 0.0163 | 1.2000e-004 | | 1.4700e-003 | 1.4700e-003 | | 1.4700e-003 | 1.4700e-003 | 0.0000 | 21.1002 | 21.1002 | 4.0000e-004 | 3.9000e-004 | 21.2256 |

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NaturalGas Unmitigated | 2.1300e-003 | 0.0194 | 0.0163 | 1.2000e-004 | | 1.4700e-003 | 1.4700e-003 | | 1.4700e-003 | 1.4700e-003 | 0.0000 | 21.1002 | 21.1002 | 4.0000e-004 | 3.9000e-004 | 21.2256 |

## 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 | 233896 | 1.2600e-003 | 0.0115 | 9.6300e-003 | 7.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | 0.0000 | 12.4816 | 12.4816 | 2.4000e-004 | 2.3000e-004 | 12.5557 |
| High School | 161507 | 8.7000e-004 | 7.9200e-003 | 6.6500e-003 | 5.0000e-005 | | 6.0000e-004 | 6.0000e-004 | | 6.0000e-004 | 6.0000e-004 | 0.0000 | 8.6186 | 8.6186 | 1.7000e-004 | 1.6000e-004 | 8.6698 |
| 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** | | **2.1300e-003** | **0.0194** | **0.0163** | **1.2000e-004** | | **1.4700e-003** | **1.4700e-003** | | **1.4700e-003** | **1.4700e-003** | **0.0000** | **21.1002** | **21.1002** | **4.1000e-004** | **3.9000e-004** | **21.2256** |

### 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 | 233896 | 1.2600e-003 | 0.0115 | 9.6300e-003 | 7.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | 0.0000 | 12.4816 | 12.4816 | 2.4000e-004 | 2.3000e-004 | 12.5557 |
| High School | 161507 | 8.7000e-004 | 7.9200e-003 | 6.6500e-003 | 5.0000e-005 | | 6.0000e-004 | 6.0000e-004 | | 6.0000e-004 | 6.0000e-004 | 0.0000 | 8.6186 | 8.6186 | 1.7000e-004 | 1.6000e-004 | 8.6698 |

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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** | | **2.1300e-003** | **0.0194** | **0.0163** | **1.2000e-004** | | **1.4700e-003** | **1.4700e-003** | | **1.4700e-003** | **1.4700e-003** | **0.0000** | **21.1002** | **21.1002** | **4.1000e-004** | **3.9000e-004** | **21.2256** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Office Building | 247900 | 20.0153 | 3.7100e-003 | 4.5000e-004 | 20.2422 |
| High School | 46144.8 | 3.7257 | 6.9000e-004 | 8.0000e-005 | 3.7679 |
| Parking Lot | 11436.3 | 0.9234 | 1.7000e-004 | 2.0000e-005 | 0.9338 |
| **Total** | | **24.6644** | **4.5700e-003** | **5.5000e-004** | **24.9439** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Office Building | 247900 | 20.0153 | 3.7100e-003 | 4.5000e-004 | 20.2422 |

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

| | | | | | |
|---|---|---|---|---|---|
| High School | 46144.8 | 3.7257 | 6.9000e-004 | 8.0000e-005 | 3.7679 |
| Parking Lot | 11436.3 | 0.9234 | 1.7000e-004 | 2.0000e-005 | 0.9338 |
| **Total** | | **24.6644** | **4.5700e-003** | **5.5000e-004** | **24.9439** |

## 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 | 0.1059 | 1.0000e-005 | 6.6000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.2900e-003 | 1.2900e-003 | 0.0000 | 0.0000 | 1.3800e-003 |
| Unmitigated | 0.1059 | 1.0000e-005 | 6.6000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.2900e-003 | 1.2900e-003 | 0.0000 | 0.0000 | 1.3800e-003 |

### 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 | | | | | |

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

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 0.0128 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0930 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 6.0000e-005 | 1.0000e-005 | 6.6000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.2900e-003 | 1.2900e-003 | 0.0000 | 0.0000 | 1.3800e-003 |
| **Total** | **0.1059** | **1.0000e-005** | **6.6000e-004** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **1.2900e-003** | **1.2900e-003** | **0.0000** | **0.0000** | **1.3800e-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 | 0.0128 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0930 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 6.0000e-005 | 1.0000e-005 | 6.6000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.2900e-003 | 1.2900e-003 | 0.0000 | 0.0000 | 1.3800e-003 |
| **Total** | **0.1059** | **1.0000e-005** | **6.6000e-004** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **1.2900e-003** | **1.2900e-003** | **0.0000** | **0.0000** | **1.3800e-003** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 2.8146 | 0.0936 | 2.2400e-003 | 5.8218 |
| Unmitigated | 2.8146 | 0.0936 | 2.2400e-003 | 5.8218 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Office Building | 2.56648 / 1.573 | 2.3800 | 0.0839 | 2.0100e-003 | 5.0769 |
| High School | 0.293529 / 0.754789 | 0.4347 | 9.6300e-003 | 2.3000e-004 | 0.7449 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **2.8146** | **0.0936** | **2.2400e-003** | **5.8218** |

**Mitigated**

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Office Building | 2.56648 / 1.573 | 2.3800 | 0.0839 | 2.0100e-003 | 5.0769 |
| High School | 0.293529 / 0.754789 | 0.4347 | 9.6300e-003 | 2.3000e-004 | 0.7449 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **2.8146** | **0.0936** | **2.2400e-003** | **5.8218** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 5.0585 | 0.2990 | 0.0000 | 12.5323 |
| Unmitigated | 5.0585 | 0.2990 | 0.0000 | 12.5323 |

### 8.2 Waste by Land Use

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

## Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Office Building | 13.43 | 2.7262 | 0.1611 | 0.0000 | 6.7540 |
| High School | 11.49 | 2.3324 | 0.1378 | 0.0000 | 5.7783 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **5.0585** | **0.2990** | **0.0000** | **12.5323** |

## Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Office Building | 13.43 | 2.7262 | 0.1611 | 0.0000 | 6.7540 |
| High School | 11.49 | 2.3324 | 0.1378 | 0.0000 | 5.7783 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **5.0585** | **0.2990** | **0.0000** | **12.5323** |

New Classroom & Administration - Bellarmine CP - Santa Clara County, Annual

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

Liccardo Renovation - Bellarmine College Prep - Santa Clara County, Annual

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

# Liccardo Renovation - Bellarmine College Prep

**Santa Clara County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| High School | 22.66 | 1000sqft | 0.75 | 22,661.00 | 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)** | 178 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

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

Project Characteristics - San Jose Clean Energy 2020 rate = 178 lb/MWh.

Land Use - Total lot acrage and square footage provided by construction worksheet.

Construction Phase - Provided by construction worksheet.

Off-road Equipment - Provided in construction sheet.

Construction Off-road Equipment Mitigation - BMPs, tier 4 interim mitigation.

Trips and VMT - EMFAC2021 0 adjustments.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |

Liccardo Renovation - Bellarmine College Prep - Santa Clara County, Annual

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

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDays | 5.00 | 152.00 |
| tblLandUse | LandUseSquareFeet | 22,660.00 | 22,661.00 |
| tblLandUse | LotAcreage | 0.52 | 0.75 |
| tblOffRoadEquipment | UsageHours | 6.00 | 0.50 |
| tblProjectCharacteristics | CO2IntensityFactor | 807.98 | 178 |
| tblTripsAndVMT | WorkerTripNumber | 2.00 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2026 | 0.1199 | 0.0176 | 0.0332 | 5.0000e-005 | 0.0000 | 5.00E-04 | 5.0000e-004 | 0 | 4.90E-04 | 4.9000e-004 | 0.0000 | 4.5602 | 4.5602 | 1.0400e-003 | 0.0000 | 4.5862 |
| **Maximum** | **0.1199** | **0.0176** | **0.0332** | **5.0000e-005** | **0.0000** | **5.0000e-004** | **5.0000e-004** | **0.0000** | **4.9000e-004** | **4.9000e-004** | **0.0000** | **4.5602** | **4.5602** | **1.0400e-003** | **0.0000** | **4.5862** |

**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 | | | | | |
| 2026 | 0.1193 | 0.0255 | 0.0370 | 5.0000e-005 | 0.0000 | 7.90E-04 | 7.9000e-004 | 0 | 7.9000e-004 | 7.9000e-004 | 0.0000 | 4.5602 | 4.5602 | 1.0400e-003 | 0.0000 | 4.5862 |

Liccardo Renovation - Bellarmine College Prep - Santa Clara County, Annual

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

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Maximum** | **0.1193** | **0.0255** | **0.0370** | **5.0000e-005** | **0.0000** | **7.9000e-004** | **7.9000e-004** | **0.0000** | **7.9000e-004** | **7.9000e-004** | **0.0000** | **4.5602** | **4.5602** | **1.0400e-003** | **0.0000** | **4.5862** |

| | ROG | NOx | 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** | **0.49** | **-44.78** | **-11.47** | **0.00** | **0.00** | **-58.00** | **-58.00** | **0.00** | **-61.22** | **-61.22** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **1-1-2026** | **3-31-2026** | 0.0582 | 0.0613 |
| **2** | **4-1-2026** | **6-30-2026** | 0.0588 | 0.0620 |
| **3** | **7-1-2026** | **9-30-2026** | 0.0207 | 0.0218 |
| | | **Highest** | 0.0588 | 0.0620 |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Architectural Coating | Architectural Coating | 1/1/2026 | 8/1/2026 | 5 | 152 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 33,992; Non-Residential Outdoor: 11,331; Striped Parking Area: 0 (Architectural**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Aerial Lifts | 1 | 2.10 | 63 | 0.31 |
| Architectural Coating | Air Compressors | 1 | 0.50 | 78 | 0.48 |

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Liccardo Renovation - Bellarmine College Prep - Santa Clara County, Annual

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

**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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 2 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

## 3.2 Architectural Coating - 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 | 0.1182 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.7600e-003 | 0.0176 | 0.0332 | 5.0000e-005 | | 5.0000e-004 | 5.0000e-004 | | 4.9000e-004 | 4.9000e-004 | 0.0000 | 4.5602 | 4.5602 | 1.0400e-003 | 0.0000 | 4.5862 |
| **Total** | **0.1199** | **0.0176** | **0.0332** | **5.0000e-005** | | **5.0000e-004** | **5.0000e-004** | | **4.9000e-004** | **4.9000e-004** | **0.0000** | **4.5602** | **4.5602** | **1.0400e-003** | **0.0000** | **4.5862** |

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Liccardo Renovation - Bellarmine College Prep - Santa Clara County, Annual

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

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

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.1182 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.1700e-003 | 0.0255 | 0.0370 | 5.0000e-005 | | 7.9000e-004 | 7.9000e-004 | | 7.9000e-004 | 7.9000e-004 | 0.0000 | 4.5602 | 4.5602 | 1.0400e-003 | 0.0000 | 4.5862 |
| **Total** | **0.1193** | **0.0255** | **0.0370** | **5.0000e-005** | | **7.9000e-004** | **7.9000e-004** | | **7.9000e-004** | **7.9000e-004** | **0.0000** | **4.5602** | **4.5602** | **1.0400e-003** | **0.0000** | **4.5862** |

## 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 | | | | | |

Liccardo Renovation - Bellarmine College Prep - Santa Clara County, Annual

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

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

Matthewson Renovation - Bellarmine CP, San Jose - Santa Clara County, Annual

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

# Matthewson Renovation - Bellarmine CP, San Jose

**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 | 9.43 | 1000sqft | 0.50 | 9,430.00 | 0 |
| High School | 9.43 | 1000sqft | 0.00 | 9,430.00 | 0 |
| Parking Lot | 22.00 | Space | 0.00 | 7,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 4 | | | **Operational Year** | 2028 |
| **Utility Company** | San Jose Clean Energy | | | | |
| **CO2 Intensity (lb/MWhr)** | 178 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

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

Project Characteristics - San Jose Clean Energy 2020 rate = 178 lb/MWh.

Land Use - Total lot acreage and square footage provided by construction worksheet provided by applicant.

Construction Phase - Construction schedule provided by construction worksheet.

Off-road Equipment - Provided by construction worksheet.

Trips and VMT - EMFAC 2021 adjustment 0 trips.

Construction Off-road Equipment Mitigation - BMPs, T4i interim mitigation.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |

Matthewson Renovation - Bellarmine CP, San Jose - Santa Clara County, Annual

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

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstructionPhase | NumDays | 5.00 | 152.00 |
| tblConstructionPhase | PhaseEndDate | 6/22/2027 | 8/1/2027 |
| tblConstructionPhase | PhaseStartDate | 6/16/2027 | 1/1/2027 |
| tblLandUse | LandUseSquareFeet | 8,800.00 | 7,000.00 |
| tblLandUse | LotAcreage | 0.22 | 0.50 |
| tblLandUse | LotAcreage | 0.22 | 0.00 |
| tblLandUse | LotAcreage | 0.20 | 0.00 |
| tblOffRoadEquipment | LoadFactor | 0.31 | 0.31 |
| tblOffRoadEquipment | OffRoadEquipmentType | | Aerial Lifts |
| tblOffRoadEquipment | UsageHours | 6.00 | 1.30 |
| tblProjectCharacteristics | CO2IntensityFactor | 807.98 | 178 |
| tblTripsAndVMT | WorkerTripNumber | 2.00 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2027 | 0.1033 | 0.0393 | 0.0726 | 1.1000e-004 | 0.0000 | 1.1900e-003 | 1.1900e-003 | 0.0000 | 1.1700e-003 | 1.1700e-003 | 0.0000 | 9.9903 | 9.9903 | 2.1100e-003 | 0.0000 | 10.043 |
| **Maximum** | **0.1033** | **0.0393** | **0.0726** | **1.1000e-004** | **0.0000** | **1.19E-03** | **1.1900e-003** | **0** | **1.17E-03** | **1.1700e-003** | **0.0000** | **9.9903** | **9.9903** | **2.1100e-003** | **0.0000** | **10.0430** |

Matthewson Renovation - Bellarmine CP, San Jose - 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**

| | ROG | NOx | CO | SO2 | 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 | | | | | |
| 2027 | 0.1017 | 0.0545 | 0.0802 | 1.1000e-004 | 0.0000 | 1.5900e-003 | 1.5900e-003 | 0.0000 | 1.5900e-003 | 1.5900e-003 | 0.0000 | 9.9903 | 9.9903 | 2.1100e-003 | 0.0000 | 10.0430 |
| **Maximum** | **0.1017** | **0.0545** | **0.0802** | **1.1000e-004** | **0** | **1.59E-03** | **1.5900e-003** | **0** | **1.5900e-003** | **1.5900e-003** | **0.0000** | **9.9903** | **9.9903** | **2.1100e-003** | **0.0000** | **10.0430** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **1.56** | **-38.93** | **-10.48** | **0.00** | **0.00** | **-33.61** | **-33.61** | **0.00** | **-35.90** | **-35.90** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **1-1-2027** | **3-31-2027** | 0.0607 | 0.0665 |
| **2** | **4-1-2027** | **6-30-2027** | 0.0614 | 0.0672 |
| **3** | **7-1-2027** | **9-30-2027** | 0.0216 | 0.0236 |
| | | **Highest** | 0.0614 | 0.0672 |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Architectural Coating | Architectural Coating | 1/1/2027 | 8/1/2027 | 5 | 152 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

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

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 28,290; Non-Residential Outdoor: 9,430; Striped Parking Area: 420 (Architectural**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 1.30 | 78 | 0.48 |
| Architectural Coating | Aerial Lifts | 1 | 4.20 | 63 | 0.31 |

**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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 2 | 0.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

## 3.2 Architectural Coating - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.0992 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.1400e-003 | 0.0393 | 0.0726 | 1.1000e-004 | | 1.1900e-003 | 1.1900e-003 | | 1.1700e-003 | 1.1700e-003 | 0.0000 | 9.9903 | 9.9903 | 2.1100e-003 | 0.0000 | 10.0430 |
| **Total** | **0.1033** | **0.0393** | **0.0726** | **1.1000e-004** | | **1.1900e-003** | **1.1900e-003** | | **1.1700e-003** | **1.1700e-003** | **0.0000** | **9.9903** | **9.9903** | **2.1100e-003** | **0.0000** | **10.0430** |

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**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 | | | | | |
| Archit. Coating | 0.0992 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.5200e-003 | 0.0545 | 0.0802 | 1.1000e-004 | | 1.5900e-003 | 1.5900e-003 | | 1.5900e-003 | 1.5900e-003 | 0.0000 | 9.9903 | 9.9903 | 2.1100e-003 | 0.0000 | 10.0430 |
| **Total** | **0.1017** | **0.0545** | **0.0802** | **1.1000e-004** | | **1.5900e-003** | **1.5900e-003** | | **1.5900e-003** | **1.5900e-003** | **0.0000** | **9.9903** | **9.9903** | **2.1100e-003** | **0.0000** | **10.0430** |

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Matthewson Renovation - Bellarmine CP, San Jose - 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** |

# Attachment 3:  EMFAC2021 Calculations

## Bellarmine College Prep Summary of Construction Traffic Emissions (EMFAC2021)

| Pollutants<br>YEAR | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | NBio- CO2 | CH4 | N2O | CO2e | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | *Tons* | | | | | | | *Metric Tons* | | | |
| **Criteria Pollutants** | | | | | | | | | | | | | | | |
| *2023* | 0.0003 | 0.0002 | 0.0030 | 0.0000 | 0.0007 | 0.0000 | 0.0007 | 0.0001 | 0.0000 | 0.0001 | 0.6270 | 0.0000 | 0.0000 | 0.6336 | Berchamn |
| *2024* | 0.0071 | 0.0533 | 0.0869 | 0.0005 | 0.0217 | 0.0036 | 0.0252 | 0.0033 | 0.0015 | 0.0047 | 44.4587 | 0.0027 | 0.0052 | 46.0679 | Wade |
| *2025* | 0.00329 | 0.025022 | 0.040329 | 0.000221 | 0.010643 | 0.00175 | 0.012393 | 0.001601 | 0.000723 | 0.002325 | 21.4082024 | 0.001283 | 0.002488 | 22.182 | Wade |
| *2026* | 0.005841 | 0.051387 | 0.074335 | 0.000454 | 0.020862 | 0.003817 | 0.024679 | 0.003139 | 0.001581 | 0.00472 | 44.3189192 | 0.002739 | 0.005408 | 45.999 | New Classroom+Liccardo |
| *2027* | 0.000356 | 0.000264 | 0.003652 | 9.81E-06 | 0.001082 | 6.31E-05 | 0.001145 | 0.000163 | 2.21E-05 | 0.000185 | 0.90055651 | 2.8E-05 | 2.53E-05 | 0.909 | Matthewson |
| **Toxic Air Contaminants (0.5 Mile Trip Length)** | | | | | | | | | | | | | | | |
| *2023* | 0.0003 | 0.0001 | 0.0009 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0431 | 0.0000 | 0.0000 | 0.0457 | |
| *2024* | 0.0060 | 0.0161 | 0.0299 | 0.0000 | 0.0011 | 0.0002 | 0.0012 | 0.0002 | 0.0001 | 0.0002 | 3.8508 | 0.0008 | 0.0006 | 4.0543 | |
| *2025* | 0.002792 | 0.007744 | 0.014027 | 1.88E-05 | 0.000517 | 9.56E-05 | 0.000612 | 7.78E-05 | 4.32E-05 | 0.000121 | 1.85326252 | 0.00038 | 0.000295 | 1.9507903 | |
| *2026* | 0.004951 | 0.014146 | 0.025097 | 3.4E-05 | 0.00095 | 0.000176 | 0.001126 | 0.000143 | 7.9E-05 | 0.000222 | 3.36719308 | 0.000691 | 0.000537 | 3.54462868 | |
| *2027* | 0.000322 | 9.18E-05 | 0.001137 | 6.73E-07 | 5.01E-05 | 3.55E-06 | 5.36E-05 | 7.54E-06 | 1.6E-06 | 9.14E-06 | 0.06178056 | 2.03E-05 | 1.01E-05 | 0.06529715 | |

## Berchman Hall 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* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 8 | 0 | 104 | 0 | 0 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 1123.2 | 0 | 0 |
| Trenching | 8 | 0 | 88 | 0 | 0 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 950.4 | 0 | 0 |

| **Number of Days Per Year** | | | | | |
|---|---|---|---|---|---|
| 2023 | 10/15/23 | 11/15/23 | 32 | 24 | |
| | | | 32 | **24** | ***Total Workdays*** |

| Phase | Start Date | End Date | Days/Week | Workdays |
|---|---|---|---|---|
| Site Preparation | 10/15/2023 | 11/1/2023 | 5 | 13 |
| Trenching | 11/1/2023 | 11/15/2023 | 5 | 11 |

## Liccardo Center 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* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 2 | 0 | 304 | 0 | 0 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 3283.2 | 0 | 0 |

| **Number of Days Per Year** | | | | | |
|---|---|---|---|---|---|
| 2026 | 1/1/26 | 8/1/26 | 213 | 152 | |
| | | | 213 | **152** | ***Total Workdays*** |

| Phase | Start Date | End Date | Days/Week | Workdays |
|---|---|---|---|---|
| Architectural Coating | 1/1/2026 | 8/1/2026 | 5 | 152 |

## Matthewson 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* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 2 | 0 | 304 | 0 | 0 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 3283.2 | 0 | 0 |

| **Number of Days Per Year** | | | | | |
|---|---|---|---|---|---|
| 2027 | 1/1/27 | 8/1/27 | 213 | 152 | |
| | | | 213 | **152** | ***Total Workdays*** |

| Phase | Start Date | End Date | Days/Week | Workdays |
|---|---|---|---|---|
| Architectural Coating | 1/1/2027 | 8/1/2027 | 5 | 152 |

## New Classroom/Admin 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 | 15 | 0 | 675 | 0 | 208 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 7290 | 0 | 4160 |
| Site Preparation | 8 | 0 | 40 | 0 | 0 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 432 | 0 | 0 |
| Grading | 10 | 0 | 120 | 0 | 375 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 1296 | 0 | 7500 |
| Trenching | 8 | 0 | 240 | 0 | 0 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 2592 | 0 | 0 |
| Building Construction | 22 | 9 | 1936 | 792 | 208 | 10.8 | 7.3 | 7.3 | LD_Mix | HDT_Mix | HHDT | 20908.8 | 5781.6 | 1518.4 |
| Architectural Coating | 4 | 0 | 528 | 0 | 0 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 5702.4 | 0 | 0 |
| Paving | 10 | 0 | 100 | 0 | 240 | 10.8 | 7.3 | 7.3 | LD_Mix | HDT_Mix | HHDT | 1080 | 0 | 1752 |

| **Number of Days Per Year** | | | | | |
|---|---|---|---|---|---|
| 2025-2026 | 10/1/25 | 12/15/26 | 441 | 316 | |
| | | | 441 | **316** | ***Total Workdays*** |

| Phase | Start Date | End Date | Days/Week | Workdays |
|---|---|---|---|---|
| Demolition | 10/1/2025 | 12/2/2025 | 5 | 45 |
| Site Preparation | 12/6/2025 | 12/12/2025 | 5 | 5 |
| Grading | 12/15/2025 | 12/30/2025 | 5 | 12 |
| Trenching | 1/1/2026 | 2/11/2026 | 5 | 30 |
| Building Construction | 2/15/2026 | 6/17/2026 | 5 | 88 |
| Architectural Coating | 6/15/2026 | 12/15/2026 | 5 | 132 |
| Paving | 10/15/2026 | 10/28/2026 | 5 | 10 |

## Wade Academic Hall 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 | 13 | 0 | 195 | 0 | 101 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 2106 | 0 | 2020 |
| Site Preparation | 10 | 0 | 50 | 0 | 0 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 540 | 0 | 0 |
| Grading | 10 | 0 | 120 | 0 | 375 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 1296 | 0 | 7500 |
| Trenching | 8 | 0 | 240 | 0 | 0 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 2592 | 0 | 0 |
| Building Construction | 32 | 13 | 4224 | 1716 | 520 | 10.8 | 7.3 | 7.3 | LD_Mix | HDT_Mix | HHDT | 45619.2 | 12526.8 | 3796 |
| Architectural Coating | 6 | 0 | 1464 | 0 | 0 | 10.8 | 7.3 | 20 | LD_Mix | HDT_Mix | HHDT | 15811.2 | 0 | 0 |
| Paving | 13 | 0 | 130 | 0 | 380 | 10.8 | 7.3 | 7.3 | LD_Mix | HDT_Mix | HHDT | 1404 | 0 | 2774 |

| **Number of Days Per Year** | | | | | |
|---|---|---|---|---|---|
| 2023-2024 | 11/15/23 | 12/31/24 | 413 | 296 | |
| 2025 | 1/1/25 | 7/22/25 | 203 | 145 | |
| | | | 616 | **441** | ***Total Workdays*** |

| Phase | Start Date | End Date | Days/Week | Workdays |
|---|---|---|---|---|
| Demolition | 11/15/2023 | 12/5/2023 | 5 | 15 |
| Site Preparation | 12/6/2023 | 12/12/2023 | 5 | 5 |
| Grading | 12/15/2023 | 1/1/2024 | 5 | 12 |
| Trenching | 1/1/2024 | 2/9/2024 | 5 | 30 |
| Building Construction | 2/15/2024 | 8/16/2024 | 5 | 132 |
| Architectural Coating | 8/15/2024 | 7/22/2025 | 5 | 244 |
| Paving | 6/1/2025 | 6/13/2025 | 5 | 10 |

| Category | | Mix % | Adj | ROG_DIURN | ROG_HTSK | ROG_IDLEX | ROG_RESTL | ROG_RUNEX | ROG_RUNLS | ROG_STREX | NOX_IDLEX | NOX_RUNEX | NOX_STREX | CO_IDLEX | CO_RUNEX | CO_STREX | SO2_IDLEX | SO2_RUNEX | SO2_STREX | Road Dust PM10 | PM10_PMBW | PM10_PMTW | PM10_IDLEX | PM10_RUNEX | PM10_STREX | Road Dust PM25 | PM25_PMBW | PM25_PMTW | PM25_IDLEX | PM25_RUNEX | PM25_STREX | CO2_NBIO_IDLEX | CO2_NBIO_RUNEX | CO2_NBIO_STREX | CH4_IDLEX | CH4_RUNEX | CH4_STREX | N2O_IDLE | N2O_RUNEX | N2O_STREX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 19 | 22 | 23 | 8 | 9 | 10 | | | | | | |
| Hauling | HHDT | 100.0 | 1 | 0.000287604 | 8.55424E-05 | 0.332404817 | 0 | 0.01953334 | 0.00077057 | 5.28839E-07 | 4.1629787 | 1.930480649 | 2.692504026 | 5.211988 | 0.7948148 | 0.000555 | 0.0074608 | 0.01488345 | 2.65981E-07 | | 0.081444 | 0.035123 | 0.002283 | 0.025833 | 9.98684E-07 | | 0.028506 | 0.008781 | 0.002179 | 0.0247116 | 9.18E-07 | 850.51039 | 1643.0479 | 0.0269048 | 0.235881 | 0.125647179 | 9.74075E-08 | 0.136898 | 0.262148415 | 2.4682E-05 |
| | MHD | 0.0 | 0 | 0.028424515 | 0.006961572 | 0.027529656 | 0 | 0.04434978 | 0.05660825 | 0.052337336 | 0.9240436 | 1.219274528 | 1.396113281 | 0.673566 | 0.4037701 | 1.152494 | 0.0015021 | 0.011767743 | 8.73526E-05 | 0.299 | 0.045469 | 0.012 | 0.002542 | 0.014931 | 0.000112942 | 0.04499 | 0.015914 | 0.003 | 0.002431 | 0.0142769 | 0.000104 | 161.33734 | 1239.5984 | 8.8359741 | 0.012943 | 0.009906777 | 0.009245497 | 0.024829 | 0.159885109 | 0.00609652 |
| Vendor | HHDT | 50.0 | 0.5 | 0.000143802 | 4.27712E-05 | 0.166202408 | 0 | 0.00976667 | 0.00038529 | 2.6442E-07 | 2.0814893 | 0.965240325 | 1.346252013 | 2.605994 | 0.3974074 | 0.000277 | 0.0037304 | 0.007441725 | 1.32991E-07 | | 0.040722 | 0.017561 | 0.001142 | 0.012916 | 4.99342E-07 | | 0.014253 | 0.00439 | 0.001089 | 0.0123558 | 4.59E-07 | 425.2552 | 821.52395 | 0.0134524 | 0.11794 | 0.06282359 | 4.87037E-08 | 0.068449 | 0.131074208 | 1.2341E-05 |
| | MHD | 50.0 | 0.5 | 0.014212257 | 0.003480786 | 0.013764828 | 0 | 0.02217489 | 0.02830413 | 0.026168668 | 0.4620218 | 0.609637264 | 0.698056641 | 0.336783 | 0.2018851 | 0.576247 | 0.0007511 | 0.005883871 | 4.36763E-05 | | 0.022735 | 0.006 | 0.001271 | 0.007465 | 5.64711E-05 | | 0.007957 | 0.0015 | 0.001216 | 0.0071384 | 5.19E-05 | 80.66867 | 619.79918 | 4.417987 | 0.006471 | 0.004953388 | 0.004622749 | 0.012414 | 0.079942554 | 0.00304826 |
| | | | 1 | 0.01435606 | 0.003523557 | 0.179967236 | 0 | 0.03194156 | 0.02868941 | 0.026168932 | 2.5435111 | 1.574877589 | 2.044308654 | 2.942777 | 0.5992925 | 0.576524 | 0.0044815 | 0.013325596 | 4.38093E-05 | 0.299 | 0.063457 | 0.023561 | 0.002413 | 0.020382 | 5.69705E-05 | 0.04499 | 0.02221 | 0.00589 | 0.002305 | 0.0194942 | 5.24E-05 | 505.92387 | 1441.3231 | 4.4314394 | 0.124412 | 0.067776978 | 0.004622797 | 0.080863 | 0.211016762 | 0.0030606 |
| Worker | LDA | 50.0 | 0.5 | 0.143306127 | 0.042683769 | 0 | 0 | 0.0045285 | 0.10768412 | 0.159592017 | 0 | 0.021192179 | 0.122461753 | 0 | 0.3503116 | 1.546631 | 0 | 0.001247244 | 0.00032278 | | 0.0036 | 0.004 | 0 | 0.000614 | 0.000990927 | | 0.00126 | 0.001 | 0 | 0.0005655 | 0.000911 | 0 | 126.17319 | 32.650143 | 0 | 0.001154545 | 0.034539145 | 0 | 0.00224937 | 0.01544107 |
| | LDT1 | 25.0 | 0.25 | 0.156677436 | 0.04332923 | 0 | 0 | 0.00778025 | 0.12516577 | 0.145126689 | 0 | 0.035722679 | 0.100614187 | 0 | 0.3863947 | 1.408382 | 0 | 0.000818289 | 0.000217331 | | 0.002307 | 0.002 | 0 | 0.000514 | 0.000767762 | | 0.000807 | 0.0005 | 0 | 0.0004735 | 0.000706 | 0 | 82.773349 | 21.983712 | 0 | 0.00173807 | 0.028010471 | 0 | 0.00255413 | 0.00991395 |
| | LDT2 | 25.0 | 0.25 | 0.074138692 | 0.021036563 | 0 | 0 | 0.00307324 | 0.05534742 | 0.101569939 | 0 | 0.019062039 | 0.088569484 | 0 | 0.2213791 | 0.96209 | 0 | 0.000853405 | 0.000219425 | | 0.002219 | 0.002 | 0 | 0.000345 | 0.000540097 | | 0.000777 | 0.0005 | 0 | 0.0003173 | 0.000497 | 0 | 86.33608 | 22.19552 | 0 | 0.000769908 | 0.021709383 | 0 | 0.001616766 | 0.00956276 |
| | | | 1 | 0.374122256 | 0.107049562 | 0 | 0 | 0.015382 | 0.28819731 | 0.406288645 | 0 | 0.075976897 | 0.311645425 | 0 | 0.9580854 | 3.917103 | 0 | 0.002918938 | 0.000759537 | 0.299 | 0.008126 | 0.008 | 0 | 0.001473 | 0.002298785 | 0.04499 | 0.002844 | 0.002 | 0 | 0.0013563 | 0.002114 | 0 | 295.28262 | 76.829375 | 0 | 0.003662524 | 0.084258998 | 0 | 0.006420266 | 0.03491778 |

| Category | | Mix % | Adj | ROG_DIURN | ROG_HTSK | ROG_IDLEX | ROG_RESTL | ROG_RUNEX | ROG_RUNLS | ROG_STREX | NOX_IDLEX | NOX_RUNEX | NOX_STREX | CO_IDLEX | CO_RUNEX | CO_STREX | SO2_IDLEX | SO2_RUNEX | SO2_STREX | Road Dust PM10 | PM10_PMBW | PM10_PMTW | PM10_IDLEX | PM10_RUNEX | PM10_STREX | Road Dust PM25 | PM25_PMBW | PM25_PMTW | PM25_IDLEX | PM25_RUNEX | PM25_STREX | CO2_NBIO_IDLEX | CO2_NBIO_RUNEX | CO2_NBIO_STREX | CH4_IDLEX | CH4_RUNEX | CH4_STREX | N2O_IDLE | N2O_RUNEX | N2O_STREX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | HHDT | 100.0 | 1 | 0.000195977 | 5.82846E-05 | 0.329789936 | 0 | 0.01860554 | 0.00052501 | 4.36152E-07 | 4.075118 | 1.850604526 | 2.731408381 | 5.19556 | 0.7748868 | 0.000626 | 0.0072803 | 0.014635771 | 1.935E-07 | | 0.081298 | 0.035125 | 0.002182 | 0.025474 | 6.09682E-07 | | 0.028454 | 0.008781 | 0.002082 | 0.024688 | 5.61E-07 | 832.31669 | 1617.1297 | 0.019573 | 0.232934 | 0.121678903 | 8.02768E-08 | 0.134072 | 0.258076714 | 1.9476E-05 |
| | MHD | 0.0 | 0 | 0.025794994 | 0.006259754 | 0.026359118 | 0 | 0.03811329 | 0.05096401 | 0.04894298 | 0.8928585 | 1.112921973 | 1.40789614 | 0.671381 | 0.3461728 | 1.07433 | 0.00149 | 0.011664295 | 8.4321E-05 | 0.299 | 0.045399 | 0.012 | 0.002128 | 0.012985 | 0.000106814 | 0.04499 | 0.01589 | 0.003 | 0.002035 | 0.0124151 | 9.82E-05 | 160.25985 | 1229.1806 | 8.5293121 | 0.013383 | 0.009658327 | 0.008772715 | 0.024689 | 0.158249654 | 0.00603192 |
| Vendor | HHDT | 50.0 | 0.5 | 9.79886E-05 | 2.91423E-05 | 0.164894968 | 0 | 0.00930277 | 0.0002625 | 2.18076E-07 | 2.037559 | 0.925302263 | 1.36570419 | 2.59778 | 0.3874434 | 0.000313 | 0.0036402 | 0.007317886 | 9.67498E-08 | | 0.040649 | 0.017563 | 0.001091 | 0.012737 | 3.04841E-07 | | 0.014227 | 0.004391 | 0.001041 | 0.0121844 | 2.8E-07 | 416.15835 | 808.56485 | 0.0097865 | 0.116467 | 0.060839451 | 4.01384E-08 | 0.067036 | 0.129038357 | 9.7382E-06 |
| | MHD | 50.0 | 0.5 | 0.012897497 | 0.003129877 | 0.013179559 | 0 | 0.01905664 | 0.02548201 | 0.02447149 | 0.4464293 | 0.556460987 | 0.70394807 | 0.335691 | 0.1730864 | 0.537165 | 0.000745 | 0.005832147 | 4.21605E-05 | 0.299 | 0.0227 | 0.006 | 0.001064 | 0.006492 | 5.3407E-05 | 0.04499 | 0.007945 | 0.0015 | 0.001018 | 0.0062075 | 4.91E-05 | 80.129924 | 614.5903 | 4.2646561 | 0.006691 | 0.004829164 | 0.004386358 | 0.012344 | 0.079124827 | 0.00301596 |
| | | | 1 | 0.012995486 | 0.003159019 | 0.178074527 | 0 | 0.02835941 | 0.02574451 | 0.02447170 | 2.4839883 | 1.48176325 | 2.069652261 | 2.933471 | 0.5605298 | 0.537478 | 0.0043852 | 0.013150033 | 4.22572E-05 | 0.299 | 0.063348 | 0.023563 | 0.002155 | 0.01923 | 5.37118E-05 | 0.04499 | 0.022172 | 0.005891 | 0.002059 | 0.0183919 | 4.94E-05 | 496.28827 | 1423.1552 | 4.2744426 | 0.123158 | 0.065668615 | 0.004386398 | 0.07938 | 0.208163184 | 0.0030257 |
| Worker | LDA | 50.0 | 0.5 | 0.136796864 | 0.040510206 | 0 | 0 | 0.00394285 | 0.10236849 | 0.147535757 | 0 | 0.018684555 | 0.115476587 | 0 | 0.3248678 | 1.445873 | 0 | 0.001211348 | 0.000313927 | | 0.003584 | 0.004 | 0 | 0.000585 | 0.000954881 | | 0.001254 | 0.001 | 0 | 0.000539 | 0.000878 | 0 | 122.54122 | 31.754603 | 0 | 0.001026568 | 0.03235985 | 0 | 0.002080964 | 0.01494032 |
| | LDT1 | 25.0 | 0.25 | 0.148814258 | 0.041105424 | 0 | 0 | 0.00690435 | 0.11745495 | 0.134116008 | 0 | 0.0319581 | 0.094816504 | 0 | 0.354682 | 1.306204 | 0 | 0.000804162 | 0.00021249 | | 0.002306 | 0.002 | 0 | 0.000482 | 0.000724461 | | 0.000807 | 0.0005 | 0 | 0.0004435 | 0.000666 | 0 | 81.34419 | 21.494004 | 0 | 0.001555571 | 0.026204278 | 0 | 0.002343639 | 0.00962361 |
| | LDT2 | 25.0 | 0.25 | 0.072043204 | 0.020150051 | 0 | 0 | 0.00277508 | 0.05358915 | 0.094795741 | 0 | 0.017007912 | 0.082407943 | 0 | 0.2073341 | 0.905899 | 0 | 0.000831592 | 0.000213499 | | 0.002217 | 0.002 | 0 | 0.000333 | 0.000526973 | | 0.000776 | 0.0005 | 0 | 0.0003065 | 0.000485 | 0 | 84.129497 | 21.596069 | 0 | 0.000704556 | 0.020482149 | 0 | 0.001504103 | 0.0091976 |
| | | | 1 | 0.357654326 | 0.101765681 | 0 | 0 | 0.01362228 | 0.2734126 | 0.376447506 | 0 | 0.067650567 | 0.292701033 | 0 | 0.8868839 | 3.657977 | 0 | 0.002847102 | 0.000739916 | 0.299 | 0.008107 | 0.008 | 0 | 0.001401 | 0.002206314 | 0.04499 | 0.002837 | 0.002 | 0 | 0.001289 | 0.002029 | 0 | 288.01491 | 74.844675 | 0 | 0.003286696 | 0.079046277 | 0 | 0.005928705 | 0.03376154 |

| Category | | Mix % | Adj | ROG_DIURN | ROG_HTSK | ROG_IDLEX | ROG_RESTL | ROG_RUNEX | ROG_RUNLS | ROG_STREX | NOX_IDLEX | NOX_RUNEX | NOX_STREX | CO_IDLEX | CO_RUNEX | CO_STREX | SO2_IDLEX | SO2_RUNEX | SO2_STREX | Road Dust PM10 | PM10_PMBW | PM10_PMTW | PM10_IDLEX | PM10_RUNEX | PM10_STREX | Road Dust PM25 | PM25_PMBW | PM25_PMTW | PM25_IDLEX | PM25_RUNEX | PM25_STREX | CO2_NBIO_IDLEX | CO2_NBIO_RUNEX | CO2_NBIO_STREX | CH4_IDLEX | CH4_RUNEX | CH4_STREX | N2O_IDLE | N2O_RUNEX | N2O_STREX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 19 | 22 | 23 | 8 | 9 | 10 | | | | | | |
| Hauling | HHDT | 100.0 | 1 | 0.000161301 | 4.7964E-05 | 0.32711902 | 0 | 0.0177996 | 0.00043204 | 4.20633E-07 | 3.9652113 | 1.774057666 | 2.751173324 | 5.17629 | 0.7565356 | 0.000685 | 0.0070989 | 0.014348163 | 1.69191E-07 | | 0.081222 | 0.035128 | 0.002097 | 0.025031 | 5.20395E-07 | | 0.028428 | 0.008782 | 0.002 | 0.0239449 | 4.78E-07 | 813.97326 | 1586.8336 | 0.0171142 | 0.229861 | 0.117132109 | 7.74759E-08 | 0.131219 | 0.253304032 | 1.4215E-05 |
| | MHD | 0.0 | 0 | 0.023118162 | 0.005603296 | 0.025250869 | 0 | 0.03248334 | 0.04529114 | 0.045776126 | 0.8479275 | 1.006394097 | 1.403484797 | 0.668176 | 0.2969393 | 1.000247 | 0.0014721 | 0.011511702 | 8.11155E-05 | 0.299 | 0.04526 | 0.012 | 0.001762 | 0.011186 | 0.000100932 | 0.04499 | 0.015841 | 0.003 | 0.001685 | 0.0106942 | 9.28E-05 | 158.59304 | 1213.6546 | 8.2050726 | 0.013842 | 0.0095355 | 0.008314196 | 0.024457 | 0.156018341 | 0.00585825 |
| Vendor | HHDT | 50.0 | 0.5 | 8.06503E-05 | 2.3982E-05 | 0.16355951 | 0 | 0.0088998 | 0.00021602 | 2.10316E-07 | 1.9826057 | 0.887028833 | 1.375586662 | 2.588145 | 0.3782678 | 0.000342 | 0.0035495 | 0.007174082 | 8.45956E-08 | | 0.040611 | 0.017564 | 0.001048 | 0.012516 | 2.60198E-07 | | 0.014214 | 0.004391 | 0.001 | 0.0119725 | 2.39E-07 | 406.98663 | 793.41681 | 0.0085571 | 0.114931 | 0.058566054 | 3.87379E-08 | 0.06561 | 0.126652016 | 7.1077E-06 |
| | MHD | 50.0 | 0.5 | 0.011559081 | 0.002801648 | 0.012625434 | 0 | 0.01624167 | 0.02264557 | 0.022888063 | 0.4239638 | 0.503197049 | 0.701742398 | 0.334088 | 0.1484697 | 0.500124 | 0.000736 | 0.005755851 | 4.05577E-05 | | 0.02263 | 0.006 | 0.000881 | 0.005593 | 5.04658E-05 | | 0.00792 | 0.0015 | 0.000843 | 0.0053471 | 4.64E-05 | 79.296518 | 606.82729 | 4.1025363 | 0.006921 | 0.00476775 | 0.004157098 | 0.012228 | 0.078009171 | 0.00292913 |
| | | | 1 | 0.011639731 | 0.00282563 | 0.176184944 | 0 | 0.02514147 | 0.02286159 | 0.022888273 | 2.4065694 | 1.390225882 | 2.07732906 | 2.922233 | 0.5267375 | 0.500466 | 0.0042855 | 0.012929933 | 4.06423E-05 | 0.299 | 0.063241 | 0.023564 | 0.001929 | 0.018109 | 5.0726E-05 | 0.04499 | 0.02134 | 0.005891 | 0.001842 | 0.0173196 | 4.66E-05 | 486.28315 | 1400.2441 | 4.1110934 | 0.121851 | 0.063333805 | 0.004157137 | 0.077838 | 0.204661187 | 0.00293623 |
| Worker | LDA | 50.0 | 0.5 | 0.132316144 | 0.038798622 | 0 | 0 | 0.00347076 | 0.09896031 | 0.136662954 | 0 | 0.01669164 | 0.109258161 | 0 | 0.303302 | 1.355747 | 0 | 0.00117474 | 0.000305136 | | 0.003568 | 0.004 | 0 | 0.00056 | 0.000924606 | | 0.001249 | 0.001 | 0 | 0.0005155 | 0.00085 | 0 | 118.83714 | 30.865404 | 0 | 0.000920346 | 0.030308682 | 0 | 0.001942295 | 0.0144366 |
| | LDT1 | 25.0 | 0.25 | 0.140646011 | 0.03898451 | 0 | 0 | 0.0061396 | 0.10983229 | 0.123932987 | 0 | 0.028671908 | 0.089369531 | 0 | 0.3267767 | 1.213816 | 0 | 0.00078885 | 0.000207607 | | 0.002305 | 0.002 | 0 | 0.000453 | 0.000687493 | | 0.000807 | 0.0005 | 0 | 0.0004172 | 0.000632 | 0 | 79.795329 | 21.000067 | 0 | 0.001394323 | 0.02448908 | 0 | 0.002156838 | 0.00932301 |
| | LDT2 | 25.0 | 0.25 | 0.070892203 | 0.019532741 | 0 | 0 | 0.00252234 | 0.05275079 | 0.088626233 | 0 | 0.01535685 | 0.07730776 | 0 | 0.1953552 | 0.854482 | 0 | 0.000809611 | 0.000207623 | | 0.002215 | 0.002 | 0 | 0.000323 | 0.000515217 | | 0.000775 | 0.0005 | 0 | 0.0002971 | 0.000474 | 0 | 81.905889 | 21.001723 | 0 | 0.000648121 | 0.019328106 | 0 | 0.001411832 | 0.00887581 |
| | | | 1 | 0.343854358 | 0.097315873 | 0 | 0 | 0.01213271 | 0.26154339 | 0.349222174 | 0 | 0.060720398 | 0.275935452 | 0 | 0.8254339 | 3.424044 | 0 | 0.002773201 | 0.000720366 | 0.299 | 0.008088 | 0.008 | 0 | 0.001336 | 0.002127316 | 0.04499 | 0.002831 | 0.002 | 0 | 0.0012299 | 0.001956 | 0 | 280.53836 | 72.867194 | 0 | 0.00296279 | 0.074125868 | 0 | 0.005510966 | 0.03263542 |

| | | Mix % | Adj | ROG_DIURN | ROG_HTSK | ROG_IDLEX | ROG_RESTL | ROG_RUNEX | ROG_RUNLS | ROG_STREX | NOX_IDLEX | NOX_RUNEX | NOX_STREX | CO_IDLEX | CO_RUNEX | CO_STREX | SO2_IDLEX | SO2_RUNEX | SO2_STREX | Road Dust PM10 | PM10_PMBW | PM10_PMTW | PM10_IDLEX | PM10_RUNEX | PM10_STREX | Road Dust PM25 | PM25_PMBW | PM25_PMTW | PM25_IDLEX | PM25_RUNEX | PM25_STREX | CO2_NBIO_IDLEX | CO2_NBIO_RUNEX | CO2_NBIO_STREX | CH4_IDLEX | CH4_RUNEX | CH4_STREX | N2O_IDLE | N2O_RUNEX | N2O_STREX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hauling | HHDT | 100.0 | 1 | 0.000106002 | 3.36143E-05 | 0.32445582 | 0 | 0.01701891 | 0.00030273 | 4.06848E-07 | 3.8490822 | 1.701647234 | 2.760133946 | 5.153655 | 0.7330999 | 0.000738 | 0.0069235 | 0.014049606 | 1.33736E-07 | | 0.081458 | 0.035132 | 0.002013 | 0.024769 | 3.29375E-07 | | 0.02851 | 0.008783 | 0.001919 | 0.0236943 | 3.03E-07 | 795.66994 | 1554.9734 | 0.0135278 | 0.224309 | 0.111846137 | 7.49827E-08 | 0.128346 | 0.248265947 | 8.0417E-06 |
| | MHD | 0.0 | 0 | 0.021312827 | 0.005105771 | 0.024261021 | 0 | 0.02766184 | 0.04201809 | 0.043042965 | 0.8019976 | 0.906228922 | 1.39169173 | 0.664762 | 0.2571492 | 0.934813 | 0.0014519 | 0.011343734 | 7.82441E-05 | 0.299 | 0.045088 | 0.012 | 0.001445 | 0.009635 | 9.6335E-05 | 0.04499 | 0.015781 | 0.003 | 0.001382 | 0.0092102 | 8.86E-05 | 156.6958 | 1196.5286 | 7.914622 | 0.014329 | 0.009524548 | 0.007918504 | 0.024186 | 0.153578352 | 0.00568917 |
| Vendor | HHDT | 50.0 | 0.5 | 5.30008E-05 | 1.68071E-05 | 0.16222791 | 0 | 0.00850945 | 0.00015136 | 2.03424E-07 | 1.9245411 | 0.850823617 | 1.380066973 | 2.576828 | 0.36655 | 0.000369 | 0.0034618 | 0.007024803 | 6.6868E-08 | | 0.040729 | 0.017566 | 0.001006 | 0.012385 | 1.64687E-07 | | 0.014255 | 0.004391 | 0.00096 | 0.0118471 | 1.51E-07 | 397.83497 | 777.4867 | 0.0067639 | 0.112154 | 0.055923068 | 3.74914E-08 | 0.064173 | 0.124132973 | 4.0208E-06 |
| | MHD | 50.0 | 0.5 | 0.010656414 | 0.002552885 | 0.01213051 | 0 | 0.01383092 | 0.02100905 | 0.021521482 | 0.4009988 | 0.453114461 | 0.695845865 | 0.332381 | 0.1285746 | 0.467407 | 0.0007259 | 0.005671867 | 3.9122E-05 | | 0.022544 | 0.006 | 0.000723 | 0.004818 | 4.81675E-05 | | 0.00789 | 0.0015 | 0.000691 | 0.0046051 | 4.43E-05 | 78.3479 | 598.26431 | 3.957311 | 0.007164 | 0.004762274 | 0.003959252 | 0.012093 | 0.076789176 | 0.00284458 |
| | | | 1 | 0.010709414 | 0.002569693 | 0.17435842 | 0 | 0.02234037 | 0.02116041 | 0.021521686 | 2.3255399 | 1.303938078 | 2.075912838 | 2.909209 | 0.4951246 | 0.467775 | 0.0041877 | 0.01269667 | 3.91889E-05 | 0.299 | 0.063273 | 0.023566 | 0.001729 | 0.017202 | 4.83322E-05 | 0.04499 | 0.022146 | 0.005891 | 0.001651 | 0.0164522 | 4.44E-05 | 476.18287 | 1375.751 | 3.9640749 | 0.119319 | 0.060685342 | 0.003959289 | 0.076266 | 0.200922149 | 0.0028486 |
| Worker | LDA | 50.0 | 0.5 | 0.127252154 | 0.036844958 | 0 | 0 | 0.00310372 | 0.09549445 | 0.127128959 | 0 | 0.015187697 | 0.103974769 | 0 | 0.2865391 | 1.277031 | 0 | 0.001145495 | 0.000297052 | | 0.003561 | 0.004 | 0 | 0.000536 | 0.000895416 | | 0.001246 | 0.001 | 0 | 0.000493 | 0.000823 | 0 | 115.87797 | 30.047725 | 0 | 0.000837586 | 0.028479341 | 0 | 0.001838924 | 0.0139915 |
| | LDT1 | 25.0 | 0.25 | 0.132430724 | 0.036894584 | 0 | 0 | 0.00546911 | 0.10347702 | 0.114577624 | 0 | 0.025800958 | 0.084390428 | 0 | 0.3019495 | 1.128878 | 0 | 0.000773719 | 0.000202829 | | 0.002303 | 0.002 | 0 | 0.000427 | 0.000653661 | | 0.000806 | 0.0005 | 0 | 0.0003926 | 0.000601 | 0 | 78.26465 | 20.516787 | 0 | 0.00125256 | 0.022898387 | 0 | 0.0019927 | 0.0090412 |
| | LDT2 | 25.0 | 0.25 | 0.069772888 | 0.018822709 | 0 | 0 | 0.00230806 | 0.05209969 | 0.083130872 | 0 | 0.014000924 | 0.073061014 | 0 | 0.185495 | 0.809666 | 0 | 0.000789304 | 0.000202147 | | 0.002214 | 0.002 | 0 | 0.000311 | 0.000500467 | | 0.000775 | 0.0005 | 0 | 0.000286 | 0.00046 | 0 | 79.851497 | 20.44778 | 0 | 0.000600438 | 0.018292607 | 0 | 0.001335689 | 0.00860807 |
| | | | 1 | 0.329455766 | 0.09256225 | 0 | 0 | 0.01088088 | 0.25107116 | 0.324837454 | 0 | 0.054989579 | 0.261426211 | 0 | 0.7739836 | 3.215575 | 0 | 0.002708517 | 0.000702029 | 0.299 | 0.008078 | 0.008 | 0 | 0.001273 | 0.002049544 | 0.04499 | 0.002827 | 0.002 | 0 | 0.0011716 | 0.001884 | 0 | 273.99411 | 71.012292 | 0 | 0.002690584 | 0.069670334 | 0 | 0.005167313 | 0.03164077 |

| Category | | Mix % | Adj | ROG_DIURN | ROG_HTSK | ROG_IDLEX | ROG_RESTL | ROG_RUNEX | ROG_RUNLS | ROG_STREX | NOX_IDLEX | NOX_RUNEX | NOX_STREX | CO_IDLEX | CO_RUNEX | CO_STREX | SO2_IDLEX | SO2_RUNEX | SO2_STREX | Road Dust PM10 | PM10_PMBW | PM10_PMTW | PM10_IDLEX | PM10_RUNEX | PM10_STREX | Road Dust PM25 | PM25_PMBW | PM25_PMTW | PM25_IDLEX | PM25_RUNEX | PM25_STREX | CO2_NBIO_IDLEX | CO2_NBIO_RUNEX | CO2_NBIO_STREX | CH4_IDLEX | CH4_RUNEX | CH4_STREX | N2O_IDLE | N2O_RUNEX | N2O_STREX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 19 | 22 | 23 | 8 | 9 | 10 | | | | | | |
| Hauling | HHDT | 100.0 | 1 | 9.1592E-05 | 2.90398E-05 | 0.321590124 | 0 | 0.01628701 | 0.00026147 | 3.72501E-07 | 3.7343071 | 1.633848814 | 2.745433901 | 5.124778 | 0.7087742 | 0.000782 | 0.0067481 | 0.013717513 | 1.259E-07 | | 0.081782 | 0.035135 | 0.001939 | 0.024473 | 2.86377E-07 | | 0.028624 | 0.008784 | 0.001849 | 0.0234108 | 2.63E-07 | 777.08947 | 1519.2636 | 0.0127352 | 0.218219 | 0.10604745 | 6.86812E-08 | 0.125416 | 0.242608661 | 7.3511E-06 |
| | MHD | 0.0 | 0 | 0.019771494 | 0.004666468 | 0.023376294 | 0 | 0.02362674 | 0.03865491 | 0.040569481 | 0.7577071 | 0.814699228 | 1.371110948 | 0.659814 | 0.224798 | 0.875978 | 0.0014274 | 0.011138512 | 7.55078E-05 | 0.299 | 0.044837 | 0.012 | 0.001186 | 0.008315 | 9.25129E-05 | 0.04499 | 0.015693 | 0.003 | 0.001134 | 0.0079473 | 8.51E-05 | 154.3221 | 1175.4531 | 7.6378398 | 0.014761 | 0.009545333 | 0.00755705 | 0.02384 | 0.150701674 | 0.00552291 |
| Vendor | HHDT | 50.0 | 0.5 | 4.5796E-05 | 1.45199E-05 | 0.160795062 | 0 | 0.00814351 | 0.00013074 | 1.8625E-07 | 1.8671535 | 0.816924407 | 1.372716951 | 2.562389 | 0.3543871 | 0.000391 | 0.003374 | 0.006858757 | 6.29501E-08 | | 0.040891 | 0.017568 | 0.00097 | 0.012236 | 1.43188E-07 | | 0.014312 | 0.004392 | 0.000924 | 0.0117054 | 1.32E-07 | 388.54474 | 759.63181 | 0.0063676 | 0.10911 | 0.053023725 | 3.43406E-08 | 0.062708 | 0.121304331 | 3.6755E-06 |
| | MHD | 50.0 | 0.5 | 0.009885747 | 0.002333234 | 0.011688147 | 0 | 0.01181337 | 0.01932745 | 0.020284741 | 0.3788536 | 0.407349614 | 0.685555474 | 0.329907 | 0.112399 | 0.437989 | 0.0007137 | 0.005569256 | 3.77539E-05 | | 0.022418 | 0.006 | 0.000593 | 0.004157 | 4.62565E-05 | | 0.007846 | 0.0015 | 0.000567 | 0.0039736 | 4.25E-05 | 77.161049 | 587.72653 | 3.8189199 | 0.007381 | 0.004772667 | 0.003778525 | 0.01192 | 0.075350837 | 0.00276145 |
| | | | 1 | 0.009931543 | 0.002347754 | 0.172483209 | 0 | 0.01995688 | 0.01945819 | 0.020284927 | 2.2460071 | 1.224274021 | 2.058272425 | 2.892296 | 0.4667861 | 0.43838 | 0.0040878 | 0.012428013 | 3.78169E-05 | 0.299 | 0.063309 | 0.023568 | 0.001563 | 0.016394 | 4.63996E-05 | 0.04499 | 0.022158 | 0.005892 | 0.001491 | 0.0156791 | 4.27E-05 | 465.70578 | 1347.3583 | 3.8252875 | 0.11649 | 0.057796392 | 0.00377856 | 0.074628 | 0.196655167 | 0.00276513 |
| Worker | LDA | 50.0 | 0.5 | 0.124774953 | 0.035332579 | 0 | 0 | 0.00280128 | 0.09381266 | 0.118752298 | 0 | 0.013978935 | 0.099494609 | 0 | 0.2723989 | 1.207995 | 0 | 0.001118612 | 0.000289607 | | 0.003554 | 0.004 | 0 | 0.000508 | 0.000861352 | | 0.001244 | 0.001 | 0 | 0.0004677 | 0.000792 | 0 | 113.15781 | 29.294583 | 0 | 0.000769144 | 0.026851221 | 0 | 0.001754911 | 0.01360376 |
| | LDT1 | 25.0 | 0.25 | 0.127182533 | 0.034919795 | 0 | 0 | 0.0048531 | 0.09837243 | 0.106039612 | 0 | 0.02313956 | 0.079887107 | 0 | 0.2789312 | 1.050819 | 0 | 0.000758744 | 0.000198227 | | 0.002299 | 0.002 | 0 | 0.000394 | 0.000618991 | | 0.000805 | 0.0005 | 0 | 0.0003623 | 0.000569 | 0 | 76.749467 | 20.051285 | 0 | 0.001123286 | 0.021436306 | 0 | 0.001841323 | 0.00878388 |
| | LDT2 | 25.0 | 0.25 | 0.068511887 | 0.018162188 | 0 | 0 | 0.00212373 | 0.05123426 | 0.078241944 | 0 | 0.012836987 | 0.069477589 | 0 | 0.1772545 | 0.771154 | 0 | 0.000770701 | 0.000197139 | | 0.002213 | 0.002 | 0 | 0.000296 | 0.000481527 | | 0.000775 | 0.0005 | 0 | 0.0002722 | 0.000443 | 0 | 77.969563 | 19.94124 | 0 | 0.000559632 | 0.017367339 | 0 | 0.001270118 | 0.00838622 |
| | | | 1 | 0.320469373 | 0.088414562 | 0 | 0 | 0.00977811 | 0.24341934 | 0.303033854 | 0 | 0.049955482 | 0.248859306 | 0 | 0.7285846 | 3.029968 | 0 | 0.002648057 | 0.000684974 | 0.299 | 0.008067 | 0.008 | 0 | 0.001198 | 0.00196187 | 0.04499 | 0.002823 | 0.002 | 0 | 0.0011022 | 0.001804 | 0 | 267.87684 | 69.287108 | 0 | 0.002452062 | 0.065654866 | 0 | 0.004866352 | 0.03077386 |

Source: EMFAC2021 (v1.0.2) 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, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

| Region | Calendar Y | Vehicle Ca | Model Yea | Speed | Fuel | Population | Total VMT | CVMT | EVMT | Trips | NOx RUN | NOx IDLE | NOx STRE | PM2.5 RU | PM2.5 IDL | PM2.5 STI | PM2.5 PM | PM10 RU | PM10 IDL | PM10 STR | PM10 PM | PM10 PM | CO2 RUN | CO2 IDLE | CO2 STRE | CH4 RUN | CH4 IDLE | CH4 STRE | N2O RUN | N2O IDLE | N2O STRE | ROG RUN | ROG IDLE | ROG STRE | ROG HOT | ROG RUN | ROG DIUR | TOG RUN | TOG IDLE | TOG STRE | TOG HOT | TOG RUN | TOG DIUR | NH3 RUN | CO RUNEX | CO_IDLEX | CO_STREX | SOx RUNEX | SOx IDLEX | SOx_STREX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Santa Clara | 2023 | HHDT | Aggregate | Aggregate | Gasoline | 3.45401 | 114.309 | 114.309 | 0 | 69.1078 | 8.10787 | 0 | 1.6025 | 0.00493 | 0 | 0.0017 | 0.005 | 0.03527 | 0.00536 | 0 | 0.00185 | 0.02 | 0.10076 | 2306.82 | 0 | 49.8119 | 0.34023 | 0 | 0.00018 | 0.20891 | 0 | 0.0457 | 2.10487 | 0 | 0.00098 | 0.15837 | 1.42664 | 10.6538 | 3.07142 | 0 | 0.00107 | 0.15837 | 1.42664 | 10.6538 | 0.04047 | 83.0074 | 0 | 1.02738 | 0.02281 | 0 | 0.00049 |
| Santa Clara | 2023 | HHDT | Aggregate | Aggregate | Diesel | 8235.06 | 991289 | 991289 | 0 | 120861 | 1.96937 | 63.4049 | 2.84946 | 0.02596 | 0.03163 | 0 | 0.00877 | 0.02753 | 0.02713 | 0.03306 | 0 | 0.03508 | 0.07866 | 1656.8 | 12241.3 | 0 | 0.00081 | 0.23745 | 0 | 0.26103 | 1.92863 | 0 | 0.01742 | 5.11216 | 0 | 0 | 0 | 0 | 0.01983 | 5.8198 | 0 | 0 | 0 | 0 | 0.21462 | 0.08739 | 74.2014 | 0 | 0.01569 | 0.11592 | 0 |
| Santa Clara | 2023 | HHDT | Aggregate | Aggregate | Electricity | 6.70171 | 411.505 | 0 | 411.505 | 103.204 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00874 | 0.01338 | 0 | 0 | 0 | 0.03496 | 0.03824 | 0 | 0 | 0 | 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 | 753.737 | 53296 | 53296 | 0 | 6914.03 | 1.20884 | 13.9283 | 0 | 0.00177 | 0.02424 | 0 | 0.009 | 0.04673 | 0.00193 | 0.02636 | 0 | 0.036 | 0.13351 | 1398.51 | 10630.2 | 0 | 2.44811 | 37.4467 | 0 | 0.2851 | 2.16704 | 0 | 0.05457 | 0.57226 | 0 | 0 | 0 | 0 | 2.5208 | 38.2595 | 0 | 0 | 0 | 0 | 0.86011 | 13.7825 | 74.0396 | 0 | 0 | 0 | 0 |
| Santa Clara | 2023 | LDA | Aggregate | Aggregate | Gasoline | 601938 | 2.2E+07 | 2.2E+07 | 0 | 2795479 | 0.04741 | 0 | 0.27189 | 0.00122 | 0 | 0.00199 | 0.002 | 0.00266 | 0.00132 | 0 | 0.00217 | 0.008 | 0.00759 | 281.43 | 0 | 71.6648 | 0.0026 | 0 | 0.07645 | 0.005 | 0 | 0.03413 | 0.01016 | 0 | 0.35379 | 0.09476 | 0.24061 | 1.48055 | 0.01482 | 0 | 0.38736 | 0.09476 | 0.24061 | 1.48055 | 0.03378 | 0.78762 | 0 | 3.43661 | 0.00278 | 0 | 0.00071 |
| Santa Clara | 2023 | LDA | Aggregate | Aggregate | Diesel | 1871.12 | 56220.8 | 56220.8 | 0 | 8000.53 | 0.23832 | 0 | 0 | 0.01856 | 0 | 0 | 0.002 | 0.0027 | 0.0194 | 0 | 0 | 0.008 | 0.00771 | 234.426 | 0 | 0 | 0.00141 | 0 | 0 | 0.03693 | 0 | 0 | 0.03042 | 0 | 0 | 0 | 0 | 0 | 0 | 0.03463 | 0 | 0 | 0 | 0.0031 | 0.34246 | 0 | 0 | 0.00222 | 0 | 0 |
| Santa Clara | 2023 | LDA | Aggregate | Aggregate | Electricity | 53751.1 | 2268185 | 0 | 2268185 | 265250 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00153 | 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 |
| Santa Clara | 2023 | LDA | Aggregate | Aggregate | Plug-in Hy | 15805.3 | 700611 | 356650 | 343961 | 65355 | 0.00334 | 0 | 0.11551 | 0.00066 | 0 | 0.00217 | 0.002 | 0.00137 | 0.00072 | 0 | 0.00236 | 0.008 | 0.00392 | 142.11 | 0 | 66.0887 | 0.00046 | 0 | 0.0426 | 0.00061 | 0 | 0.02092 | 0.00144 | 0 | 0.17328 | 0.04064 | 0.03609 | 0.44706 | 0.00211 | 0 | 0.18973 | 0.04064 | 0.03609 | 0.44706 | 0.01971 | 0.21991 | 0 | 1.33989 | 0.0014 | 0 | 0.00065 |
| Santa Clara | 2023 | LDT1 | Aggregate | Aggregate | Gasoline | 53782.3 | 1744480 | 1744480 | 0 | 239738 | 0.14329 | 0 | 0.40434 | 0.00185 | 0 | 0.00284 | 0.002 | 0.00324 | 0.00201 | 0 | 0.00308 | 0.008 | 0.00925 | 332.654 | 0 | 88.3113 | 0.00699 | 0 | 0.11256 | 0.01026 | 0 | 0.03983 | 0.03122 | 0 | 0.58321 | 0.17414 | 0.50309 | 2.80701 | 0.04555 | 0 | 0.63854 | 0.17414 | 0.50309 | 2.80701 | 0.03577 | 1.55341 | 0 | 5.66004 | 0.00329 | 0 | 0.00087 |
| Santa Clara | 2023 | LDT1 | Aggregate | Aggregate | Diesel | 26.0471 | 391.87 | 391.87 | 0 | 75.1774 | 1.65906 | 0 | 0 | 0.24041 | 0 | 0 | 0.002 | 0.00373 | 0.25128 | 0 | 0 | 0.008 | 0.01065 | 415.548 | 0 | 0 | 0.01393 | 0 | 0 | 0.06547 | 0 | 0 | 0.29985 | 0 | 0 | 0 | 0 | 0 | 0 | 0.34136 | 0 | 0 | 0 | 0.0031 | 1.6014 | 0 | 0 | 0.00394 | 0 | 0 |
| Santa Clara | 2023 | LDT1 | Aggregate | Aggregate | Electricity | 194.894 | 7068.18 | 0 | 7068.18 | 916.483 | 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 |
| Santa Clara | 2023 | LDT1 | Aggregate | Aggregate | Plug-in Hy | 43.2768 | 2048.37 | 944.158 | 1104.21 | 178.949 | 0.00302 | 0 | 0.11551 | 0.00039 | 0 | 0.00141 | 0.002 | 0.00138 | 0.00042 | 0 | 0.00153 | 0.008 | 0.00395 | 128.765 | 0 | 70.8664 | 0.00041 | 0 | 0.04244 | 0.00054 | 0 | 0.02076 | 0.00131 | 0 | 0.17328 | 0.02458 | 0.02178 | 0.28592 | 0.00191 | 0 | 0.18973 | 0.02458 | 0.02178 | 0.28592 | 0.01936 | 0.19958 | 0 | 1.33989 | 0.00127 | 0 | 0.0007 |
| Santa Clara | 2023 | LDT2 | Aggregate | Aggregate | Gasoline | 280180 | 1E+07 | 1E+07 | 0 | 1311796 | 0.07721 | 0 | 0.35835 | 0.00126 | 0 | 0.002 | 0.002 | 0.00313 | 0.00138 | 0 | 0.00218 | 0.008 | 0.00893 | 348.396 | 0 | 89.5445 | 0.00312 | 0 | 0.08776 | 0.00638 | 0 | 0.03865 | 0.01242 | 0 | 0.41073 | 0.08512 | 0.22419 | 1.4049 | 0.01812 | 0 | 0.44969 | 0.08512 | 0.22419 | 1.4049 | 0.03554 | 0.89682 | 0 | 3.8921 | 0.00344 | 0 | 0.00089 |
| Santa Clara | 2023 | LDT2 | Aggregate | Aggregate | Diesel | 978.497 | 36936.9 | 36936.9 | 0 | 4673.4 | 0.04616 | 0 | 0 | 0.00543 | 0 | 0 | 0.002 | 0.0031 | 0.00568 | 0 | 0 | 0.008 | 0.00886 | 313.067 | 0 | 0 | 0.00065 | 0 | 0 | 0.04932 | 0 | 0 | 0.01398 | 0 | 0 | 0 | 0 | 0 | 0 | 0.01592 | 0 | 0 | 0 | 0.0031 | 0.1321 | 0 | 0 | 0.00297 | 0 | 0 |
| Santa Clara | 2023 | LDT2 | Aggregate | Aggregate | Electricity | 1105.88 | 38931.7 | 0 | 38931.7 | 5663.05 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00152 | 0 | 0 | 0 | 0.008 | 0.00436 | 0 | 0 | 0 | 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 Hy | 1696.55 | 77270.7 | 37142.7 | 40128 | 7015.23 | 0.00315 | 0 | 0.11551 | 0.0005 | 0 | 0.00176 | 0.002 | 0.00138 | 0.00055 | 0 | 0.00191 | 0.008 | 0.00394 | 134.254 | 0 | 77.036 | 0.00043 | 0 | 0.04246 | 0.00057 | 0 | 0.02078 | 0.00136 | 0 | 0.17328 | 0.02624 | 0.02445 | 0.31823 | 0.02014 | 0.20798 | 0 | 1.33989 | 0.00133 | 0 | 0.00076 |
| Santa Clara | 2023 | LHDT1 | Aggregate | Aggregate | Gasoline | 19181 | 711085 | 711085 | 0 | 285768 | 0.19781 | 0.03737 | 0.66388 | 0.00159 | 0 | 0.00033 | 0.002 | 0.0273 | 0.00173 | 0 | 0.00036 | 0.008 | 0.078 | 889.742 | 120.266 | 25.8396 | 0.00948 | 0.11564 | 0.03452 | 0.01108 | 0.00301 | 0.05189 | 0.04766 | 0.42815 | 0.17223 | 0.05056 | 0.2776 | 2.91378 | 0.06954 | 0.62476 | 0.18857 | 0.05056 | 0.2776 | 2.91378 | 0.04487 | 1.22511 | 3.75343 | 3.08025 | 0.0088 | 0.00119 | 0.00026 |
| Santa Clara | 2023 | LHDT1 | Aggregate | Aggregate | Diesel | 9807.46 | 384085 | 384085 | 0 | 123366 | 1.78063 | 2.02927 | 0 | 0.03825 | 0.02697 | 0 | 0.003 | 0.0273 | 0.03998 | 0.02819 | 0 | 0.012 | 0.078 | 635.427 | 132.908 | 0 | 0.00862 | 0.0051 | 0 | 0.10011 | 0.02094 | 0 | 0.18565 | 0.10976 | 0 | 0 | 0 | 0 | 0.21135 | 0.12495 | 0 | 0 | 0 | 0.16551 | 0.51888 | 0.90975 | 0 | 0.00602 | 0.00126 | 0 |
| Santa Clara | 2023 | LHDT2 | Aggregate | Aggregate | Gasoline | 2494.38 | 90793 | 90793 | 0 | 37162.6 | 0.18702 | 0.03682 | 0.64206 | 0.00145 | 0 | 0.00026 | 0.002 | 0.03185 | 0.00157 | 0 | 0.00028 | 0.008 | 0.091 | 997.384 | 138.797 | 25.7233 | 0.00707 | 0.11457 | 0.03346 | 0.01097 | 0.00297 | 0.05045 | 0.03305 | 0.42203 | 0.16561 | 0.04699 | 0.25097 | 2.6763 | 0.04822 | 0.61583 | 0.18132 | 0.04699 | 0.25097 | 2.6763 | 0.04497 | 0.96189 | 3.75941 | 3.11931 | 0.00986 | 0.00137 | 0.00025 |
| Santa Clara | 2023 | LHDT2 | Aggregate | Aggregate | Diesel | 4479.53 | 176769 | 176769 | 0 | 56346.9 | 1.41694 | 1.99826 | 0 | 0.03418 | 0.02703 | 0 | 0.003 | 0.03185 | 0.03572 | 0.02825 | 0 | 0.012 | 0.091 | 764.504 | 212.121 | 0 | 0.00782 | 0.0051 | 0 | 0.12045 | 0.03342 | 0 | 0.16845 | 0.10976 | 0 | 0 | 0 | 0 | 0.19177 | 0.12495 | 0 | 0 | 0 | 0.17898 | 0.44054 | 0.90975 | 0 | 0.00724 | 0.00201 | 0 |
| Santa Clara | 2023 | MCY | Aggregate | Aggregate | Gasoline | 27894.5 | 164895 | 164895 | 0 | 55789 | 0.58693 | 0 | 0.14237 | 0.00178 | 0 | 0.00341 | 0.001 | 0.0042 | 0.0019 | 0 | 0.00363 | 0.004 | 0.012 | 188.309 | 0 | 49.5981 | 0.16762 | 0 | 0.18748 | 0.04022 | 0 | 0.00838 | 1.10592 | 0 | 1.39264 | 3.5601 | 3.74568 | 3.94787 | 1.32414 | 0 | 1.51387 | 3.5601 | 3.74568 | 3.94787 | 0.00876 | 13.0896 | 0 | 8.0512 | 0.00186 | 0 | 0.00049 |
| Santa Clara | 2023 | MDV | Aggregate | Aggregate | Gasoline | 153799 | 5358084 | 5358084 | 0 | 712434 | 0.11759 | 0 | 0.47011 | 0.00129 | 0 | 0.00214 | 0.002 | 0.00319 | 0.0014 | 0 | 0.00233 | 0.008 | 0.00911 | 422.679 | 0 | 109.033 | 0.00441 | 0 | 0.11029 | 0.00848 | 0 | 0.04308 | 0.01883 | 0 | 0.55926 | 0.10198 | 0.2858 | 1.72733 | 0.02744 | 0 | 0.61231 | 0.10198 | 0.2858 | 1.72733 | 0.03543 | 1.06733 | 0 | 4.33325 | 0.00418 | 0 | 0.00108 |
| Santa Clara | 2023 | MDV | Aggregate | Aggregate | Diesel | 2374.92 | 86834.4 | 86834.4 | 0 | 11267.1 | 0.0531 | 0 | 0 | 0.00515 | 0 | 0 | 0.002 | 0.00318 | 0.00538 | 0 | 0 | 0.008 | 0.00909 | 411.163 | 0 | 0 | 0.00053 | 0 | 0 | 0.06478 | 0 | 0 | 0.0114 | 0 | 0 | 0 | 0 | 0 | 0.01297 | 0 | 0 | 0 | 0.0031 | 0.20259 | 0 | 0 | 0.0039 | 0 | 0 |
| Santa Clara | 2023 | MDV | Aggregate | Aggregate | Electricity | 1130.12 | 40073.7 | 0 | 40073.7 | 5799.83 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00152 | 0 | 0 | 0 | 0.008 | 0.00435 | 0 | 0 | 0 | 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 Hy | 986.09 | 41899.1 | 20787.3 | 21111.8 | 4077.48 | 0.00326 | 0 | 0.11551 | 0.00064 | 0 | 0.00215 | 0.002 | 0.00138 | 0.00069 | 0 | 0.00234 | 0.008 | 0.00393 | 138.532 | 0 | 96.6849 | 0.00044 | 0 | 0.04226 | 0.00058 | 0 | 0.02059 | 0.00141 | 0 | 0.17328 | 0.02985 | 0.02806 | 0.35962 | 0.00205 | 0 | 0.18973 | 0.02985 | 0.02806 | 0.35962 | 0.02084 | 0.21448 | 0 | 1.33989 | 0.00137 | 0 | 0.00096 |
| Santa Clara | 2023 | MH | Aggregate | Aggregate | Gasoline | 2522.74 | 22546.9 | 22546.9 | 0 | 252.375 | 0.47913 | 0 | 0.41252 | 0.00178 | 0 | 0.00043 | 0.003 | 0.01576 | 0.00194 | 0 | 0.00047 | 0.012 | 0.04502 | 1948.24 | 0 | 31.8758 | 0.01815 | 0 | 0.03803 | 0.02809 | 0 | 0.04265 | 0.08225 | 0 | 0.16378 | 13.0399 | 0.30297 | 4.77362 | 0.12002 | 0 | 0.17932 | 13.0399 | 0.30297 | 4.77362 | 0.04474 | 2.11194 | 0 | 3.62938 | 0.01926 | 0 | 0.00032 |
| Santa Clara | 2023 | MH | Aggregate | Aggregate | Diesel | 959.158 | 9344.85 | 9344.85 | 0 | 95.9158 | 4.26955 | 0 | 0 | 0.09791 | 0 | 0 | 0.004 | 0.01567 | 0.10233 | 0 | 0 | 0.016 | 0.04479 | 1081.43 | 0 | 0 | 0.0057 | 0 | 0 | 0.17038 | 0 | 0 | 0.12281 | 0 | 0 | 0 | 0 | 0 | 0.13981 | 0 | 0 | 0 | 0.15001 | 0.41028 | 0 | 0 | 0.01025 | 0 | 0 |
| Santa Clara | 2023 | MHDT | Aggregate | Aggregate | Gasoline | 1418.7 | 70785.9 | 70785.9 | 0 | 28385.4 | 0.56286 | 0.0883 | 0.45305 | 0.00139 | 0 | 0.00055 | 0.003 | 0.01576 | 0.00151 | 0 | 0.0006 | 0.012 | 0.04502 | 1792.41 | 536.966 | 47.1992 | 0.01807 | 0.25459 | 0.04939 | 0.02638 | 0.00706 | 0.03257 | 0.09086 | 1.01002 | 0.27957 | 0.03719 | 0.30238 | 3.03792 | 0.13258 | 1.47383 | 0.30609 | 0.03719 | 0.30238 | 3.03792 | 0.04497 | 1.90969 | 15.0852 | 6.15628 | 0.01772 | 0.00531 | 0.00047 |
| Santa Clara | 2023 | MHDT | Aggregate | Aggregate | Diesel | 10273.6 | 431550 | 431550 | 0 | 122419 | 1.33734 | 13.5724 | 1.62416 | 0.01652 | 0.03574 | 0 | 0.003 | 0.01594 | 0.01726 | 0.03736 | 0 | 0.012 | 0.04555 | 1151.56 | 2263.79 | 0 | 0.00172 | 0.0123 | 0 | 0.18143 | 0.35666 | 0 | 0.03705 | 0.26478 | 0 | 0 | 0 | 0 | 0.04218 | 0.30143 | 0 | 0 | 0 | 0.20901 | 0.13257 | 7.58339 | 0 | 0.0109 | 0.02144 | 0 |
| Santa Clara | 2023 | MHDT | Aggregate | Aggregate | Electricity | 4.74984 | 101.802 | 0 | 101.802 | 59.6458 | 0 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.00799 | 0 | 0 | 0 | 0.012 | 0.02283 | 0 | 0 | 0 | 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 | 4047.87 | 4047.87 | 0 | 762.81 | 0.14132 | 6.52743 | 0 | 0.00114 | 0.01765 | 0 | 0.003 | 0.016 | 0.00124 | 0.01919 | 0 | 0.012 | 0.04572 | 989.385 | 5296.53 | 0 | 0.74006 | 17.5916 | 0 | 0.20169 | 1.07973 | 0 | 0.01057 | 0.25135 | 0 | 0 | 0 | 0 | 0.75528 | 17.9536 | 0 | 0 | 0 | 1.06 | 2.99271 | 33.6434 | 0 | 0 | 0 | 0 |
| Santa Clara | 2023 | OBUS | Aggregate | Aggregate | Gasoline | 458.897 | 20830.1 | 20830.1 | 0 | 9181.62 | 0.55308 | 0.06499 | 0.40562 | 0.00089 | 0 | 0.00026 | 0.003 | 0.01568 | 0.00097 | 0 | 0.00029 | 0.012 | 0.0448 | 1784.09 | 381.846 | 31.8944 | 0.01581 | 0.19494 | 0.03628 | 0.02618 | 0.00525 | 0.03077 | 0.07811 | 0.74523 | 0.1923 | 0.03471 | 0.15404 | 2.76625 | 0.11398 | 1.08744 | 0.21055 | 0.03471 | 0.15404 | 2.76625 | 0.04492 | 1.74396 | 5.76837 | 4.0717 | 0.01764 | 0.00377 | 0.00032 |
| Santa Clara | 2023 | OBUS | Aggregate | Aggregate | Diesel | 870.421 | 61645.7 | 61645.7 | 0 | 8910.75 | 1.20319 | 7.4101 | 1.5414 | 0.02032 | 0.00863 | 0 | 0.003 | 0.01802 | 0.02124 | 0.00902 | 0 | 0.012 | 0.05148 | 1282.54 | 1552.95 | 0 | 0.00199 | 0.02057 | 0 | 0.20206 | 0.24467 | 0 | 0.04286 | 0.44283 | 0 | 0 | 0 | 0 | 0.04879 | 0.56413 | 0 | 0 | 0 | 0.21586 | 0.15345 | 7.51086 | 0 | 0.01214 | 0.01471 | 0 |
| Santa Clara | 2023 | OBUS | Aggregate | Aggregate | Natural Ga | 6.1456 | 409.547 | 409.547 | 0 | 54.6958 | 0.21932 | 1.54911 | 0 | 0.00092 | 0.00362 | 0 | 0.003 | 0.01615 | 0.001 | 0.00394 | 0 | 0.012 | 0.04614 | 1017.4 | 1188.28 | 0 | 0.77407 | 4.38127 | 0 | 0.2074 | 0.24224 | 0 | 0.01106 | 0.0626 | 0 | 0 | 0 | 0 | 0.78999 | 4.4714 | 0 | 0 | 0 | 1.06 | 3.21195 | 6.7242 | 0 | 0 | 0 | 0 |
| Santa Clara | 2023 | SBUS | Aggregate | Aggregate | Gasoline | 166.987 | 8309.31 | 8309.31 | 0 | 667.947 | 0.51932 | 0.9257 | 0.7051 | 0.00086 | 0 | 0.00056 | 0.002 | 0.01572 | 0.00094 | 0 | 0.00061 | 0.008 | 0.04492 | 815.091 | 2602.03 | 58.6695 | 0.01187 | 2.46208 | 0.07492 | 0.02773 | 0.08622 | 0.0649 | 0.05774 | 10.6294 | 0.42706 | 0.11222 | 0.2593 | 1.59144 | 0.08426 | 15.5104 | 0.46758 | 0.11222 | 0.2593 | 1.59144 | 0.045 | 1.46951 | 82.1675 | 10.5643 | 0.00806 | 0.02572 | 0.00058 |
| Santa Clara | 2023 | SBUS | Aggregate | Aggregate | Diesel | 667.118 | 15392.7 | 15392.7 | 0 | 9659.88 | 4.02801 | 22.3986 | 0.46716 | 0.02091 | 0.02125 | 0 | 0.003 | 0.01572 | 0.02185 | 0.02221 | 0 | 0.012 | 0.04492 | 1148.52 | 2237.81 | 0 | 0.00275 | 0.00808 | 0 | 0.18095 | 0.35257 | 0 | 0.05916 | 0.17402 | 0 | 0 | 0 | 0 | 0.06735 | 0.19811 | 0 | 0 | 0 | 0.14415 | 0.18149 | 4.58185 | 0 | 0.01088 | 0.02119 | 0 |
| Santa Clara | 2023 | SBUS | Aggregate | Aggregate | Electricity | 0.30237 | 3.51049 | 0 | 3.51049 | 4.37836 | 0 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.00786 | 0 | 0 | 0 | 0.012 | 0.02246 | 0 | 0 | 0 | 0 | 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 | 23.5076 | 595.871 | 595.871 | 0 | 340.39 | 0.58732 | 5.2827 | 0 | 0.00338 | 0.01108 | 0 | 0.003 | 0.01572 | 0.00367 | 0.01205 | 0 | 0.012 | 0.04492 | 1271.13 | 4058.81 | 0 | 3.49061 | 15.4024 | 0 | 0.25913 | 0.82742 | 0 | 0.04987 | 0.22007 | 0 | 0 | 0 | 0 | 3.56242 | 15.7193 | 0 | 0 | 0 | 1.06 | 11.9028 | 20.112 | 0 | 0 | 0 | 0 |
| Santa Clara | 2023 | UBUS | Aggregate | Aggregate | Gasoline | 45.9471 | 4798.24 | 4798.24 | 0 | 183.788 | 0.02681 | 0 | 0.44344 | 0.00114 | 0 | 0.00013 | 0.002 | 0.03185 | 0.00124 | 0 | 0.00014 | 0.008 | 0.091 | 926.292 | 0 | 36.8461 | 0.00203 | 0 | 0.04171 | 0.00421 | 0 | 0.07015 | 0.00561 | 0 | 0.14784 | 0.03814 | 0.09212 | 0.4568 | 0.00819 | 0 | 0.16187 | 0.03814 | 0.09212 | 0.4568 | 0.045 | 0.57113 | 0 | 6.07379 | 0.00916 | 0 | 0.00036 |
| Santa Clara | 2023 | UBUS | Aggregate | Aggregate | Diesel | 436.668 | 48829.7 | 48829.7 | 0 | 1746.67 | 0.38626 | 0 | 0 | 0.00702 | 0 | 0 | 0.0083 | 0.0385 | 0.00734 | 0 | 0 | 0.0332 | 0.11 | 1100.96 | 0 | 0 | 0.00321 | 0 | 0 | 0.17346 | 0 | 0 | 0.06921 | 0 | 0 | 0 | 0 | 0 | 0.07879 | 0 | 0 | 0 | 0 | 0.18785 | 0.07937 | 0 | 0 | 0.01043 | 0 | 0 |
| Santa Clara | 2023 | UBUS | Aggregate | Aggregate | Electricity | 5.04676 | 199.003 | 0 | 199.003 | 20.187 | 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 |
| Santa Clara | 2023 | UBUS | Aggregate | Aggregate | Natural Ga | 42.2611 | 4829.67 | 4829.67 | 0 | 169.045 | 0.05878 | 0 | 0 | 0.00028 | 0 | 0 | 0.00818 | 0.0385 | 0.0003 | 0 | 0 | 0.03273 | 0.11 | 1299.13 | 0 | 0 | 4.24574 | 0 | 0 | 0.26484 | 0 | 0 | 0.06066 | 0 | 0 | 0 | 0 | 0 | 4.33309 | 0 | 0 | 0 | 0 | 0.97 | 49.0423 | 0 | 0 | 0 | 0 | 0 |

Source: EMFAC2021 (v1.0.2) 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, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

| Region | Calendar Y | Vehicle Ca | Model Yea | Speed | Fuel | Population | Total VMT | CVMT | EVMT | Trips | NOx RUN | NOx IDLEI | NOx STRE | PM2.5 RU | PM2.5 IDL | PM2.5 STI | PM2.5 PM | PM2.5 TIR | PM10 RU | PM10 IDL | PM10 STR | PM10 PM | PM10 PM | CO2 RUN | CO2 IDLE | CO2 STRE | CH4 RUN | CH4 IDLE | CH4 STRE | N2O RUN | N2O IDLE | N2O STRE | ROG RUN | ROG IDLE | ROG STRE | ROG HOT | ROG RUN | ROG DIUR | TOG RUN | TOG IDLE | TOG STRE | TOG HOT | TOG RUN | TOG DIUR | NH3 RUN | CO RUNEI | CO_IDLEX | CO_STREX | SOx RUNE | SOx IDLEX | SOx_STREX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Santa Clara | 2024 | HHDT | Aggregate | Aggregate | Gasoline | 2.58871 | 115.153 | 115.153 | 0 | 51.7949 | 7.01372 | 0 | 1.69563 | 0.00361 | 0 | 0.00143 | 0.005 | 0.03384 | 0.00393 | 0 | 0.00156 | 0.02 | 0.09669 | 2166.16 | 0 | 50.0442 | 0.24601 | 0 | 0.00021 | 0.19293 | 0 | 0.0498 | 1.47824 | 0 | 0.00112 | 0.14902 | 1.34233 | 10.0255 | 2.15705 | 0 | 0.00122 | 0.14902 | 1.34233 | 10.0255 | 0.04274 | 52.519 | 0 | 1.60109 | 0.02141 | 0 | 0.00049 |
| Santa Clara | 2024 | HHDT | Aggregate | Aggregate | Diesel | 8486.69 | 1001095 | 1001095 | 0 | 124748 | 1.89457 | 62.3204 | 2.89887 | 0.02567 | 0.03017 | 0 | 0.00877 | 0.02745 | 0.02683 | 0.03153 | 0 | 0.03508 | 0.07844 | 1634.1 | 11997 | 0 | 0.00078 | 0.23663 | 0 | 0.25745 | 1.89013 | 0 | 0.01673 | 5.09458 | 0 | 0 | 0 | 0 | 0.01905 | 5.7998 | 0 | 0 | 0 | 0 | 0 | 0.21508 | 0.08252 | 74.1058 | 0 | 0.01547 | 0.1136 | 0 |
| Santa Clara | 2024 | HHDT | Aggregate | Aggregate | Electricity | 28.3304 | 2794.26 | 0 | 2794.26 | 378.795 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00859 | 0.01406 | 0 | 0 | 0 | 0.03434 | 0.04016 | 0 | 0 | 0 | 0 | 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 | 54591.3 | 54591.3 | 0 | 7249.72 | 1.12825 | 13.5551 | 0 | 0.00172 | 0.02478 | 0 | 0.009 | 0.04752 | 0.00187 | 0.02695 | 0 | 0.036 | 0.13578 | 1387.53 | 10583.6 | 0 | 2.34474 | 36.3028 | 0 | 0.28286 | 2.15754 | 0 | 0.05083 | 0.5507 | 0 | 0 | 0 | 0 | 2.41273 | 37.0861 | 0 | 0 | 0 | 0 | 0 | 0.85184 | 13.402 | 74.4313 | 0 | 0 | 0 | 0 |
| Santa Clara | 2024 | LDA | Aggregate | Aggregate | Gasoline | 600108 | 2.2E+07 | 2.2E+07 | 0 | 2786617 | 0.04228 | 0 | 0.25799 | 0.00118 | 0 | 0.00193 | 0.002 | 0.00266 | 0.00128 | 0 | 0.0021 | 0.008 | 0.00759 | 275.955 | 0 | 70.0807 | 0.00234 | 0 | 0.07204 | 0.00467 | 0 | 0.03323 | 0.00894 | 0 | 0.32895 | 0.09049 | 0.23039 | 1.42264 | 0.01304 | 0 | 0.36016 | 0.09049 | 0.23039 | 1.42264 | 0.03471 | 0.73752 | 0 | 3.23307 | 0.00273 | 0 | 0.00069 |
| Santa Clara | 2024 | LDA | Aggregate | Aggregate | Diesel | 1750.02 | 51573.5 | 51573.5 | 0 | 7442.61 | 0.21318 | 0 | 0 | 0.01675 | 0 | 0 | 0.002 | 0.00271 | 0.0175 | 0 | 0 | 0.008 | 0.00773 | 232.398 | 0 | 0 | 0.00129 | 0 | 0 | 0.03661 | 0 | 0 | 0.02775 | 0 | 0 | 0 | 0 | 0 | 0.03159 | 0 | 0 | 0 | 0 | 0 | 0.0031 | 0.33111 | 0 | 0 | 0.0022 | 0 | 0 |
| Santa Clara | 2024 | LDA | Aggregate | Aggregate | Electricity | 57627.4 | 2472767 | 0 | 2472767 | 282733 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00153 | 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 Hy | 17457.1 | 767059 | 381569 | 385491 | 72185.1 | 0.00326 | 0 | 0.11551 | 0.00062 | 0 | 0.00207 | 0.002 | 0.00138 | 0.00067 | 0 | 0.00225 | 0.008 | 0.00393 | 138.86 | 0 | 65.1247 | 0.00044 | 0 | 0.04244 | 0.00059 | 0 | 0.02076 | 0.00141 | 0 | 0.17328 | 0.04111 | 0.03729 | 0.4471 | 0.00206 | 0 | 0.18973 | 0.04111 | 0.03729 | 0.4471 | 0.0195 | 0.21485 | 0 | 1.33989 | 0.00137 | 0 | 0.00064 |
| Santa Clara | 2024 | LDT1 | Aggregate | Aggregate | Gasoline | 52693.4 | 1706864 | 1706864 | 0 | 234793 | 0.12836 | 0 | 0.38129 | 0.00174 | 0 | 0.00268 | 0.002 | 0.00324 | 0.00189 | 0 | 0.00291 | 0.008 | 0.00926 | 327.257 | 0 | 86.3843 | 0.00626 | 0 | 0.10537 | 0.00942 | 0 | 0.03869 | 0.02774 | 0 | 0.53932 | 0.16533 | 0.47248 | 2.66716 | 0.04048 | 0 | 0.59049 | 0.16533 | 0.47248 | 2.66716 | 0.03608 | 1.42762 | 0 | 5.25305 | 0.00324 | 0 | 0.00085 |
| Santa Clara | 2024 | LDT1 | Aggregate | Aggregate | Diesel | 23.4623 | 343.931 | 343.931 | 0 | 66.4446 | 1.65193 | 0 | 0 | 0.23937 | 0 | 0 | 0.002 | 0.00372 | 0.2502 | 0 | 0 | 0.008 | 0.01064 | 415.3 | 0 | 0 | 0.01386 | 0 | 0 | 0.06543 | 0 | 0 | 0.29845 | 0 | 0 | 0 | 0 | 0 | 0.33976 | 0 | 0 | 0 | 0 | 0 | 0.0031 | 1.59366 | 0 | 0 | 0.00394 | 0 | 0 |
| Santa Clara | 2024 | LDT1 | Aggregate | Aggregate | Electricity | 211.003 | 8008.65 | 0 | 8008.65 | 994.435 | 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 |
| Santa Clara | 2024 | LDT1 | Aggregate | Aggregate | Plug-in Hy | 67.6458 | 3164.46 | 1414.3 | 1750.16 | 279.715 | 0.00293 | 0 | 0.11551 | 0.00037 | 0 | 0.00138 | 0.002 | 0.00139 | 0.0004 | 0 | 0.0015 | 0.008 | 0.00397 | 124.846 | 0 | 69.3121 | 0.0004 | 0 | 0.04222 | 0.00052 | 0 | 0.02056 | 0.00127 | 0 | 0.17328 | 0.02415 | 0.02096 | 0.27963 | 0.00185 | 0 | 0.18973 | 0.02415 | 0.02096 | 0.27963 | 0.01877 | 0.19347 | 0 | 1.33989 | 0.00123 | 0 | 0.00069 |
| Santa Clara | 2024 | LDT2 | Aggregate | Aggregate | Gasoline | 285585 | 1E+07 | 1E+07 | 0 | 1336438 | 0.06909 | 0 | 0.33424 | 0.00123 | 0 | 0.00196 | 0.002 | 0.00313 | 0.00133 | 0 | 0.00213 | 0.008 | 0.00894 | 340.325 | 0 | 87.2943 | 0.00286 | 0 | 0.08298 | 0.00594 | 0 | 0.03725 | 0.01124 | 0 | 0.38422 | 0.08174 | 0.21769 | 1.36819 | 0.0164 | 0 | 0.42067 | 0.08174 | 0.21769 | 1.36819 | 0.03636 | 0.84212 | 0 | 3.67376 | 0.00336 | 0 | 0.00086 |
| Santa Clara | 2024 | LDT2 | Aggregate | Aggregate | Diesel | 1015.45 | 37944.3 | 37944.3 | 0 | 4835.43 | 0.04151 | 0 | 0 | 0.00481 | 0 | 0 | 0.002 | 0.00311 | 0.00503 | 0 | 0 | 0.008 | 0.00889 | 307.161 | 0 | 0 | 0.00061 | 0 | 0 | 0.04839 | 0 | 0 | 0.0131 | 0 | 0 | 0 | 0 | 0 | 0.01492 | 0 | 0 | 0 | 0 | 0 | 0.0031 | 0.12998 | 0 | 0 | 0.00291 | 0 | 0 |
| Santa Clara | 2024 | LDT2 | Aggregate | Aggregate | Electricity | 1597.57 | 55532.6 | 0 | 55532.6 | 8150.93 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00153 | 0 | 0 | 0 | 0.008 | 0.00436 | 0 | 0 | 0 | 0 | 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 Hy | 2116.58 | 94757.7 | 44376.6 | 50381.1 | 8752.06 | 0.00307 | 0 | 0.11551 | 0.00047 | 0 | 0.00167 | 0.002 | 0.00138 | 0.00051 | 0 | 0.00182 | 0.008 | 0.00395 | 130.788 | 0 | 75.6058 | 0.00042 | 0 | 0.04223 | 0.00055 | 0 | 0.02057 | 0.00133 | 0 | 0.17328 | 0.02595 | 0.02369 | 0.30939 | 0.00194 | 0 | 0.18973 | 0.02595 | 0.02369 | 0.30939 | 0.01964 | 0.20257 | 0 | 1.33989 | 0.00129 | 0 | 0.00075 |
| Santa Clara | 2024 | LHDT1 | Aggregate | Aggregate | Gasoline | 19314.1 | 7225.29 | 7225.29 | 0 | 2877.52 | 0.17374 | 0.03622 | 0.637 | 0.00153 | 0 | 0.0003 | 0.002 | 0.0273 | 0.00167 | 0 | 0.00033 | 0.008 | 0.078 | 871.456 | 119.099 | 25.7802 | 0.00836 | 0.11294 | 0.033 | 0.00978 | 0.00298 | 0.05097 | 0.04172 | 0.41502 | 0.16361 | 0.0474 | 0.26314 | 2.76851 | 0.06087 | 0.6056 | 0.17913 | 0.0474 | 0.26314 | 2.76851 | 0.0449 | 1.14228 | 3.75621 | 3.12393 | 0.00862 | 0.00118 | 0.00025 |
| Santa Clara | 2024 | LHDT1 | Aggregate | Aggregate | Diesel | 10107.7 | 398004 | 398004 | 0 | 127143 | 1.56302 | 1.92168 | 0 | 0.03506 | 0.0268 | 0 | 0.003 | 0.0273 | 0.03664 | 0.02802 | 0 | 0.012 | 0.078 | 631.401 | 131.15 | 0 | 0.00801 | 0.0051 | 0 | 0.09948 | 0.02066 | 0 | 0.17236 | 0.10976 | 0 | 0 | 0 | 0 | 0.19622 | 0.12495 | 0 | 0 | 0 | 0 | 0.17278 | 0.47359 | 0.90975 | 0 | 0.00598 | 0.00124 | 0 |
| Santa Clara | 2024 | LHDT1 | Aggregate | Aggregate | Electricity | 70.8284 | 5110.54 | 0 | 5110.54 | 989.427 | 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 | 2506.91 | 91452.6 | 91452.6 | 0 | 37349.2 | 0.16518 | 0.0356 | 0.62153 | 0.00139 | 0 | 0.00024 | 0.002 | 0.03185 | 0.00151 | 0 | 0.00026 | 0.008 | 0.091 | 980.036 | 127.592 | 25.5129 | 0.00618 | 0.11145 | 0.03198 | 0.00982 | 0.00291 | 0.04938 | 0.02861 | 0.40822 | 0.15724 | 0.04419 | 0.23817 | 2.55839 | 0.04175 | 0.55957 | 0.17216 | 0.04419 | 0.23817 | 2.55839 | 0.04497 | 0.89921 | 3.76255 | 3.12993 | 0.00969 | 0.00136 | 0.00025 |
| Santa Clara | 2024 | LHDT2 | Aggregate | Aggregate | Diesel | 4663.46 | 183558 | 183558 | 0 | 58660.4 | 1.2661 | 1.8954 | 0 | 0.03205 | 0.027 | 0 | 0.003 | 0.03185 | 0.0335 | 0.02822 | 0 | 0.012 | 0.091 | 756.868 | 209.562 | 0 | 0.00741 | 0.0051 | 0 | 0.11924 | 0.03302 | 0 | 0.15944 | 0.10976 | 0 | 0 | 0 | 0 | 0.18151 | 0.12495 | 0 | 0 | 0 | 0 | 0.18413 | 0.41186 | 0.90975 | 0 | 0.00717 | 0.00199 | 0 |
| Santa Clara | 2024 | LHDT2 | Aggregate | Aggregate | Electricity | 18.3326 | 1253.29 | 0 | 1253.29 | 242.668 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.01593 | 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 | 28171.5 | 166022 | 166022 | 0 | 56343 | 0.57134 | 0 | 0.13548 | 0.00178 | 0 | 0.00325 | 0.001 | 0.0042 | 0.0019 | 0 | 0.00346 | 0.004 | 0.012 | 187.743 | 0 | 48.377 | 0.16261 | 0 | 0.18197 | 0.03956 | 0 | 0.00802 | 1.06218 | 0 | 1.34532 | 3.55928 | 3.75283 | 3.90029 | 1.27695 | 0 | 1.46261 | 3.55928 | 3.75283 | 3.90029 | 0.00881 | 12.6697 | 0 | 8.00299 | 0.00186 | 0 | 0.00048 |
| Santa Clara | 2024 | MDV | Aggregate | Aggregate | Gasoline | 156642 | 5468054 | 5468054 | 0 | 726101 | 0.10128 | 0 | 0.42828 | 0.00123 | 0 | 0.00204 | 0.002 | 0.00318 | 0.00134 | 0 | 0.00222 | 0.008 | 0.0091 | 412.805 | 0 | 106.222 | 0.00387 | 0 | 0.10186 | 0.00763 | 0 | 0.04097 | 0.01626 | 0 | 0.50881 | 0.09705 | 0.27572 | 1.67706 | 0.02372 | 0 | 0.55708 | 0.09705 | 0.27572 | 1.67706 | 0.03618 | 0.97224 | 0 | 4.02296 | 0.00408 | 0 | 0.00105 |
| Santa Clara | 2024 | MDV | Aggregate | Aggregate | Diesel | 2400.61 | 86292.7 | 86292.7 | 0 | 11318.8 | 0.04884 | 0 | 0 | 0.00491 | 0 | 0 | 0.002 | 0.00321 | 0.00513 | 0 | 0 | 0.008 | 0.00916 | 405.662 | 0 | 0 | 0.00051 | 0 | 0 | 0.06391 | 0 | 0 | 0.01098 | 0 | 0 | 0 | 0 | 0 | 0.0125 | 0 | 0 | 0 | 0 | 0 | 0.0031 | 0.20154 | 0 | 0 | 0.00384 | 0 | 0 |
| Santa Clara | 2024 | MDV | Aggregate | Aggregate | Electricity | 1678.68 | 58660.6 | 0 | 58660.6 | 8578.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00153 | 0 | 0 | 0 | 0.008 | 0.00436 | 0 | 0 | 0 | 0 | 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 Hy | 1250.86 | 52904 | 25301.5 | 27602.5 | 5172.29 | 0.00314 | 0 | 0.11551 | 0.00056 | 0 | 0.00196 | 0.002 | 0.00138 | 0.00061 | 0 | 0.00213 | 0.008 | 0.00395 | 133.537 | 0 | 94.0638 | 0.00042 | 0 | 0.04205 | 0.00055 | 0 | 0.0204 | 0.00136 | 0 | 0.17328 | 0.03032 | 0.02668 | 0.34169 | 0.00198 | 0 | 0.18973 | 0.03032 | 0.02668 | 0.34169 | 0.02009 | 0.20674 | 0 | 1.33989 | 0.00132 | 0 | 0.00093 |
| Santa Clara | 2024 | MH | Aggregate | Aggregate | Gasoline | 2420.57 | 22012.3 | 22012.3 | 0 | 242.154 | 0.42094 | 0 | 0.41996 | 0.00168 | 0 | 0.0004 | 0.003 | 0.01576 | 0.00183 | 0 | 0.00044 | 0.012 | 0.04502 | 1947.5 | 0 | 31.6506 | 0.01548 | 0 | 0.03754 | 0.02573 | 0 | 0.04407 | 0.06827 | 0 | 0.15912 | 12.2114 | 0.28677 | 4.59648 | 0.09962 | 0 | 0.17422 | 12.2114 | 0.28677 | 4.59648 | 0.04485 | 1.68222 | 0 | 3.49725 | 0.01925 | 0 | 0.00031 |
| Santa Clara | 2024 | MH | Aggregate | Aggregate | Diesel | 977.361 | 9498.3 | 9498.3 | 0 | 97.7161 | 4.11717 | 0 | 0 | 0.09177 | 0 | 0 | 0.004 | 0.01567 | 0.09592 | 0 | 0 | 0.016 | 0.04479 | 1081.93 | 0 | 0 | 0.00556 | 0 | 0 | 0.17046 | 0 | 0 | 0.11965 | 0 | 0 | 0 | 0 | 0 | 0.13621 | 0 | 0 | 0 | 0 | 0 | 0.15554 | 0.39728 | 0 | 0 | 0.01025 | 0 | 0 |
| Santa Clara | 2024 | MHDT | Aggregate | Aggregate | Gasoline | 1414.55 | 71600.4 | 71600.4 | 0 | 28302.3 | 0.47075 | 0.08848 | 0.44096 | 0.00136 | 0 | 0.00053 | 0.003 | 0.01576 | 0.00148 | 0 | 0.00058 | 0.012 | 0.04502 | 1768.69 | 531.8 | 46.2523 | 0.01505 | 0.25808 | 0.04757 | 0.02291 | 0.00727 | 0.03271 | 0.07495 | 1.01271 | 0.26541 | 0.03395 | 0.27636 | 2.79871 | 0.10937 | 1.47774 | 0.29059 | 0.03395 | 0.27636 | 2.79871 | 0.04498 | 1.56073 | 15.1163 | 5.82581 | 0.01749 | 0.00526 | 0.00046 |
| Santa Clara | 2024 | MHDT | Aggregate | Aggregate | Diesel | 10390.5 | 434044 | 434044 | 0 | 123939 | 1.23282 | 13.1195 | 1.64273 | 0.0144 | 0.0299 | 0 | 0.003 | 0.01594 | 0.01505 | 0.03125 | 0 | 0.012 | 0.04555 | 1147.31 | 2248.55 | 0 | 0.00151 | 0.01158 | 0 | 0.18076 | 0.35426 | 0 | 0.03245 | 0.24932 | 0 | 0 | 0 | 0 | 0.03695 | 0.28383 | 0 | 0 | 0 | 0 | 0.21053 | 0.12087 | 7.55603 | 0 | 0.01086 | 0.02129 | 0 |
| Santa Clara | 2024 | MHDT | Aggregate | Aggregate | Electricity | 30.916 | 1660.35 | 0 | 1660.35 | 407.454 | 0 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.00796 | 0 | 0 | 0 | 0.012 | 0.02273 | 0 | 0 | 0 | 0 | 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 | 90.5945 | 4303.58 | 4303.58 | 0 | 827.623 | 0.13342 | 6.49972 | 0 | 0.00118 | 0.01813 | 0 | 0.003 | 0.01601 | 0.00128 | 0.01972 | 0 | 0.012 | 0.04573 | 984.692 | 5301.1 | 0 | 0.74573 | 17.3141 | 0 | 0.20074 | 1.08066 | 0 | 0.01066 | 0.24738 | 0 | 0 | 0 | 0 | 0.76107 | 17.6703 | 0 | 0 | 0 | 0 | 1.06 | 2.99584 | 34.7393 | 0 | 0 | 0 | 0 |
| Santa Clara | 2024 | OBUS | Aggregate | Aggregate | Gasoline | 443.147 | 19894.3 | 19894.3 | 0 | 8866.48 | 0.49672 | 0.06506 | 0.40855 | 0.00091 | 0 | 0.00025 | 0.003 | 0.01568 | 0.00099 | 0 | 0.00027 | 0.012 | 0.0448 | 1764 | 379.414 | 31.6131 | 0.01376 | 0.19573 | 0.03606 | 0.02402 | 0.0053 | 0.03103 | 0.06708 | 0.74628 | 0.19096 | 0.03387 | 0.15492 | 2.81839 | 0.09788 | 1.08897 | 0.20908 | 0.03387 | 0.15492 | 2.81839 | 0.04497 | 1.49158 | 5.77464 | 4.00064 | 0.01744 | 0.00375 | 0.00031 |
| Santa Clara | 2024 | OBUS | Aggregate | Aggregate | Diesel | 893.138 | 61949.1 | 61949.1 | 0 | 9141.63 | 1.17864 | 7.36339 | 1.54316 | 0.01985 | 0.00817 | 0 | 0.003 | 0.01802 | 0.02075 | 0.00854 | 0 | 0.012 | 0.05147 | 1273.38 | 1538.56 | 0 | 0.00193 | 0.02048 | 0 | 0.20062 | 0.2424 | 0 | 0.04166 | 0.4409 | 0 | 0 | 0 | 0 | 0.04743 | 0.50194 | 0 | 0 | 0 | 0 | 0.21602 | 0.15018 | 7.50048 | 0 | 0.01206 | 0.01457 | 0 |
| Santa Clara | 2024 | OBUS | Aggregate | Aggregate | Electricity | 1.08748 | 92.501 | 0 | 92.501 | 21.7583 | 0 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.00784 | 0 | 0 | 0 | 0.012 | 0.0224 | 0 | 0 | 0 | 0 | 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 | 469.388 | 469.388 | 0 | 62.8106 | 0.19059 | 1.53741 | 0 | 0.00106 | 0.0039 | 0 | 0.003 | 0.01615 | 0.00115 | 0.00424 | 0 | 0.012 | 0.04614 | 1004.24 | 1191.58 | 0 | 0.7898 | 4.2369 | 0 | 0.20472 | 0.24291 | 0 | 0.01128 | 0.06054 | 0 | 0 | 0 | 0 | 0.80604 | 4.32406 | 0 | 0 | 0 | 0 | 1.06 | 3.25433 | 7.35306 | 0 | 0 | 0 | 0 |
| Santa Clara | 2024 | SBUS | Aggregate | Aggregate | Gasoline | 172.695 | 8584.87 | 8584.87 | 0 | 690.779 | 0.50288 | 0.92594 | 0.7168 | 0.00086 | 0 | 0.00057 | 0.002 | 0.01572 | 0.00094 | 0 | 0.00062 | 0.008 | 0.04492 | 810.606 | 2589.13 | 58.1367 | 0.01114 | 2.46486 | 0.07489 | 0.0271 | 0.08631 | 0.06593 | 0.05406 | 10.6329 | 0.42637 | 0.11391 | 0.27469 | 1.68617 | 0.07888 | 15.5155 | 0.46682 | 0.11391 | 0.27469 | 1.68617 | 0.045 | 1.38705 | 82.1884 | 10.3662 | 0.00801 | 0.0256 | 0.00057 |
| Santa Clara | 2024 | SBUS | Aggregate | Aggregate | Diesel | 670.596 | 15345.3 | 15345.3 | 0 | 9710.23 | 3.82139 | 21.8769 | 0.48285 | 0.01977 | 0.0197 | 0 | 0.003 | 0.01572 | 0.02066 | 0.02059 | 0 | 0.012 | 0.04492 | 1144.18 | 2229 | 0 | 0.00266 | 0.008 | 0 | 0.18027 | 0.35118 | 0 | 0.05738 | 0.17226 | 0 | 0 | 0 | 0 | 0.06532 | 0.1961 | 0 | 0 | 0 | 0 | 0.14802 | 0.1775 | 4.67779 | 0 | 0.01083 | 0.02111 | 0 |
| Santa Clara | 2024 | SBUS | Aggregate | Aggregate | Electricity | 2.06467 | 64.355 | 0 | 64.355 | 23.6464 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00254 | 0.00786 | 0 | 0 | 0 | 0.01016 | 0.02246 | 0 | 0 | 0 | 0 | 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 | 612.094 | 612.094 | 0 | 353.305 | 0.56773 | 5.2709 | 0 | 0.00338 | 0.01136 | 0 | 0.003 | 0.01572 | 0.00367 | 0.01235 | 0 | 0.012 | 0.04492 | 1261.3 | 4066.74 | 0 | 3.43667 | 15.2567 | 0 | 0.25713 | 0.82903 | 0 | 0.0491 | 0.21799 | 0 | 0 | 0 | 0 | 3.50738 | 15.5705 | 0 | 0 | 0 | 0 | 1.06 | 11.649 | 20.7469 | 0 | 0 | 0 | 0 |
| Santa Clara | 2024 | UBUS | Aggregate | Aggregate | Gasoline | 46.0831 | 4812.45 | 4812.45 | 0 | 184.333 | 0.02748 | 0 | 0.45723 | 0.00114 | 0 | 0.00013 | 0.002 | 0.03185 | 0.00124 | 0 | 0.00014 | 0.008 | 0.091 | 926.084 | 0 | 36.9478 | 0.00203 | 0 | 0.04307 | 0.00429 | 0 | 0.07172 | 0.00563 | 0 | 0.15298 | 0.0381 | 0.09212 | 0.45644 | 0.00822 | 0 | 0.16749 | 0.0381 | 0.09212 | 0.45644 | 0.045 | 0.58115 | 0 | 6.1305 | 0.00916 | 0 | 0.00037 |
| Santa Clara | 2024 | UBUS | Aggregate | Aggregate | Diesel | 437.474 | 48917.6 | 48917.6 | 0 | 1749.9 | 0.38626 | 0 | 0 | 0.00702 | 0 | 0 | 0.0083 | 0.0385 | 0.00734 | 0 | 0 | 0.0332 | 0.11 | 1101.14 | 0 | 0 | 0.00321 | 0 | 0 | 0.17348 | 0 | 0 | 0.06921 | 0 | 0 | 0 | 0 | 0 | 0.07879 | 0 | 0 | 0 | 0 | 0 | 0.18791 | 0.07937 | 0 | 0 | 0.01043 | 0 | 0 |
| Santa Clara | 2024 | UBUS | Aggregate | Aggregate | Electricity | 5.34757 | 235.063 | 0 | 235.063 | 21.3903 | 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 | 42.587 | 4865.19 | 4865.19 | 0 | 170.348 | 0.05879 | 0 | 0 | 0.00028 | 0 | 0 | 0.00818 | 0.0385 | 0.0003 | 0 | 0 | 0.03273 | 0.11 | 1299.21 | 0 | 0 | 4.24606 | 0 | 0 | 0.26485 | 0 | 0 | 0.06067 | 0 | 0 | 0 | 0 | 0 | 4.33341 | 0 | 0 | 0 | 0 | 0 | 0.97 | 49.0479 | 0 | 0 | 0 | 0 | 0 |

Source: EMFAC2021 (v1.0.2) 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, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

| Region | Calendar Y | Vehicle Ca | Model Yea | Speed | Fuel | Population | Total VMT | CVMT | EVMT | Trips | NOx RUN | NOx IDLEX | NOx STREX | PM2.5 RU | PM2.5 IDL | PM2.5 STI | PM2.5 PM | PM2.5 TW | PM10 RU | PM10 IDL | PM10 STR | PM10 PM | PM10 PM | CO2 RUN | CO2 IDLEX | CO2 STREX | CH4 RUNI | CH4 IDLEX | CH4 STREX | N2O RUN | N2O IDLEX | N2O STREX | ROG RUN | ROG IDLEX | ROG STREX | ROG HOTS | ROG RUN | ROG DIUR | TOG RUN | TOG IDLEX | TOG STREX | TOG HOTS | TOG RUN | TOG DIUR | NH3 RUN | CO RUNEX | CO_IDLEX | CO_STREX | SOx RUNEX | SOx IDLEX | SOx_STREX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Santa Clara | 2025 | HHDT | Aggregate | Aggregate | Gasoline | 2.33036 | 124.945 | 124.945 | 0 | 46.6258 | 5.55691 | 0 | 1.37904 | 0.0031 | 0 | 0.0014 | 0.005 | 0.03307 | 0.00338 | 0 | 0.00152 | 0.02 | 0.09448 | 2106.23 | 0 | 50.0314 | 0.20741 | 0 | 0.00023 | 0.16706 | 0 | 0.04156 | 1.2222 | 0 | 0.00123 | 0.14022 | 1.26302 | 9.43465 | 1.78343 | 0 | 0.00135 | 0.14022 | 1.26302 | 9.43465 | 0.04316 | 47.7242 | 0 | 2.00162 | 0.02082 | 0 | 0.00049 |
| Santa Clara | 2025 | HHDT | Aggregate | Aggregate | Diesel | 8692.57 | 1008964 | 1008964 | 0 | 127877 | 1.82519 | 60.9145 | 2.93199 | 0.02533 | 0.02894 | 0 | 0.00877 | 0.02742 | 0.02648 | 0.03025 | 0 | 0.03509 | 0.07835 | 1608.78 | 11755.3 | 0 | 0.00075 | 0.23589 | 0 | 0.25346 | 1.85206 | 0 | 0.01614 | 5.07867 | 0 | 0 | 0 | 0 | 0.01837 | 5.78168 | 0 | 0 | 0 | 0 | 0.21551 | 0.07808 | 74.009 | 0 | 0.01523 | 0.11132 | 0 |
| Santa Clara | 2025 | HHDT | Aggregate | Aggregate | Electricity | 63.3712 | 6579.67 | 0 | 6579.67 | 825.997 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00855 | 0.01428 | 0 | 0 | 0 | 0.03421 | 0.0408 | 0 | 0 | 0 | 0 | 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 | 55779.4 | 55779.4 | 0 | 7555.5 | 1.04986 | 13.1849 | 0 | 0.00168 | 0.02526 | 0 | 0.009 | 0.0483 | 0.00183 | 0.02747 | 0 | 0.0196 | 0.13801 | 1375.94 | 10529.3 | 0 | 2.23593 | 35.1761 | 0 | 0.28049 | 2.14647 | 0 | 0.04724 | 0.53012 | 0 | 0 | 0 | 0 | 2.29935 | 35.9311 | 0 | 0 | 0 | 0 | 0.84378 | 13.0127 | 74.7548 | 0 | 0 | 0 | 0 |
| Santa Clara | 2025 | LDA | Aggregate | Aggregate | Gasoline | 598860 | 2.2E+07 | 2.2E+07 | 0 | 2780384 | 0.03821 | 0 | 0.24554 | 0.00114 | 0 | 0.00188 | 0.002 | 0.00266 | 0.00124 | 0 | 0.00204 | 0.008 | 0.00759 | 270.174 | 0 | 68.4735 | 0.00212 | 0 | 0.06782 | 0.00441 | 0 | 0.03229 | 0.00795 | 0 | 0.30631 | 0.08719 | 0.2243 | 1.38495 | 0.03561 | 0.6952 | 0 | 3.04945 | 0.00267 | 0 | 0.00068 |
| Santa Clara | 2025 | LDA | Aggregate | Aggregate | Diesel | 1620.04 | 46912.9 | 46912.9 | 0 | 6871.19 | 0.18842 | 0 | 0 | 0.01524 | 0 | 0 | 0.002 | 0.00271 | 0.01592 | 0 | 0 | 0.008 | 0.00775 | 229.948 | 0 | 0 | 0.00119 | 0 | 0 | 0.03623 | 0 | 0 | 0.02569 | 0 | 0 | 0 | 0 | 0 | 0.02925 | 0 | 0 | 0 | 0 | 0.0031 | 0.31991 | 0 | 0 | 0.00218 | 0 | 0 |
| Santa Clara | 2025 | LDA | Aggregate | Aggregate | Electricity | 61443.2 | 2670452 | 0 | 2670452 | 299853 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00153 | 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 | 2025 | LDA | Aggregate | Aggregate | Plug-in Hy | 19037.7 | 825568 | 401013 | 424555 | 78720.7 | 0.00319 | 0 | 0.11551 | 0.00058 | 0 | 0.00199 | 0.002 | 0.00138 | 0.00063 | 0 | 0.00216 | 0.008 | 0.00395 | 135.585 | 0 | 64.1084 | 0.00043 | 0 | 0.04225 | 0.00057 | 0 | 0.02058 | 0.00138 | 0 | 0.17328 | 0.04116 | 0.03735 | 0.44053 | 0.00201 | 0 | 0.18973 | 0.04116 | 0.03735 | 0.44053 | 0.01924 | 0.20976 | 0 | 1.33989 | 0.00134 | 0 | 0.00063 |
| Santa Clara | 2025 | LDT1 | Aggregate | Aggregate | Gasoline | 51680.9 | 1664706 | 1664706 | 0 | 230186 | 0.11536 | 0 | 0.35972 | 0.00164 | 0 | 0.00254 | 0.002 | 0.00324 | 0.00178 | 0 | 0.00277 | 0.008 | 0.00926 | 321.489 | 0 | 84.4555 | 0.00562 | 0 | 0.09855 | 0.00869 | 0 | 0.03751 | 0.02471 | 0 | 0.49882 | 0.15696 | 0.4423 | 2.52236 | 0.03606 | 0 | 0.54614 | 0.15696 | 0.4423 | 2.52236 | 0.03645 | 1.31742 | 0 | 4.88612 | 0.00318 | 0 | 0.00083 |
| Santa Clara | 2025 | LDT1 | Aggregate | Aggregate | Diesel | 21.2827 | 302.826 | 302.826 | 0 | 59.1323 | 1.64381 | 0 | 0 | 0.23817 | 0 | 0 | 0.002 | 0.00372 | 0.24894 | 0 | 0 | 0.008 | 0.01063 | 414.944 | 0 | 0 | 0.0138 | 0 | 0 | 0.06537 | 0 | 0 | 0.29704 | 0 | 0 | 0 | 0 | 0 | 0.33816 | 0 | 0 | 0 | 0 | 0.0031 | 1.58507 | 0 | 0 | 0.00393 | 0 | 0 |
| Santa Clara | 2025 | LDT1 | Aggregate | Aggregate | Electricity | 234.458 | 9323.7 | 0 | 9323.7 | 1109.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00154 | 0 | 0 | 0 | 0.008 | 0.00439 | 0 | 0 | 0 | 0 | 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 Hy | 98.132 | 4519.18 | 1961.29 | 2557.9 | 405.776 | 0.00285 | 0 | 0.11551 | 0.00035 | 0 | 0.00137 | 0.002 | 0.00139 | 0.00038 | 0 | 0.00148 | 0.008 | 0.00398 | 121.222 | 0 | 67.7568 | 0.00038 | 0 | 0.04199 | 0.0005 | 0 | 0.02034 | 0.00123 | 0 | 0.17328 | 0.0239 | 0.02038 | 0.27675 | 0.0018 | 0 | 0.18973 | 0.0239 | 0.02038 | 0.27675 | 0.01823 | 0.18782 | 0 | 1.33989 | 0.0012 | 0 | 0.00067 |
| Santa Clara | 2025 | LDT2 | Aggregate | Aggregate | Gasoline | 290875 | 1E+07 | 1E+07 | 0 | 1360241 | 0.06257 | 0 | 0.31436 | 0.00119 | 0 | 0.00192 | 0.002 | 0.00313 | 0.0013 | 0 | 0.00209 | 0.008 | 0.00894 | 332.184 | 0 | 85.0683 | 0.00264 | 0 | 0.07849 | 0.00559 | 0 | 0.03604 | 0.01024 | 0 | 0.36007 | 0.07945 | 0.21494 | 1.34926 | 0.01495 | 0 | 0.39423 | 0.07945 | 0.21494 | 1.34926 | 0.03712 | 0.79562 | 0 | 3.47417 | 0.00328 | 0 | 0.00084 |
| Santa Clara | 2025 | LDT2 | Aggregate | Aggregate | Diesel | 1049.95 | 38652.3 | 38652.3 | 0 | 4980.34 | 0.03933 | 0 | 0 | 0.00473 | 0 | 0 | 0.002 | 0.00312 | 0.00494 | 0 | 0 | 0.008 | 0.00892 | 301.005 | 0 | 0 | 0.0006 | 0 | 0 | 0.04742 | 0 | 0 | 0.01298 | 0 | 0 | 0 | 0 | 0 | 0.01478 | 0 | 0 | 0 | 0 | 0.0031 | 0.1298 | 0 | 0 | 0.00285 | 0 | 0 |
| Santa Clara | 2025 | LDT2 | Aggregate | Aggregate | Electricity | 2157.06 | 73663.8 | 0 | 73663.8 | 10962.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00153 | 0 | 0 | 0 | 0.008 | 0.00436 | 0 | 0 | 0 | 0 | 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 Hy | 2561.89 | 112327 | 51267.4 | 61059.8 | 10593.4 | 0.00299 | 0 | 0.11551 | 0.00044 | 0 | 0.00161 | 0.002 | 0.00139 | 0.00048 | 0 | 0.00175 | 0.008 | 0.00397 | 127.451 | 0 | 74.1408 | 0.0004 | 0 | 0.04199 | 0.00053 | 0 | 0.02034 | 0.0013 | 0 | 0.17328 | 0.02607 | 0.02336 | 0.30536 | 0.00189 | 0 | 0.18973 | 0.02607 | 0.02336 | 0.30536 | 0.01914 | 0.19736 | 0 | 1.33989 | 0.00126 | 0 | 0.00073 |
| Santa Clara | 2025 | LHDT1 | Aggregate | Aggregate | Gasoline | 19422.5 | 728337 | 728337 | 0 | 289366 | 0.15211 | 0.03512 | 0.61458 | 0.00148 | 0 | 0.00028 | 0.002 | 0.0273 | 0.00161 | 0 | 0.0003 | 0.008 | 0.078 | 855.402 | 117.978 | 25.7071 | 0.00721 | 0.11033 | 0.03161 | 0.00861 | 0.00294 | 0.04993 | 0.03557 | 0.40247 | 0.15588 | 0.04427 | 0.24778 | 2.61641 | 0.0519 | 0.58728 | 0.17067 | 0.04427 | 0.24778 | 2.61641 | 0.04493 | 1.05316 | 3.75909 | 3.16195 | 0.00846 | 0.00117 | 0.00025 |
| Santa Clara | 2025 | LHDT1 | Aggregate | Aggregate | Diesel | 10387.1 | 408019 | 408019 | 0 | 130657 | 1.37924 | 1.82341 | 0 | 0.03235 | 0.02669 | 0 | 0.003 | 0.0273 | 0.03381 | 0.0279 | 0 | 0.012 | 0.078 | 628.07 | 129.547 | 0 | 0.00747 | 0.0051 | 0 | 0.09895 | 0.02041 | 0 | 0.16078 | 0.10976 | 0 | 0 | 0 | 0 | 0.18304 | 0.12495 | 0 | 0 | 0 | 0 | 0.17898 | 0.43509 | 0.90975 | 0 | 0.00595 | 0.00123 | 0 |
| Santa Clara | 2025 | LHDT1 | Aggregate | Aggregate | Electricity | 196.402 | 13079.1 | 0 | 13079.1 | 2746.63 | 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 | 2025 | LHDT2 | Aggregate | Aggregate | Gasoline | 2512.65 | 91345.1 | 91345.1 | 0 | 37434.8 | 0.14619 | 0.03445 | 0.60089 | 0.00135 | 0 | 0.00022 | 0.002 | 0.03185 | 0.00146 | 0 | 0.00024 | 0.008 | 0.091 | 964.576 | 136.447 | 25.311 | 0.00547 | 0.10842 | 0.03058 | 0.0088 | 0.00285 | 0.04825 | 0.02512 | 0.39508 | 0.14946 | 0.04198 | 0.22858 | 2.4713 | 0.03665 | 0.5765 | 0.16364 | 0.04198 | 0.22858 | 2.4713 | 0.04497 | 0.85088 | 3.76516 | 3.1399 | 0.00954 | 0.00135 | 0.00025 |
| Santa Clara | 2025 | LHDT2 | Aggregate | Aggregate | Diesel | 4837.24 | 188645 | 188645 | 0 | 60846.3 | 1.13929 | 1.80266 | 0 | 0.0303 | 0.027 | 0 | 0.003 | 0.03185 | 0.03167 | 0.02823 | 0 | 0.012 | 0.091 | 750.357 | 207.24 | 0 | 0.00704 | 0.0051 | 0 | 0.11822 | 0.03265 | 0 | 0.15162 | 0.10976 | 0 | 0 | 0 | 0 | 0.17261 | 0.12495 | 0 | 0 | 0 | 0 | 0.1885 | 0.3879 | 0.90975 | 0 | 0.00711 | 0.00196 | 0 |
| Santa Clara | 2025 | LHDT2 | Aggregate | Aggregate | Electricity | 50.462 | 3193.25 | 0 | 3193.25 | 669.175 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.01593 | 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 | 2025 | MCY | Aggregate | Aggregate | Gasoline | 28484.9 | 166415 | 166415 | 0 | 56969.8 | 0.55788 | 0 | 0.12915 | 0.0018 | 0 | 0.00325 | 0.001 | 0.0042 | 0.00192 | 0 | 0.00346 | 0.004 | 0.012 | 187.268 | 0 | 47.3078 | 0.15829 | 0 | 0.1772 | 0.03898 | 0 | 0.00769 | 1.02468 | 0 | 1.30516 | 3.55865 | 3.76008 | 3.86089 | 1.23654 | 0 | 1.4191 | 3.55865 | 3.76008 | 3.86089 | 0.00885 | 12.312 | 0 | 7.96544 | 0.00185 | 0 | 0.00047 |
| Santa Clara | 2025 | MDV | Aggregate | Aggregate | Gasoline | 159532 | 5551044 | 5551044 | 0 | 739781 | 0.08791 | 0 | 0.39189 | 0.00118 | 0 | 0.00196 | 0.002 | 0.00318 | 0.00128 | 0 | 0.00213 | 0.008 | 0.00909 | 402.764 | 0 | 103.438 | 0.00343 | 0 | 0.09414 | 0.00692 | 0 | 0.03907 | 0.01417 | 0 | 0.46364 | 0.09251 | 0.26509 | 1.62041 | 0.02067 | 0 | 0.50763 | 0.09251 | 0.26509 | 1.62041 | 0.03688 | 0.89592 | 0 | 3.75362 | 0.00398 | 0 | 0.00102 |
| Santa Clara | 2025 | MDV | Aggregate | Aggregate | Diesel | 2421.36 | 85326.8 | 85326.8 | 0 | 11351.1 | 0.04495 | 0 | 0 | 0.00469 | 0 | 0 | 0.002 | 0.00323 | 0.0049 | 0 | 0 | 0.008 | 0.00922 | 399.495 | 0 | 0 | 0.00049 | 0 | 0 | 0.06294 | 0 | 0 | 0.01059 | 0 | 0 | 0 | 0 | 0 | 0.01206 | 0 | 0 | 0 | 0 | 0.0031 | 0.19994 | 0 | 0 | 0.00379 | 0 | 0 |
| Santa Clara | 2025 | MDV | Aggregate | Aggregate | Electricity | 2274.55 | 77935 | 0 | 77935 | 11571.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00153 | 0 | 0 | 0 | 0.008 | 0.00436 | 0 | 0 | 0 | 0 | 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 Hy | 1542.37 | 64484.4 | 29833.2 | 34651.2 | 6377.68 | 0.00304 | 0 | 0.11551 | 0.00051 | 0 | 0.00183 | 0.002 | 0.00139 | 0.00055 | 0 | 0.00199 | 0.008 | 0.00396 | 129.174 | 0 | 91.6411 | 0.00041 | 0 | 0.04182 | 0.00053 | 0 | 0.02018 | 0.00131 | 0 | 0.17328 | 0.02949 | 0.02533 | 0.3279 | 0.00192 | 0 | 0.18973 | 0.02949 | 0.02533 | 0.3279 | 0.01943 | 0.19997 | 0 | 1.33989 | 0.00128 | 0 | 0.00091 |
| Santa Clara | 2025 | MH | Aggregate | Aggregate | Gasoline | 2337.88 | 21506.2 | 21506.2 | 0 | 233.881 | 0.37652 | 0 | 0.4259 | 0.00161 | 0 | 0.00039 | 0.003 | 0.01576 | 0.00175 | 0 | 0.00042 | 0.012 | 0.04502 | 1947.06 | 0 | 31.4529 | 0.01372 | 0 | 0.03694 | 0.02386 | 0 | 0.0453 | 0.05946 | 0 | 0.15428 | 11.3855 | 0.26883 | 4.35721 | 0.08676 | 0 | 0.16891 | 11.3855 | 0.26883 | 4.35721 | 0.04488 | 1.42692 | 0 | 3.38293 | 0.01925 | 0 | 0.00031 |
| Santa Clara | 2025 | MH | Aggregate | Aggregate | Diesel | 994.544 | 9603.89 | 9603.89 | 0 | 99.4544 | 3.97637 | 0 | 0 | 0.02861 | 0 | 0 | 0.004 | 0.01567 | 0.02899 | 0 | 0 | 0.016 | 0.04479 | 1082.4 | 0 | 0 | 0.00542 | 0 | 0 | 0.17053 | 0 | 0 | 0.1167 | 0 | 0 | 0 | 0 | 0 | 0.13286 | 0 | 0 | 0 | 0 | 0.16063 | 0.38512 | 0 | 0 | 0.01026 | 0 | 0 |
| Santa Clara | 2025 | MHDT | Aggregate | Aggregate | Gasoline | 1412.26 | 72039.9 | 72039.9 | 0 | 28256.5 | 0.3948 | 0.08618 | 0.42433 | 0.00135 | 0 | 0.00051 | 0.003 | 0.01576 | 0.00147 | 0 | 0.00056 | 0.012 | 0.04502 | 1746.96 | 526.723 | 45.3762 | 0.01258 | 0.26108 | 0.04598 | 0.01999 | 0.00722 | 0.0324 | 0.06195 | 1.01513 | 0.25315 | 0.03099 | 0.25047 | 2.55801 | 0.0904 | 1.48127 | 0.27717 | 0.03099 | 0.25047 | 2.55801 | 0.04499 | 1.27609 | 15.1444 | 5.53163 | 0.01727 | 0.00521 | 0.00045 |
| Santa Clara | 2025 | MHDT | Aggregate | Aggregate | Diesel | 10548.1 | 435101 | 435101 | 0 | 125915 | 1.12815 | 12.4897 | 1.64656 | 0.01246 | 0.02479 | 0 | 0.003 | 0.01594 | 0.01302 | 0.02591 | 0 | 0.012 | 0.04555 | 1141.33 | 2229.37 | 0 | 0.00131 | 0.01096 | 0 | 0.17982 | 0.35124 | 0 | 0.0282 | 0.2359 | 0 | 0 | 0 | 0 | 0.0321 | 0.26855 | 0 | 0 | 0 | 0 | 0.21189 | 0.10965 | 7.53539 | 0 | 0.01081 | 0.02111 | 0 |
| Santa Clara | 2025 | MHDT | Aggregate | Aggregate | Electricity | 90.8085 | 4838.91 | 0 | 4838.91 | 1182.34 | 0 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.00795 | 0 | 0 | 0 | 0.012 | 0.02272 | 0 | 0 | 0 | 0 | 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 | 98.9063 | 4590.31 | 4590.31 | 0 | 911.921 | 0.12435 | 6.45266 | 0 | 0.00123 | 0.01859 | 0 | 0.003 | 0.01601 | 0.00133 | 0.02022 | 0 | 0.012 | 0.04574 | 979.014 | 5290.55 | 0 | 0.75144 | 16.9726 | 0 | 0.19958 | 1.07851 | 0 | 0.01074 | 0.2425 | 0 | 0 | 0 | 0 | 0.7669 | 17.3217 | 0 | 0 | 0 | 0 | 1.06 | 2.99617 | 35.8077 | 0 | 0 | 0 | 0 |
| Santa Clara | 2025 | OBUS | Aggregate | Aggregate | Gasoline | 430.702 | 18962.5 | 18962.5 | 0 | 8617.49 | 0.46035 | 0.06398 | 0.40505 | 0.00094 | 0 | 0.00026 | 0.003 | 0.01568 | 0.00102 | 0 | 0.00028 | 0.012 | 0.0448 | 1744.29 | 377.023 | 31.3702 | 0.01264 | 0.19576 | 0.03558 | 0.02242 | 0.00522 | 0.03081 | 0.0615 | 0.74652 | 0.18857 | 0.03383 | 0.15843 | 2.88114 | 0.08975 | 1.08932 | 0.20646 | 0.03383 | 0.15843 | 2.88114 | 0.04498 | 1.35278 | 5.77607 | 3.95389 | 0.01724 | 0.00373 | 0.00031 |
| Santa Clara | 2025 | OBUS | Aggregate | Aggregate | Diesel | 921.412 | 62304.9 | 62304.9 | 0 | 9451.53 | 1.13325 | 7.15167 | 1.53262 | 0.01892 | 0.0076 | 0 | 0.003 | 0.01802 | 0.01977 | 0.00794 | 0 | 0.012 | 0.05148 | 1259.13 | 1532.11 | 0 | 0.00184 | 0.02068 | 0 | 0.19838 | 0.24138 | 0 | 0.03971 | 0.44533 | 0 | 0 | 0 | 0 | 0.04521 | 0.50698 | 0 | 0 | 0 | 0 | 0.21621 | 0.14449 | 7.58733 | 0 | 0.01192 | 0.01451 | 0 |
| Santa Clara | 2025 | OBUS | Aggregate | Aggregate | Electricity | 2.67203 | 221.771 | 0 | 221.771 | 53.462 | 0 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.00784 | 0 | 0 | 0 | 0.012 | 0.0224 | 0 | 0 | 0 | 0 | 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 | 8.12531 | 537.747 | 537.747 | 0 | 72.3152 | 0.16482 | 1.52662 | 0 | 0.00118 | 0.00416 | 0 | 0.003 | 0.01615 | 0.00129 | 0.00452 | 0 | 0.012 | 0.04614 | 987.912 | 1189.83 | 0 | 0.8039 | 4.10366 | 0 | 0.20139 | 0.24255 | 0 | 0.01149 | 0.05863 | 0 | 0 | 0 | 0 | 0.82044 | 4.18808 | 0 | 0 | 0 | 0 | 1.06 | 3.29233 | 7.93342 | 0 | 0 | 0 | 0 |
| Santa Clara | 2025 | SBUS | Aggregate | Aggregate | Gasoline | 178.244 | 8812.85 | 8812.85 | 0 | 712.974 | 0.48726 | 0.90556 | 0.72299 | 0.00087 | 0 | 0.00057 | 0.002 | 0.01572 | 0.00094 | 0 | 0.00062 | 0.008 | 0.04492 | 806.346 | 2576.86 | 57.6715 | 0.01052 | 2.46593 | 0.07473 | 0.02644 | 0.08443 | 0.06643 | 0.05105 | 10.636 | 0.42511 | 0.11863 | 0.29221 | 1.79779 | 0.07449 | 15.5201 | 0.46544 | 0.11863 | 0.29221 | 1.79779 | 0.045 | 1.30893 | 82.2075 | 10.2051 | 0.00797 | 0.02547 | 0.00057 |
| Santa Clara | 2025 | SBUS | Aggregate | Aggregate | Diesel | 673.205 | 15283.8 | 15283.8 | 0 | 9748.01 | 3.61424 | 21.2565 | 0.49631 | 0.01868 | 0.01823 | 0 | 0.003 | 0.01572 | 0.01952 | 0.01906 | 0 | 0.012 | 0.04492 | 1139.83 | 2219.62 | 0 | 0.00258 | 0.00794 | 0 | 0.17958 | 0.3497 | 0 | 0.0556 | 0.17086 | 0 | 0 | 0 | 0 | 0.6633 | 0.19451 | 0 | 0 | 0 | 0 | 0.15189 | 0.17348 | 4.77729 | 0 | 0.01079 | 0.02102 | 0 |
| Santa Clara | 2025 | SBUS | Aggregate | Aggregate | Electricity | 4.48117 | 145.076 | 0 | 145.076 | 51.2477 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00256 | 0.00786 | 0 | 0 | 0 | 0.01023 | 0.02246 | 0 | 0 | 0 | 0 | 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 | 25.2844 | 627.586 | 627.586 | 0 | 366.118 | 0.5494 | 5.26 | 0 | 0.00338 | 0.01162 | 0 | 0.003 | 0.01572 | 0.00367 | 0.01263 | 0 | 0.012 | 0.04492 | 1252.12 | 4074.05 | 0 | 3.38621 | 15.1221 | 0 | 0.25525 | 0.83052 | 0 | 0.04838 | 0.21607 | 0 | 0 | 0 | 0 | 3.45587 | 15.4333 | 0 | 0 | 0 | 0 | 1.06 | 11.4115 | 21.3328 | 0 | 0 | 0 | 0 |
| Santa Clara | 2025 | UBUS | Aggregate | Aggregate | Gasoline | 46.2192 | 4826.66 | 4826.66 | 0 | 184.877 | 0.02728 | 0 | 0.44989 | 0.00114 | 0 | 0.00013 | 0.002 | 0.03185 | 0.00124 | 0 | 0.00014 | 0.008 | 0.091 | 925.868 | 0 | 36.6428 | 0.00199 | 0 | 0.04305 | 0.00426 | 0 | 0.07084 | 0.00551 | 0 | 0.1527 | 0.04366 | 0.09211 | 0.47151 | 0.00805 | 0 | 0.16719 | 0.04366 | 0.09211 | 0.47151 | 0.045 | 0.58614 | 0 | 5.94231 | 0.00915 | 0 | 0.00036 |
| Santa Clara | 2025 | UBUS | Aggregate | Aggregate | Diesel | 405.367 | 44987.4 | 44987.4 | 0 | 1621.47 | 0.38297 | 0 | 0 | 0.00696 | 0 | 0 | 0.00824 | 0.0385 | 0.00728 | 0 | 0 | 0.03295 | 0.11 | 1121.88 | 0 | 0 | 0.00319 | 0 | 0 | 0.17675 | 0 | 0 | 0.06875 | 0 | 0 | 0 | 0 | 0 | 0.07827 | 0 | 0 | 0 | 0 | 0.22 | 0.0787 | 0 | 0 | 0.01063 | 0 | 0 |
| Santa Clara | 2025 | UBUS | Aggregate | Aggregate | Electricity | 23.312 | 2427.54 | 0 | 2427.54 | 93.2481 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00898 | 0.01925 | 0 | 0 | 0 | 0.03591 | 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 | 2025 | UBUS | Aggregate | Aggregate | Natural Ga | 58.1625 | 6762.42 | 6762.42 | 0 | 232.65 | 0.06051 | 0 | 0 | 0.00029 | 0 | 0 | 0.00841 | 0.0385 | 0.0003 | 0 | 0 | 0.03363 | 0.11 | 1317.88 | 0 | 0 | 4.3204 | 0 | 0 | 0.26866 | 0 | 0 | 0.06173 | 0 | 0 | 0 | 0 | 0 | 4.40928 | 0 | 0 | 0 | 0 | 0.97 | 50.3461 | 0 | 0 | 0 | 0 | 0 |

Source: EMFAC2021 (v1.0.2) 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, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

| Region | Calendar Y | Vehicle Ca | Model Yea | Speed | Fuel | Population | Total VMT | CVMT | EVMT | Trips | NOx RUN | NOx IDLEI | NOx STRE | PM2.5 RU | PM2.5 TI | PM2.5 IDL | PM2.5 STI | PM2.5 PM | PM2.5 PM | PM10 RU | PM10 IDL | PM10 STR | PM10 PM | PM10 PM | PM10 PM | CO2 RUN | CO2 IDLE | CO2 STRE | CH4 RUN | CH4 IDLE | CH4 STRE | N2O RUN | N2O IDLE | N2O STRE | ROG RUN | ROG IDLE | ROG STRE | ROG HOT | ROG RUN | ROG DIUR | TOG RUN | TOG IDLE | TOG STRE | TOG HOT | TOG RUN | TOG DIUR | NH3 RUN | CO RUNEI | CO_IDLEX | CO_STREX | SOx RUNE | SOx IDLEX | SOx_STREX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Santa Clara | 2026 | HHDT | Aggregate | Aggregate | Gasoline | 1.89021 | 133.755 | 133.755 | 0 | 37.8193 | 3.91283 | 0 | 0.83397 | 0.00242 | 0 | 0.00112 | 0.005 | 0.0327 | 0.00263 | 0 | 0.00122 | 0.02 | 0.09343 | 2030.34 | 0 | 50.0057 | 0.15168 | 0 | 0.00028 | 0.1386 | 0 | 0.02973 | 0.84116 | 0 | 0.0015 | 0.12426 | 1.11904 | 7.83988 | 1.22743 | 0 | 0.00165 | 0.12426 | 1.11904 | 7.83988 | 0.04427 | 33.2127 | 0 | 2.72701 | 0.02007 | 0 | 0.00049 |
| Santa Clara | 2026 | HHDT | Aggregate | Aggregate | Diesel | 8867.79 | 1016012 | 1016012 | 0 | 130549 | 1.76111 | 59.4368 | 2.95547 | 0.0252 | 0.02777 | 0 | 0.00877 | 0.02751 | 0.02633 | 0.02902 | 0 | 0.0351 | 0.07861 | 1583.15 | 11526.4 | 0 | 0.00072 | 0.23528 | 0 | 0.24943 | 1.81599 | 0 | 0.0156 | 5.06551 | 0 | 0 | 0 | 0 | 0.01776 | 5.7667 | 0 | 0 | 0 | 0.21591 | 0.07407 | 73.9419 | 0 | 0.01499 | 0.10915 | 0 | 0 |
| Santa Clara | 2026 | HHDT | Aggregate | Aggregate | Electricity | 110.53 | 11535.6 | 0 | 11535.6 | 1443.08 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00856 | 0.01473 | 0 | 0 | 0 | 0.03423 | 0.04208 | 0 | 0 | 0 | 0 | 0 | 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 | 863.461 | 56635.4 | 56635.4 | 0 | 7769.71 | 0.97637 | 12.7707 | 0 | 0.00164 | 0.0256 | 0 | 0.009 | 0.04919 | 0.00179 | 0.02785 | 0 | 0.0336 | 0.14055 | 1365.07 | 10446.9 | 0 | 2.128 | 33.9006 | 0 | 0.27828 | 2.12966 | 0 | 0.04395 | 0.50824 | 0 | 0 | 0 | 0 | 2.18721 | 34.6252 | 0 | 0 | 0 | 0.83503 | 12.6284 | 75.0202 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2026 | LDA | Aggregate | Aggregate | Gasoline | 598870 | 2.2E+07 | 2.2E+07 | 0 | 2780456 | 0.03497 | 0 | 0.23463 | 0.0011 | 0 | 0.00183 | 0.002 | 0.00265 | 0.0012 | 0 | 0.00199 | 0.008 | 0.00759 | 264.473 | 0 | 66.9016 | 0.00193 | 0 | 0.06395 | 0.0042 | 0 | 0.03143 | 0.00714 | 0 | 0.28591 | 0.08316 | 0.21757 | 1.33828 | 0.03647 | 0.65931 | 0 | 2.88414 | 0.00261 | 0 | 0.00066 |
| Santa Clara | 2026 | LDA | Aggregate | Aggregate | Diesel | 1478.94 | 42434.3 | 42434.3 | 0 | 6277.4 | 0.16329 | 0 | 0 | 0.0134 | 0 | 0 | 0.002 | 0.00272 | 0.014 | 0 | 0 | 0.008 | 0.00776 | 227.11 | 0 | 0 | 0.00108 | 0 | 0 | 0.03578 | 0 | 0 | 0.02324 | 0 | 0 | 0 | 0 | 0 | 0.02646 | 0 | 0 | 0 | 0.0031 | 0.30744 | 0 | 0 | 0.00215 | 0 | 0 |
| Santa Clara | 2026 | LDA | Aggregate | Aggregate | Electricity | 64495.2 | 2739705 | 0 | 2739705 | 312996 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00153 | 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 | 0 |
| Santa Clara | 2026 | LDA | Aggregate | Aggregate | Plug-in Hy | 20380.4 | 866414 | 412497 | 453917 | 84273.1 | 0.00312 | 0 | 0.11551 | 0.00054 | 0 | 0.0019 | 0.002 | 0.00139 | 0.00059 | 0 | 0.00207 | 0.008 | 0.00396 | 132.886 | 0 | 63.2125 | 0.00042 | 0 | 0.04204 | 0.00055 | 0 | 0.02039 | 0.00135 | 0 | 0.17328 | 0.04039 | 0.03746 | 0.4362 | 0.01902 | 0.20556 | 0 | 1.33989 | 0.00131 | 0 | 0.00062 |
| Santa Clara | 2026 | LDT1 | Aggregate | Aggregate | Gasoline | 50750.5 | 1625960 | 1625960 | 0 | 225982 | 0.104 | 0 | 0.34004 | 0.00155 | 0 | 0.00242 | 0.002 | 0.00324 | 0.00168 | 0 | 0.00263 | 0.008 | 0.00926 | 315.793 | 0 | 82.5777 | 0.00506 | 0 | 0.09224 | 0.00804 | 0 | 0.03641 | 0.02205 | 0 | 0.46164 | 0.14873 | 0.41724 | 2.3773 | 0.03218 | 0.50544 | 0.14873 | 0.41724 | 2.3773 | 0.03683 | 1.21935 | 0 | 4.54917 | 0.00312 | 0 | 0.00082 |
| Santa Clara | 2026 | LDT1 | Aggregate | Aggregate | Diesel | 18.4777 | 256.559 | 256.559 | 0 | 50.46 | 1.62601 | 0 | 0 | 0.23579 | 0 | 0 | 0.002 | 0.00371 | 0.24645 | 0 | 0 | 0.008 | 0.01061 | 413.989 | 0 | 0 | 0.01366 | 0 | 0 | 0.06522 | 0 | 0 | 0.29399 | 0 | 0 | 0 | 0 | 0 | 0.33469 | 0 | 0 | 0 | 0.0031 | 1.58027 | 0 | 0 | 0.00392 | 0 | 0 |
| Santa Clara | 2026 | LDT1 | Aggregate | Aggregate | Electricity | 263.582 | 10628.9 | 0 | 10628.9 | 1254.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00154 | 0 | 0 | 0 | 0.008 | 0.00439 | 0 | 0 | 0 | 0 | 0 | 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 Hy | 130.682 | 5898.08 | 2516.05 | 3382.03 | 540.37 | 0.0028 | 0 | 0.11551 | 0.00033 | 0 | 0.00131 | 0.002 | 0.0014 | 0.00036 | 0 | 0.00143 | 0.008 | 0.00399 | 119.145 | 0 | 66.7027 | 0.00038 | 0 | 0.04179 | 0.00049 | 0 | 0.02016 | 0.00121 | 0 | 0.17328 | 0.02342 | 0.02004 | 0.27517 | 0.00177 | 0 | 0.18973 | 0.02342 | 0.02004 | 0.27517 | 0.01792 | 0.18457 | 0 | 1.33989 | 0.00118 | 0 | 0.00066 |
| Santa Clara | 2026 | LDT2 | Aggregate | Aggregate | Gasoline | 296179 | 1.1E+07 | 1.1E+07 | 0 | 1383934 | 0.0572 | 0 | 0.29779 | 0.00115 | 0 | 0.00187 | 0.002 | 0.00313 | 0.00125 | 0 | 0.00203 | 0.008 | 0.00895 | 324.592 | 0 | 82.9797 | 0.00245 | 0 | 0.07444 | 0.00529 | 0 | 0.03503 | 0.00939 | 0 | 0.33846 | 0.07676 | 0.21288 | 1.33036 | 0.03778 | 0.75727 | 0 | 3.29957 | 0.00321 | 0 | 0.00082 |
| Santa Clara | 2026 | LDT2 | Aggregate | Aggregate | Diesel | 1079.59 | 39200.1 | 39200.1 | 0 | 5104.36 | 0.03711 | 0 | 0 | 0.0046 | 0 | 0 | 0.002 | 0.00313 | 0.00481 | 0 | 0 | 0.008 | 0.00894 | 295.019 | 0 | 0 | 0.00059 | 0 | 0 | 0.04648 | 0 | 0 | 0.01281 | 0 | 0 | 0 | 0 | 0 | 0.01458 | 0 | 0 | 0 | 0.0031 | 0.12935 | 0 | 0 | 0.0028 | 0 | 0 |
| Santa Clara | 2026 | LDT2 | Aggregate | Aggregate | Electricity | 2705.08 | 90693.2 | 0 | 90693.2 | 13682.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00153 | 0 | 0 | 0 | 0.008 | 0.00436 | 0 | 0 | 0 | 0 | 0 | 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 Hy | 2986.35 | 127896 | 57308.3 | 70588 | 12348.6 | 0.00294 | 0 | 0.11551 | 0.00041 | 0 | 0.00154 | 0.002 | 0.00139 | 0.00045 | 0 | 0.00168 | 0.008 | 0.00398 | 125.113 | 0 | 73.0195 | 0.00039 | 0 | 0.04178 | 0.00051 | 0 | 0.02014 | 0.00127 | 0 | 0.17328 | 0.0257 | 0.02331 | 0.30414 | 0.00186 | 0 | 0.18973 | 0.0257 | 0.02331 | 0.30414 | 0.0188 | 0.19369 | 0 | 1.33989 | 0.00124 | 0 | 0.00072 |
| Santa Clara | 2026 | LHDT1 | Aggregate | Aggregate | Gasoline | 19567.3 | 734253 | 734253 | 0 | 291524 | 0.13483 | 0.03408 | 0.59226 | 0.00144 | 0 | 0.00026 | 0.002 | 0.0273 | 0.00157 | 0 | 0.00028 | 0.008 | 0.078 | 841.552 | 116.933 | 25.6118 | 0.00645 | 0.10778 | 0.03031 | 0.00767 | 0.0029 | 0.04884 | 0.03157 | 0.39061 | 0.14863 | 0.04243 | 0.24424 | 2.56863 | 0.04607 | 0.56997 | 0.16273 | 0.04243 | 0.24424 | 2.56863 | 0.04495 | 1.00032 | 3.76104 | 3.19484 | 0.00832 | 0.00116 | 0.00025 |
| Santa Clara | 2026 | LHDT1 | Aggregate | Aggregate | Diesel | 10635.3 | 416619 | 416619 | 0 | 133779 | 1.21928 | 1.73248 | 0 | 0.03002 | 0.0266 | 0 | 0.003 | 0.0273 | 0.03138 | 0.02781 | 0 | 0.012 | 0.078 | 625.228 | 128.066 | 0 | 0.00699 | 0.0051 | 0 | 0.0985 | 0.02018 | 0 | 0.15058 | 0.10976 | 0 | 0 | 0 | 0 | 0.17142 | 0.12495 | 0 | 0 | 0 | 0.18438 | 0.40172 | 0.90975 | 0 | 0.00592 | 0.00121 | 0 | 0 |
| Santa Clara | 2026 | LHDT1 | Aggregate | Aggregate | Electricity | 378.059 | 23974.6 | 0 | 23974.6 | 5290.74 | 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 | 2513.65 | 91174 | 91174 | 0 | 37449.7 | 0.12719 | 0.03336 | 0.58152 | 0.0013 | 0 | 0.0002 | 0.002 | 0.03185 | 0.00141 | 0 | 0.00022 | 0.008 | 0.091 | 950.68 | 135.358 | 25.117 | 0.00457 | 0.10562 | 0.02931 | 0.00782 | 0.0033 | 0.04721 | 0.02041 | 0.38264 | 0.14234 | 0.0398 | 0.22142 | 2.40155 | 0.02979 | 0.55834 | 0.15584 | 0.0398 | 0.22142 | 2.40155 | 0.04499 | 0.78196 | 3.76809 | 3.1478 | 0.0094 | 0.00134 | 0.00025 |
| Santa Clara | 2026 | LHDT2 | Aggregate | Aggregate | Diesel | 4995.26 | 193101 | 193101 | 0 | 62834.1 | 1.03007 | 1.71794 | 0 | 0.02877 | 0.02701 | 0 | 0.003 | 0.03185 | 0.03007 | 0.02824 | 0 | 0.012 | 0.091 | 744.684 | 205.113 | 0 | 0.00672 | 0.0051 | 0 | 0.11733 | 0.03232 | 0 | 0.14468 | 0.10976 | 0 | 0 | 0 | 0 | 0.16471 | 0.12495 | 0 | 0 | 0 | 0.19232 | 0.36731 | 0.90975 | 0 | 0.00706 | 0.00194 | 0 | 0 |
| Santa Clara | 2026 | LHDT2 | Aggregate | Aggregate | Electricity | 96.3837 | 5822.06 | 0 | 5822.06 | 1278.56 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.01593 | 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 | 167092 | 167092 | 0 | 57594.1 | 0.54585 | 0 | 0.12318 | 0.00182 | 0 | 0.00326 | 0.001 | 0.0042 | 0.00194 | 0 | 0.00347 | 0.004 | 0.012 | 186.845 | 0 | 46.3065 | 0.15445 | 0 | 0.17275 | 0.03847 | 0 | 0.00738 | 0.99118 | 0 | 1.26753 | 3.55854 | 3.76969 | 3.85423 | 1.20042 | 0 | 1.37833 | 3.55854 | 3.76969 | 3.85423 | 0.00889 | 11.9933 | 0 | 7.93168 | 0.00185 | 0 | 0.00046 |
| Santa Clara | 2026 | MDV | Aggregate | Aggregate | Gasoline | 162558 | 5631323 | 5631323 | 0 | 753924 | 0.07725 | 0 | 0.36125 | 0.00113 | 0 | 0.00189 | 0.002 | 0.00318 | 0.00123 | 0 | 0.00205 | 0.008 | 0.00909 | 393.336 | 0 | 100.833 | 0.00308 | 0 | 0.0874 | 0.00635 | 0 | 0.0375 | 0.01254 | 0 | 0.42462 | 0.08798 | 0.25503 | 1.55991 | 0.0183 | 0 | 0.46491 | 0.08798 | 0.25503 | 1.55991 | 0.03752 | 0.83804 | 0 | 3.53169 | 0.00389 | 0 | 0.001 |
| Santa Clara | 2026 | MDV | Aggregate | Aggregate | Diesel | 2430.3 | 84111.5 | 84111.5 | 0 | 11337.2 | 0.0408 | 0 | 0 | 0.00438 | 0 | 0 | 0.002 | 0.00324 | 0.00458 | 0 | 0 | 0.008 | 0.00926 | 393.168 | 0 | 0 | 0.00047 | 0 | 0 | 0.06194 | 0 | 0 | 0.0101 | 0 | 0 | 0 | 0 | 0 | 0.0115 | 0 | 0 | 0 | 0.0031 | 0.19746 | 0 | 0 | 0.00373 | 0 | 0 |
| Santa Clara | 2026 | MDV | Aggregate | Aggregate | Electricity | 2850.96 | 95858.3 | 0 | 95858.3 | 14435.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00153 | 0 | 0 | 0 | 0.008 | 0.00436 | 0 | 0 | 0 | 0 | 0 | 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 Hy | 1813.35 | 74577.7 | 33714.3 | 40863.5 | 7498.21 | 0.00297 | 0 | 0.11551 | 0.00046 | 0 | 0.00171 | 0.002 | 0.00139 | 0.0005 | 0 | 0.00186 | 0.008 | 0.00398 | 126.216 | 0 | 89.8524 | 0.0004 | 0 | 0.04161 | 0.00051 | 0 | 0.01999 | 0.00128 | 0 | 0.17328 | 0.02991 | 0.027 | 0.33738 | 0.00187 | 0 | 0.18973 | 0.02991 | 0.027 | 0.33738 | 0.01899 | 0.19537 | 0 | 1.33989 | 0.00125 | 0 | 0.00089 |
| Santa Clara | 2026 | MH | Aggregate | Aggregate | Gasoline | 2263.19 | 21108.4 | 21108.4 | 0 | 226.409 | 0.3352 | 0 | 0.43213 | 0.00155 | 0 | 0.00037 | 0.003 | 0.01576 | 0.00168 | 0 | 0.00041 | 0.012 | 0.04502 | 1946.63 | 0 | 31.2681 | 0.01205 | 0 | 0.0364 | 0.02213 | 0 | 0.04652 | 0.05097 | 0 | 0.14985 | 10.6472 | 0.25461 | 4.13166 | 0.07438 | 0 | 0.16407 | 10.6472 | 0.25461 | 4.13166 | 0.04492 | 1.18199 | 0 | 3.2758 | 0.01924 | 0 | 0.00031 |
| Santa Clara | 2026 | MH | Aggregate | Aggregate | Diesel | 1010.77 | 9718.42 | 9718.42 | 0 | 101.077 | 3.84658 | 0 | 0 | 0.08072 | 0 | 0 | 0.004 | 0.01567 | 0.08437 | 0 | 0 | 0.016 | 0.04479 | 1082.85 | 0 | 0 | 0.00529 | 0 | 0 | 0.1706 | 0 | 0 | 0.11395 | 0 | 0 | 0 | 0 | 0 | 0.12972 | 0 | 0 | 0 | 0.16529 | 0.37366 | 0 | 0 | 0.01026 | 0 | 0 |
| Santa Clara | 2026 | MHDT | Aggregate | Aggregate | Gasoline | 1410.73 | 72468.6 | 72468.6 | 0 | 28225.8 | 0.33303 | 0.08357 | 0.40784 | 0.00134 | 0 | 0.0005 | 0.003 | 0.01576 | 0.00146 | 0 | 0.00054 | 0.012 | 0.04502 | 1727.18 | 521.812 | 44.5575 | 0.01063 | 0.26367 | 0.04458 | 0.0176 | 0.00713 | 0.03203 | 0.05163 | 1.01721 | 0.24232 | 0.02874 | 0.23655 | 2.40069 | 0.07534 | 1.48431 | 0.26531 | 0.02874 | 0.23655 | 2.40069 | 0.045 | 1.05014 | 15.1686 | 5.26279 | 0.01707 | 0.00516 | 0.00044 |
| Santa Clara | 2026 | MHDT | Aggregate | Aggregate | Diesel | 10675.1 | 435455 | 435455 | 0 | 127504 | 1.02886 | 11.8625 | 1.64414 | 0.0108 | 0.02038 | 0 | 0.003 | 0.01594 | 0.01128 | 0.0213 | 0 | 0.012 | 0.04555 | 1134.95 | 2210.33 | 0 | 0.00113 | 0.01042 | 0 | 0.17881 | 0.34824 | 0 | 0.02442 | 0.22431 | 0 | 0 | 0 | 0 | 0.0278 | 0.25536 | 0 | 0 | 0 | 0.21311 | 0.09956 | 7.52082 | 0 | 0.01075 | 0.02093 | 0 | 0 |
| Santa Clara | 2026 | MHDT | Aggregate | Aggregate | Electricity | 167.584 | 8816.66 | 0 | 8816.66 | 2173.17 | 0 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.00795 | 0 | 0 | 0 | 0.012 | 0.02272 | 0 | 0 | 0 | 0 | 0 | 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 | 107.631 | 4901.77 | 4901.77 | 0 | 1001.68 | 0.11647 | 6.40703 | 0 | 0.00127 | 0.01898 | 0 | 0.003 | 0.01601 | 0.00138 | 0.02064 | 0 | 0.012 | 0.04574 | 973.703 | 5277.96 | 0 | 0.7557 | 16.6656 | 0 | 0.1985 | 1.07595 | 0 | 0.0108 | 0.23812 | 0 | 0 | 0 | 0 | 0.77125 | 17.0085 | 0 | 0 | 0 | 1.06 | 2.99527 | 36.6958 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2026 | OBUS | Aggregate | Aggregate | Gasoline | 419.2 | 18162.1 | 18162.1 | 0 | 8387.35 | 0.41818 | 0.0626 | 0.39916 | 0.00097 | 0 | 0.00026 | 0.003 | 0.01568 | 0.00105 | 0 | 0.00028 | 0.012 | 0.0448 | 1724.91 | 374.624 | 31.0878 | 0.01143 | 0.19582 | 0.03518 | 0.02073 | 0.00511 | 0.03045 | 0.05533 | 0.74675 | 0.18644 | 0.03519 | 0.17734 | 3.20003 | 0.08074 | 1.08966 | 0.20412 | 0.03519 | 0.17734 | 3.20003 | 0.04499 | 1.21587 | 5.77745 | 3.88201 | 0.01705 | 0.0037 | 0.00031 |
| Santa Clara | 2026 | OBUS | Aggregate | Aggregate | Diesel | 949.045 | 62674.5 | 62674.5 | 0 | 9750.02 | 1.09235 | 6.91223 | 1.51848 | 0.01817 | 0.00715 | 0 | 0.003 | 0.01805 | 0.01899 | 0.00747 | 0 | 0.012 | 0.05157 | 1245.04 | 1523.79 | 0 | 0.00177 | 0.02083 | 0 | 0.19616 | 0.24007 | 0 | 0.03801 | 0.44839 | 0 | 0 | 0 | 0 | 0.04327 | 0.51045 | 0 | 0 | 0 | 0.21638 | 0.13949 | 7.64927 | 0 | 0.01179 | 0.01443 | 0 | 0 |
| Santa Clara | 2026 | OBUS | Aggregate | Aggregate | Electricity | 4.48416 | 364.788 | 0 | 364.788 | 89.7191 | 0 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.00784 | 0 | 0 | 0 | 0.012 | 0.0224 | 0 | 0 | 0 | 0 | 0 | 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 | 9.10124 | 599.979 | 599.979 | 0 | 81.0011 | 0.14535 | 1.51834 | 0 | 0.00128 | 0.00435 | 0 | 0.003 | 0.01615 | 0.00139 | 0.00474 | 0 | 0.012 | 0.04614 | 975 | 1187.91 | 0 | 0.81456 | 4.00144 | 0 | 0.19876 | 0.24216 | 0 | 0.01164 | 0.05717 | 0 | 0 | 0 | 0 | 0.83132 | 4.08376 | 0 | 0 | 0 | 1.06 | 3.32104 | 8.37867 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2026 | SBUS | Aggregate | Aggregate | Gasoline | 183.793 | 9054.55 | 9054.55 | 0 | 735.173 | 0.47417 | 0.88758 | 0.73371 | 0.00087 | 0 | 0.00058 | 0.002 | 0.01572 | 0.00095 | 0 | 0.00063 | 0.008 | 0.04492 | 802.435 | 2565.53 | 57.275 | 0.01005 | 2.4667 | 0.07454 | 0.02592 | 0.08266 | 0.06721 | 0.04872 | 10.6372 | 0.42357 | 0.1241 | 0.32264 | 1.96833 | 0.07109 | 15.5218 | 0.46376 | 0.1241 | 0.32264 | 1.96833 | 0.045 | 1.24681 | 82.2146 | 10.0779 | 0.00793 | 0.02536 | 0.00057 |
| Santa Clara | 2026 | SBUS | Aggregate | Aggregate | Diesel | 674.998 | 15210.9 | 15210.9 | 0 | 9773.97 | 3.40607 | 20.5817 | 0.50934 | 0.01772 | 0.01684 | 0 | 0.003 | 0.01572 | 0.01852 | 0.0176 | 0 | 0.012 | 0.04492 | 1135.54 | 2209.66 | 0 | 0.0025 | 0.00789 | 0 | 0.1789 | 0.34813 | 0 | 0.05378 | 0.16983 | 0 | 0 | 0 | 0 | 0.06123 | 0.19334 | 0 | 0 | 0 | 0.15577 | 0.16926 | 4.88086 | 0 | 0.01075 | 0.02092 | 0 | 0 |
| Santa Clara | 2026 | SBUS | Aggregate | Aggregate | Electricity | 7.58722 | 244.239 | 0 | 244.239 | 87.3944 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00257 | 0.00786 | 0 | 0 | 0 | 0.01027 | 0.02246 | 0 | 0 | 0 | 0 | 0 | 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 | 26.1647 | 642.552 | 642.552 | 0 | 378.865 | 0.53206 | 5.2499 | 0 | 0.00338 | 0.01186 | 0 | 0.003 | 0.01572 | 0.00367 | 0.0129 | 0 | 0.012 | 0.04492 | 1243.42 | 4080.83 | 0 | 3.33847 | 14.9974 | 0 | 0.25348 | 0.8319 | 0 | 0.0477 | 0.21428 | 0 | 0 | 0 | 0 | 3.40715 | 15.3059 | 0 | 0 | 0 | 1.06 | 11.1869 | 21.8762 | 0 | 0 | 0 | 0 | 0 |
| Santa Clara | 2026 | UBUS | Aggregate | Aggregate | Gasoline | 46.3552 | 4840.86 | 4840.86 | 0 | 185.421 | 0.0269 | 0 | 0.43974 | 0.00114 | 0 | 0.00013 | 0.002 | 0.03185 | 0.00124 | 0 | 0.00014 | 0.008 | 0.091 | 925.652 | 0 | 36.3095 | 0.00194 | 0 | 0.04281 | 0.00421 | 0 | 0.0696 | 0.00537 | 0 | 0.15151 | 0.0436 | 0.09211 | 0.47112 | 0.045 | 0.59035 | 0 | 5.73821 | 0.00915 | 0 | 0.00036 |
| Santa Clara | 2026 | UBUS | Aggregate | Aggregate | Diesel | 396.77 | 44084 | 44084 | 0 | 1587.08 | 0.38207 | 0 | 0 | 0.00695 | 0 | 0 | 0.00822 | 0.0385 | 0.00726 | 0 | 0 | 0.03288 | 0.11 | 1110.34 | 0 | 0 | 0.00319 | 0 | 0 | 0.17493 | 0 | 0 | 0.06863 | 0 | 0 | 0 | 0 | 0 | 0.07812 | 0 | 0 | 0 | 0.22 | 0.07852 | 0 | 0 | 0.01052 | 0 | 0 |
| Santa Clara | 2026 | UBUS | Aggregate | Aggregate | Electricity | 28.6596 | 2995.56 | 0 | 2995.56 | 114.638 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00897 | 0.01925 | 0 | 0 | 0 | 0.03589 | 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 | 62.8453 | 7257.19 | 7257.19 | 0 | 251.381 | 0.06079 | 0 | 0 | 0.00029 | 0 | 0 | 0.00845 | 0.0385 | 0.0003 | 0 | 0 | 0.03378 | 0.11 | 1320.94 | 0 | 0 | 4.33258 | 0 | 0 | 0.26928 | 0 | 0 | 0.0619 | 0 | 0 | 0 | 0 | 0 | 4.42171 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Source: EMFAC2021 (v1.0.2) 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, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

| Region | Calendar Y | Vehicle Ca | Model Yea | Speed | Fuel | Population | Total VMT | CVMT | EVMT | Trips | NOx RUN | NOx IDLEI | NOx STRE | PM2.5 RU | PM2.5 IDL | PM2.5 STI | PM2.5 PM | PM2.5 PM | PM10 RU | PM10 IDL | PM10 STR | PM10 PM | PM10 PM | CO2 RUN | CO2 IDLE | CO2 STRE | CH4 RUN | CH4 IDLE | CH4 STRE | N2O RUN | N2O IDLE | N2O STRE | ROG RUN | ROG IDLE | ROG STRE | ROG HOT | ROG RUN | ROG DIUR | TOG RUN | TOG IDLE | TOG STRE | TOG HOT | TOG RUN | TOG DIUR | NH3 RUN | CO RUNEI | CO_IDLEX | CO_STREX | SOx RUNE | SOx IDLEX | SOx_STREX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Santa Clara | 2027 | HHDT | Aggregate | Aggregate | Gasoline | 1.83311 | 147.038 | 147.038 | 0 | 36.6768 | 3.73004 | 0 | 0.7735 | 0.0022 | 0 | 0.00103 | 0.005 | 0.03269 | 0.00239 | 0 | 0.00112 | 0.02 | 0.0934 | 2000.5 | 0 | 49.6693 | 0.13564 | 0 | 0.00027 | 0.13627 | 0 | 0.02867 | 0.73131 | 0 | 0.00145 | 0.11326 | 1.01978 | 7.14734 | 1.06713 | 0 | 0.00159 | 0.11326 | 1.01978 | 7.14734 | 0.0445 | 30.8231 | 0 | 3.04818 | 0.01978 | 0 | 0.00049 |
| Santa Clara | 2027 | HHDT | Aggregate | Aggregate | Diesel | 9011.07 | 1021241 | 1021241 | 0 | 132755 | 1.70404 | 58.0574 | 2.95803 | 0.02506 | 0.02678 | 0 | 0.00878 | 0.02767 | 0.0262 | 0.028 | 0 | 0.03511 | 0.07906 | 1556.12 | 11312.4 | 0 | 0.0007 | 0.23488 | 0 | 0.24517 | 1.78228 | 0 | 0.0151 | 5.05686 | 0 | 0 | 0 | 0 | 0.01719 | 5.75685 | 0 | 0 | 0 | 0 | 0.21628 | 0.07046 | 73.9242 | 0 | 0.01474 | 0.10712 | 0 |
| Santa Clara | 2027 | HHDT | Aggregate | Aggregate | Electricity | 177.805 | 18594.2 | 0 | 18594.2 | 2312.24 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00856 | 0.01505 | 0 | 0 | 0 | 0.03424 | 0.043 | 0 | 0 | 0 | 0 | 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 | 889.169 | 57261.8 | 57261.8 | 0 | 7941.66 | 0.90714 | 12.389 | 0 | 0.00161 | 0.02597 | 0 | 0.009 | 0.04999 | 0.00176 | 0.02824 | 0 | 0.036 | 0.14284 | 1354 | 10371.4 | 0 | 2.01921 | 32.7258 | 0 | 0.27602 | 2.11427 | 0 | 0.04087 | 0.48839 | 0 | 0 | 0 | 0 | 2.07445 | 33.4228 | 0 | 0 | 0 | 0 | 0.82736 | 12.2457 | 75.2831 | 0 | 0 | 0 | 0 |
| Santa Clara | 2027 | LDA | Aggregate | Aggregate | Gasoline | 599341 | 2.2E+07 | 2.2E+07 | 0 | 2782742 | 0.03235 | 0 | 0.22531 | 0.00105 | 0 | 0.00176 | 0.002 | 0.00265 | 0.00115 | 0 | 0.00192 | 0.008 | 0.00758 | 259.118 | 0 | 65.4271 | 0.00178 | 0 | 0.06046 | 0.00402 | 0 | 0.03066 | 0.00647 | 0 | 0.26778 | 0.08001 | 0.2146 | 1.31682 | 0.03729 | 0.6288 | 0 | 2.73759 | 0.00256 | 0 | 0.00065 |
| Santa Clara | 2027 | LDA | Aggregate | Aggregate | Diesel | 1347.75 | 38343.8 | 38343.8 | 0 | 5721.59 | 0.14088 | 0 | 0 | 0.01171 | 0 | 0 | 0.002 | 0.00272 | 0.01224 | 0 | 0 | 0.008 | 0.00777 | 224.156 | 0 | 0 | 0.00097 | 0 | 0 | 0.03532 | 0 | 0 | 0.02098 | 0 | 0 | 0 | 0 | 0 | 0.02388 | 0 | 0 | 0 | 0 | 0 | 0.0031 | 0.29558 | 0 | 0 | 0.00212 | 0 | 0 |
| Santa Clara | 2027 | LDA | Aggregate | Aggregate | Electricity | 67294.1 | 2805164 | 0 | 2805164 | 324883 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00154 | 0 | 0 | 0 | 0.008 | 0.00439 | 0 | 0 | 0 | 0 | 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 Hy | 21617.5 | 903738 | 422627 | 481111 | 89388.5 | 0.00307 | 0 | 0.11551 | 0.0005 | 0 | 0.00181 | 0.002 | 0.00139 | 0.00055 | 0 | 0.00197 | 0.008 | 0.00397 | 130.522 | 0 | 62.4118 | 0.00041 | 0 | 0.04186 | 0.00054 | 0 | 0.02022 | 0.00133 | 0 | 0.17328 | 0.04114 | 0.04174 | 0.46341 | 0.00194 | 0 | 0.18973 | 0.04114 | 0.04174 | 0.46341 | 0.01882 | 0.20188 | 0 | 1.33989 | 0.00129 | 0 | 0.00062 |
| Santa Clara | 2027 | LDT1 | Aggregate | Aggregate | Gasoline | 49888.2 | 1593479 | 1593479 | 0 | 222127 | 0.09363 | 0 | 0.32228 | 0.00145 | 0 | 0.00229 | 0.002 | 0.00324 | 0.00158 | 0 | 0.0025 | 0.008 | 0.00926 | 310.253 | 0 | 80.7751 | 0.00455 | 0 | 0.08645 | 0.00745 | 0 | 0.03541 | 0.01964 | 0 | 0.42772 | 0.14096 | 0.39724 | 2.28612 | 0.02865 | 0 | 0.4683 | 0.14096 | 0.39724 | 2.28612 | 0.03725 | 1.12869 | 0 | 4.23978 | 0.00307 | 0 | 0.0008 |
| Santa Clara | 2027 | LDT1 | Aggregate | Aggregate | Diesel | 6.22788 | 90.5408 | 90.5408 | 0 | 17.3955 | 1.2982 | 0 | 0 | 0.19579 | 0 | 0 | 0.002 | 0.00367 | 0.20465 | 0 | 0 | 0.008 | 0.01047 | 393.736 | 0 | 0 | 0.01132 | 0 | 0 | 0.06203 | 0 | 0 | 0.24374 | 0 | 0 | 0 | 0 | 0 | 0.27748 | 0 | 0 | 0 | 0 | 0 | 0.0031 | 1.74279 | 0 | 0 | 0.00373 | 0 | 0 |
| Santa Clara | 2027 | LDT1 | Aggregate | Aggregate | Electricity | 300.498 | 12309.7 | 0 | 12309.7 | 1437.61 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00153 | 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 | 2027 | LDT1 | Aggregate | Aggregate | Plug-in Hy | 168.315 | 7479.71 | 3153.07 | 4326.63 | 695.983 | 0.00277 | 0 | 0.11551 | 0.00031 | 0 | 0.00122 | 0.002 | 0.0014 | 0.00033 | 0 | 0.00133 | 0.008 | 0.004 | 117.73 | 0 | 65.9667 | 0.00037 | 0 | 0.04165 | 0.00048 | 0 | 0.02002 | 0.0012 | 0 | 0.17328 | 0.02322 | 0.02002 | 0.2756 | 0.00175 | 0 | 0.18973 | 0.02322 | 0.02002 | 0.2756 | 0.01771 | 0.18235 | 0 | 1.33989 | 0.00116 | 0 | 0.00065 |
| Santa Clara | 2027 | LDT2 | Aggregate | Aggregate | Gasoline | 301290 | 1.1E+07 | 1.1E+07 | 0 | 1406457 | 0.05259 | 0 | 0.28387 | 0.0011 | 0 | 0.0018 | 0.002 | 0.00314 | 0.00119 | 0 | 0.00196 | 0.008 | 0.00896 | 317.685 | 0 | 81.0815 | 0.00229 | 0 | 0.07083 | 0.00504 | 0 | 0.0342 | 0.00866 | 0 | 0.31924 | 0.07425 | 0.20996 | 1.30864 | 0.01264 | 0 | 0.34953 | 0.07425 | 0.20996 | 1.30864 | 0.03841 | 0.72539 | 0 | 3.15013 | 0.00314 | 0 | 0.0008 |
| Santa Clara | 2027 | LDT2 | Aggregate | Aggregate | Diesel | 1103.12 | 39708.7 | 39708.7 | 0 | 5205.7 | 0.03391 | 0 | 0 | 0.00429 | 0 | 0 | 0.002 | 0.00314 | 0.00449 | 0 | 0 | 0.008 | 0.00896 | 289.22 | 0 | 0 | 0.00058 | 0 | 0 | 0.04557 | 0 | 0 | 0.01242 | 0 | 0 | 0 | 0 | 0 | 0.01414 | 0 | 0 | 0 | 0 | 0 | 0.0031 | 0.12788 | 0 | 0 | 0.00274 | 0 | 0 |
| Santa Clara | 2027 | LDT2 | Aggregate | Aggregate | Electricity | 3306.06 | 108940 | 0 | 108940 | 16647.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00153 | 0 | 0 | 0 | 0.008 | 0.00437 | 0 | 0 | 0 | 0 | 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 Hy | 3429.21 | 144082 | 63603.3 | 80478.6 | 14179.8 | 0.0029 | 0 | 0.11551 | 0.00038 | 0 | 0.00145 | 0.002 | 0.0014 | 0.00041 | 0 | 0.00158 | 0.008 | 0.00399 | 123.247 | 0 | 72.1144 | 0.00039 | 0 | 0.0416 | 0.0005 | 0 | 0.01998 | 0.00125 | 0 | 0.17328 | 0.02576 | 0.02298 | 0.30082 | 0.00183 | 0 | 0.18973 | 0.02576 | 0.02298 | 0.30082 | 0.01852 | 0.19077 | 0 | 1.33989 | 0.00122 | 0 | 0.00071 |
| Santa Clara | 2027 | LHDT1 | Aggregate | Aggregate | Gasoline | 19670.4 | 736983 | 736983 | 0 | 293060 | 0.11894 | 0.0331 | 0.57103 | 0.00141 | 0 | 0.00024 | 0.002 | 0.0273 | 0.00153 | 0 | 0.00026 | 0.008 | 0.078 | 829.449 | 115.953 | 25.5138 | 0.0056 | 0.1054 | 0.02916 | 0.00682 | 0.00287 | 0.04779 | 0.02696 | 0.37951 | 0.14224 | 0.03999 | 0.23314 | 2.45741 | 0.03934 | 0.55377 | 0.15573 | 0.03999 | 0.23314 | 2.45741 | 0.04498 | 0.93654 | 3.76311 | 3.22475 | 0.0082 | 0.00115 | 0.00025 |
| Santa Clara | 2027 | LHDT1 | Aggregate | Aggregate | Diesel | 10848.4 | 422662 | 422662 | 0 | 136460 | 1.08439 | 1.64968 | 0 | 0.02806 | 0.02651 | 0 | 0.003 | 0.0273 | 0.02933 | 0.02771 | 0 | 0.012 | 0.078 | 622.795 | 126.721 | 0 | 0.00659 | 0.0051 | 0 | 0.09812 | 0.01996 | 0 | 0.14181 | 0.10976 | 0 | 0 | 0 | 0 | 0.16145 | 0.12495 | 0 | 0 | 0 | 0 | 0.189 | 0.37372 | 0.90975 | 0 | 0.0059 | 0.0012 | 0 |
| Santa Clara | 2027 | LHDT1 | Aggregate | Aggregate | Electricity | 649.088 | 39875.8 | 0 | 39875.8 | 9086.43 | 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 | 2027 | LHDT2 | Aggregate | Aggregate | Gasoline | 2509.55 | 90648.2 | 90648.2 | 0 | 37388.5 | 0.11165 | 0.03233 | 0.56194 | 0.00127 | 0 | 0.00019 | 0.002 | 0.03185 | 0.00138 | 0 | 0.0002 | 0.008 | 0.091 | 938.447 | 134.34 | 24.9353 | 0.00399 | 0.10293 | 0.02809 | 0.007 | 0.00275 | 0.04614 | 0.01753 | 0.37092 | 0.1355 | 0.03769 | 0.21234 | 2.3201 | 0.02558 | 0.54124 | 0.14836 | 0.03769 | 0.21234 | 2.3201 | 0.04499 | 0.74298 | 3.77033 | 3.15552 | 0.00928 | 0.00133 | 0.00025 |
| Santa Clara | 2027 | LHDT2 | Aggregate | Aggregate | Diesel | 5135.73 | 196396 | 196396 | 0 | 64601.1 | 0.93974 | 1.6422 | 0 | 0.0275 | 0.02701 | 0 | 0.003 | 0.03185 | 0.02874 | 0.02823 | 0 | 0.012 | 0.091 | 739.769 | 203.207 | 0 | 0.00644 | 0.0051 | 0 | 0.11655 | 0.03202 | 0 | 0.13873 | 0.10976 | 0 | 0 | 0 | 0 | 0.15793 | 0.12495 | 0 | 0 | 0 | 0 | 0.19556 | 0.35053 | 0.90975 | 0 | 0.00701 | 0.00193 | 0 |
| Santa Clara | 2027 | LHDT2 | Aggregate | Aggregate | Electricity | 164.94 | 9665.77 | 0 | 9665.77 | 2187.87 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.01593 | 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 | 2027 | MCY | Aggregate | Aggregate | Gasoline | 29075.8 | 167762 | 167762 | 0 | 58151.6 | 0.53509 | 0 | 0.11749 | 0.00183 | 0 | 0.00324 | 0.001 | 0.0042 | 0.00196 | 0 | 0.00345 | 0.004 | 0.012 | 186.465 | 0 | 45.3147 | 0.15103 | 0 | 0.16825 | 0.03802 | 0 | 0.00709 | 0.96113 | 0 | 1.22881 | 3.55884 | 3.78149 | 3.84518 | 1.16805 | 0 | 1.33639 | 3.55884 | 3.78149 | 3.84518 | 0.00892 | 11.7104 | 0 | 7.90164 | 0.00184 | 0 | 0.00045 |
| Santa Clara | 2027 | MDV | Aggregate | Aggregate | Gasoline | 165596 | 5720178 | 5720178 | 0 | 767969 | 0.06839 | 0 | 0.33603 | 0.00107 | 0 | 0.00181 | 0.002 | 0.00318 | 0.00117 | 0 | 0.00196 | 0.008 | 0.00909 | 384.741 | 0 | 98.461 | 0.00279 | 0 | 0.08157 | 0.00588 | 0 | 0.03623 | 0.01119 | 0 | 0.391 | 0.08422 | 0.24825 | 1.52096 | 0.01633 | 0 | 0.4281 | 0.08422 | 0.24825 | 1.52096 | 0.03811 | 0.79005 | 0 | 3.34381 | 0.0038 | 0 | 0.00097 |
| Santa Clara | 2027 | MDV | Aggregate | Aggregate | Diesel | 2435.72 | 83100.9 | 83100.9 | 0 | 11312.2 | 0.03686 | 0 | 0 | 0.00407 | 0 | 0 | 0.002 | 0.00325 | 0.00425 | 0 | 0 | 0.008 | 0.0093 | 386.914 | 0 | 0 | 0.00045 | 0 | 0 | 0.06096 | 0 | 0 | 0.0096 | 0 | 0 | 0 | 0 | 0 | 0.01093 | 0 | 0 | 0 | 0 | 0 | 0.0031 | 0.19444 | 0 | 0 | 0.00367 | 0 | 0 |
| Santa Clara | 2027 | MDV | Aggregate | Aggregate | Electricity | 3455.57 | 113999 | 0 | 113999 | 17409 | 0 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.00153 | 0 | 0 | 0 | 0.008 | 0.00437 | 0 | 0 | 0 | 0 | 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 Hy | 2094.11 | 84934.8 | 37715.3 | 47219.6 | 8659.13 | 0.00291 | 0 | 0.11551 | 0.00042 | 0 | 0.00159 | 0.002 | 0.0014 | 0.00046 | 0 | 0.00173 | 0.008 | 0.00399 | 123.973 | 0 | 88.4681 | 0.00039 | 0 | 0.04145 | 0.0005 | 0 | 0.01984 | 0.00126 | 0 | 0.17328 | 0.02952 | 0.02765 | 0.34052 | 0.00184 | 0 | 0.18973 | 0.02952 | 0.02765 | 0.34052 | 0.01865 | 0.19188 | 0 | 1.33989 | 0.00123 | 0 | 0.00087 |
| Santa Clara | 2027 | MH | Aggregate | Aggregate | Gasoline | 2196.55 | 20762.5 | 20762.5 | 0 | 219.743 | 0.29817 | 0 | 0.43799 | 0.00149 | 0 | 0.00036 | 0.003 | 0.01576 | 0.00163 | 0 | 0.00039 | 0.012 | 0.04502 | 1946.25 | 0 | 31.1033 | 0.01054 | 0 | 0.03594 | 0.02058 | 0 | 0.04764 | 0.04328 | 0 | 0.14604 | 9.86905 | 0.2379 | 3.90977 | 0.06315 | 0 | 0.1599 | 9.86905 | 0.2379 | 3.90977 | 0.04496 | 0.9625 | 0 | 3.18005 | 0.01924 | 0 | 0.00031 |
| Santa Clara | 2027 | MH | Aggregate | Aggregate | Diesel | 1025.71 | 9821.24 | 9821.24 | 0 | 102.571 | 3.72569 | 0 | 0 | 0.07574 | 0 | 0 | 0.004 | 0.01567 | 0.07917 | 0 | 0 | 0.016 | 0.04479 | 1083.28 | 0 | 0 | 0.00517 | 0 | 0 | 0.17067 | 0 | 0 | 0.11141 | 0 | 0 | 0 | 0 | 0 | 0.12683 | 0 | 0 | 0 | 0 | 0 | 0.16961 | 0.36299 | 0 | 0 | 0.01026 | 0 | 0 |
| Santa Clara | 2027 | MHDT | Aggregate | Aggregate | Gasoline | 1408.05 | 72579.6 | 72579.6 | 0 | 28172.2 | 0.28384 | 0.08115 | 0.39345 | 0.00134 | 0 | 0.00049 | 0.003 | 0.01576 | 0.00145 | 0 | 0.00053 | 0.012 | 0.04502 | 1709.11 | 517.102 | 43.8055 | 0.0091 | 0.26577 | 0.04334 | 0.01572 | 0.00702 | 0.03168 | 0.04359 | 1.01896 | 0.23268 | 0.02676 | 0.2217 | 2.26883 | 0.06361 | 1.48686 | 0.25475 | 0.02676 | 0.2217 | 2.26883 | 0.045 | 0.87334 | 15.1889 | 5.02402 | 0.0169 | 0.00511 | 0.00043 |
| Santa Clara | 2027 | MHDT | Aggregate | Aggregate | Diesel | 10767.3 | 434296 | 434296 | 0 | 128657 | 0.93945 | 11.2912 | 1.63578 | 0.0094 | 0.01681 | 0 | 0.003 | 0.01594 | 0.00983 | 0.01757 | 0 | 0.012 | 0.04555 | 1128.56 | 2191.46 | 0 | 0.00099 | 0.00999 | 0 | 0.17781 | 0.34527 | 0 | 0.02124 | 0.21502 | 0 | 0 | 0 | 0 | 0.02418 | 0.24478 | 0 | 0 | 0 | 0 | 0.21415 | 0.09092 | 7.51207 | 0 | 0.01069 | 0.02075 | 0 |
| Santa Clara | 2027 | MHDT | Aggregate | Aggregate | Electricity | 282.621 | 14714.3 | 0 | 14714.3 | 3656.16 | 0 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.00795 | 0 | 0 | 0 | 0.012 | 0.02271 | 0 | 0 | 0 | 0 | 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 | 116.095 | 5192.02 | 5192.02 | 0 | 1091.19 | 0.10989 | 6.36196 | 0 | 0.0013 | 0.01927 | 0 | 0.003 | 0.01601 | 0.00141 | 0.02095 | 0 | 0.012 | 0.04574 | 968.913 | 5260.48 | 0 | 0.75868 | 16.3943 | 0 | 0.19752 | 1.07238 | 0 | 0.01084 | 0.23424 | 0 | 0 | 0 | 0 | 0.77429 | 16.7316 | 0 | 0 | 0 | 0 | 1.06 | 2.99405 | 37.3785 | 0 | 0 | 0 | 0 |
| Santa Clara | 2027 | OBUS | Aggregate | Aggregate | Gasoline | 407.827 | 17376 | 17376 | 0 | 8159.8 | 0.38761 | 0.06131 | 0.3992 | 0.001 | 0 | 0.00026 | 0.003 | 0.01568 | 0.00109 | 0 | 0.00029 | 0.012 | 0.0448 | 1706.28 | 372.285 | 30.8488 | 0.01058 | 0.19562 | 0.03472 | 0.01938 | 0.00499 | 0.03033 | 0.05109 | 0.74678 | 0.18402 | 0.03525 | 0.18239 | 3.28073 | 0.07455 | 1.08971 | 0.20148 | 0.03525 | 0.18239 | 3.28073 | 0.04499 | 1.11557 | 5.77766 | 3.83542 | 0.01687 | 0.00368 | 0.0003 |
| Santa Clara | 2027 | OBUS | Aggregate | Aggregate | Diesel | 975.873 | 63044.6 | 63044.6 | 0 | 10038.9 | 1.05761 | 6.69049 | 1.50244 | 0.0174 | 0.00667 | 0 | 0.003 | 0.01809 | 0.01819 | 0.00697 | 0 | 0.012 | 0.05169 | 1229.96 | 1514.62 | 0 | 0.00169 | 0.02093 | 0 | 0.19378 | 0.23863 | 0 | 0.03632 | 0.45069 | 0 | 0 | 0 | 0 | 0.04134 | 0.51308 | 0 | 0 | 0 | 0 | 0.21655 | 0.1347 | 7.70193 | 0 | 0.01165 | 0.01434 | 0 |
| Santa Clara | 2027 | OBUS | Aggregate | Aggregate | Electricity | 7.148 | 573.217 | 0 | 573.217 | 143.017 | 0 | 0 | 0 | 0 | 0 | 0 | 0.003 | 0.00784 | 0 | 0 | 0 | 0.012 | 0.0224 | 0 | 0 | 0 | 0 | 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 | 10.0047 | 655.306 | 655.306 | 0 | 89.042 | 0.13041 | 1.51184 | 0 | 0.00135 | 0.00451 | 0 | 0.003 | 0.01615 | 0.00147 | 0.0049 | 0 | 0.012 | 0.04614 | 962.039 | 1183.27 | 0 | 0.82273 | 3.92115 | 0 | 0.19612 | 0.24122 | 0 | 0.01176 | 0.05603 | 0 | 0 | 0 | 0 | 0.83966 | 4.00182 | 0 | 0 | 0 | 0 | 1.06 | 3.34307 | 8.72839 | 0 | 0 | 0 | 0 |
| Santa Clara | 2027 | SBUS | Aggregate | Aggregate | Gasoline | 188.599 | 9259.27 | 9259.27 | 0 | 754.395 | 0.45035 | 0.87178 | 0.74041 | 0.00088 | 0 | 0.00059 | 0.002 | 0.01572 | 0.00095 | 0 | 0.00064 | 0.008 | 0.04492 | 798.771 | 2554.99 | 56.8378 | 0.00947 | 2.46809 | 0.07398 | 0.02507 | 0.08119 | 0.06781 | 0.0458 | 10.6395 | 0.41959 | 0.12462 | 0.33625 | 2.04858 | 0.06683 | 15.5252 | 0.4594 | 0.12462 | 0.33625 | 2.04858 | 0.045 | 1.17772 | 82.2288 | 9.92196 | 0.0079 | 0.02526 | 0.00056 |
| Santa Clara | 2027 | SBUS | Aggregate | Aggregate | Diesel | 674.827 | 15110.6 | 15110.6 | 0 | 9771.49 | 3.20468 | 19.8654 | 0.52141 | 0.01682 | 0.01551 | 0 | 0.003 | 0.01572 | 0.01758 | 0.01621 | 0 | 0.012 | 0.04492 | 1131.36 | 2199.1 | 0 | 0.00241 | 0.00786 | 0 | 0.17825 | 0.34647 | 0 | 0.05196 | 0.16914 | 0 | 0 | 0 | 0 | 0.05915 | 0.19256 | 0 | 0 | 0 | 0 | 0.15959 | 0.16497 | 4.98951 | 0 | 0.01071 | 0.02082 | 0 |
| Santa Clara | 2027 | SBUS | Aggregate | Aggregate | Electricity | 12.3034 | 395.525 | 0 | 395.525 | 141.882 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00257 | 0.00786 | 0 | 0 | 0 | 0.01028 | 0.02246 | 0 | 0 | 0 | 0 | 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 | 27.0007 | 655.836 | 655.836 | 0 | 390.97 | 0.51628 | 5.24089 | 0 | 0.00338 | 0.01207 | 0 | 0.003 | 0.01572 | 0.00367 | 0.01313 | 0 | 0.012 | 0.04492 | 1235.51 | 4086.87 | 0 | 3.29502 | 14.8862 | 0 | 0.25187 | 0.83314 | 0 | 0.04708 | 0.21269 | 0 | 0 | 0 | 0 | 0.36281 | 15.1925 | 0 | 0 | 0 | 0 | 1.06 | 10.9824 | 22.3604 | 0 | 0 | 0 | 0 |
| Santa Clara | 2027 | UBUS | Aggregate | Aggregate | Gasoline | 46.4913 | 4855.07 | 4855.07 | 0 | 185.965 | 0.02661 | 0 | 0.43315 | 0.00114 | 0 | 0.00013 | 0.002 | 0.03185 | 0.00124 | 0 | 0.00014 | 0.008 | 0.091 | 925.438 | 0 | 36.0722 | 0.0019 | 0 | 0.04274 | 0.00417 | 0 | 0.06878 | 0.00525 | 0 | 0.15102 | 0.05489 | 0.13945 | 0.72905 | 0.00767 | 0 | 0.16535 | 0.05489 | 0.13945 | 0.72905 | 0.045 | 0.59549 | 0 | 5.59309 | 0.00915 | 0 | 0.00036 |
| Santa Clara | 2027 | UBUS | Aggregate | Aggregate | Diesel | 397.28 | 44140.8 | 44140.8 | 0 | 1589.12 | 0.38208 | 0 | 0 | 0.00695 | 0 | 0 | 0.00822 | 0.0385 | 0.00726 | 0 | 0 | 0.03288 | 0.11 | 1110.45 | 0 | 0 | 0.00319 | 0 | 0 | 0.17495 | 0 | 0 | 0.06863 | 0 | 0 | 0 | 0 | 0 | 0.07813 | 0 | 0 | 0 | 0 | 0 | 0.22 | 0.07852 | 0 | 0 | 0.01052 | 0 | 0 |
| Santa Clara | 2027 | UBUS | Aggregate | Aggregate | Electricity | 29.3761 | 3075.29 | 0 | 3075.29 | 117.504 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00895 | 0.01925 | 0 | 0 | 0 | 0.03582 | 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 | 2027 | UBUS | Aggregate | Aggregate | Natural Ga | 63.0515 | 7280.14 | 7280.14 | 0 | 252.206 | 0.06078 | 0 | 0 | 0.00029 | 0 | 0 | 0.00844 | 0.0385 | 0.0003 | 0 | 0 | 0.03378 | 0.11 | 1320.9 | 0 | 0 | 4.33242 | 0 | 0 | 0.26927 | 0 | 0 | 0.0619 | 0 | 0 | 0 | 0 | 0 | 4.42155 | 0 | 0 | 0 | 0 | 0 | 0.97 | 50.556 | 0 | 0 | 0 | 0 | 0 |

**Attachment 4: Project Construction Emissions and Health Risk Calculations**

**960 W Hedding Street, San Jose, CA**
**Construction Health Impact Summary**

**Maximum Impacts at MEI Location - Without Mitigation**

| Emissions Year | Maximum Concentrations | | Cancer Risk (per million) | Hazard Index | Maximum Annual PM2.5 Concentration |
|---|---|---|---|---|---|
| | Exhaust PM10/DPM ($\mu g/m^3$) | Fugitive PM2.5 ($\mu g/m^3$) | Infant/Child | (-) | ($\mu g/m^3$) |
| 2024 | 0.0101 | 0.0108 | 1.79 | 0.00 | 0.02 |
| 2025 | 0.1154 | 0.2472 | 18.96 | 0.02 | 0.36 |
| 2026 | 0.0001 | 0.0000 | 0.00 | 0.00 | 0.00 |
| 2027 | 0.0022 | 0.0000 | 0.06 | 0.00 | 0.00 |
| **Total** | - | - | **20.80** | | - |
| **Maximum** | 0.1154 | 0.2472 | **-** | **0.02** | **0.36** |

**Maximum Impacts at MEI Location - With Mitigation**

| Emissions Year | Maximum Concentrations | | Cancer Risk (per million) | Hazard Index | Maximum Annual PM2.5 Concentration |
|---|---|---|---|---|---|
| | Exhaust PM10/DPM ($\mu g/m^3$) | Fugitive PM2.5 ($\mu g/m^3$) | Infant/Child | (-) | ($\mu g/m^3$) |
| 2024 | 0.0019 | 0.0049 | 0.34 | 0.00 | 0.01 |
| 2025 | 0.0398 | 0.1113 | 6.54 | 0.01 | 0.15 |
| 2026 | 0.0001 | 0.0000 | 0.00 | 0.00 | 0.00 |
| 2027 | 0.0029 | 0.0000 | 0.07 | 0.00 | 0.00 |
| **Total** | - | - | **6.95** | - | - |
| **Maximum** | 0.0398 | 0.1113 | **-** | **0.01** | **0.15** |

- Tier 4 interim engines, and BMPs as Mitigation Measures.

**Maximum Impacts at Temple Emanu-El Preschool**

| Construction Year | Unmitigated Emissions | | | |
|---|---|---|---|---|
| | Maximum Concentrations | | Child Cancer Risk (per million) | Maximum Annual PM2.5 Concentration ($\mu g/m^3$) |
| | Exhaust PM10/DPM ($\mu g/m^3$) | Fugitive PM2.5 ($\mu g/m^3$) | | |
| 2023 | 0.0009 | 0.0011 | 0.06 | 0.002 |
| 2024 | 0.0008 | 0.0008 | 0.06 | 0.002 |
| 2025 | 0.0014 | 0.0018 | 0.10 | 0.003 |
| **Total** | - | - | **0.22** | - |
| **Maximum** | 0.0014 | 0.0018 | **-** | **0.003** |

**960 W Hedding Street, San Jose, CA**

**DPM Emissions and Modeling Emission Rates - Unmitigated**

| Construction Year | Activity | DPM (ton/year) | Area Source | DPM Emissions (lb/yr) | DPM Emissions (lb/hr) | DPM Emissions (g/s) | Modeled Area ($m^2$) | DPM Emission Rate ($g/s/m^2$) |
|---|---|---|---|---|---|---|---|---|
| | | | **Berchman Hall** | | | | | |
| ***2023*** | Construction | 0.0025 | CON_DPM | 4.9 | 0.00113 | 1.42E-04 | 1,237 | 1.15E-07 |
| | | | **Liccardo Renovation** | | | | | |
| ***2026*** | Construction | 0.0005 | CON_DPM | 1.0 | 0.00023 | 2.90E-05 | 2,094 | 1.38E-08 |
| | | | **Matthewson Renovation** | | | | | |
| ***2027*** | Construction | 0.0012 | CON_DPM | 2.4 | 0.00055 | 6.87E-05 | 1,046 | 6.57E-08 |
| | | | **New Admin** | | | | | |
| ***2025 + 2026*** | Construction | 0.0201 | CON_DPM | 40.3 | 0.00919 | 1.16E-03 | 1,085 | 1.07E-06 |
| | | | **New Academic Hall** | | | | | |
| ***2023 + 2024*** | Construction | 0.0270 | CON_DPM | 54.0 | 0.01234 | 1.55E-03 | 4,191 | 3.71E-07 |
| ***2025*** | Construction | 0.0050 | CON_DPM | 10.0 | 0.00228 | 2.87E-04 | 4,191 | 6.86E-08 |
| ***Total*** | | ***0.0563*** | | ***112.6*** | ***0.0257*** | ***0.0032*** | | |

*Construction Hours*
hr/day = 12 (7am - 7pm)
days/yr = 365
hours/year = 4380

**960 W Hedding Street, San Jose, CA**

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

| 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 ($m^2$) | PM2.5 Emission Rate $g/s/m^2$ |
|---|---|---|---|---|---|---|---|---|
| | | **Berchman Hall** | | | | | | |
| ***2023*** | Construction | CON_FUG | 0.0086 | 17.1 | 0.00392 | 4.93E-04 | 1,237 | 3.99E-07 |
| | | **Liccardo Renovation** | | | | | | |
| ***2026*** | Construction | CON_FUG | 0.0000 | 0.0 | 0.00000 | 4.34E-07 | 2,094 | 2.07E-10 |
| | | **Matthewson Renovation** | | | | | | |
| ***2027*** | Construction | CON_FUG | 0.0000 | 0.0 | 0.00000 | 4.34E-07 | 1,046 | 4.15E-10 |
| | | **New Admin** | | | | | | |
| ***2025 + 2026*** | Construction | CON_FUG | 0.0293 | 58.7 | 0.01340 | 1.69E-03 | 1,085 | 1.56E-06 |
| | | **New Academic Hall** | | | | | | |
| ***2023 + 2024*** | Construction | CON_FUG | 0.0283 | 56.6 | 0.01292 | 1.63E-03 | 4,191 | 3.89E-07 |
| ***2025*** | Construction | CON_FUG | 0.0001 | 0.2 | 0.00004 | 4.47E-06 | 4,191 | 1.07E-09 |
| ***Total*** | | | ***0.0663*** | ***132.6*** | ***0.0303*** | ***0.0038*** | | |

*Construction Hours*
hr/day = 12 (7am - 7pm)
days/yr = 365
hours/year = 4380

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

| Construction Year | Activity | DPM (ton/year) | Area Source | DPM Emissions (lb/yr) | DPM Emissions (lb/hr) | DPM Emissions (g/s) | Modeled Area ($m^2$) | DPM Emission Rate ($g/s/m^2$) |
|---|---|---|---|---|---|---|---|---|
| | | | **Berchman Hall** | | | | | |
| ***2023*** | Construction | 0.0002 | CON_DPM | 0.4 | 0.00008 | 1.05E-05 | 22,624 | 4.64E-10 |
| | | | **Liccardo Renovation** | | | | | |
| ***2026*** | Construction | 0.0008 | CON_DPM | 1.6 | 0.00036 | 4.57E-05 | 2,094 | 2.18E-08 |
| | | | **Matthewson Renovation** | | | | | |
| ***2027*** | Construction | 0.0016 | CON_DPM | 3.2 | 0.00073 | 9.17E-05 | 1,046 | 8.77E-08 |
| | | | **New Admin** | | | | | |
| ***2025 + 2026*** | Construction | 0.0067 | CON_DPM | 13.4 | 0.00307 | 3.86E-04 | 1,085 | 3.56E-07 |
| | | | **New Academic Hall** | | | | | |
| ***2023 + 2024*** | Construction | 0.0051 | CON_DPM | 10.2 | 0.00234 | 2.94E-04 | 4,191 | 7.02E-08 |
| ***2025*** | Construction | 0.0054 | CON_DPM | 10.9 | 0.00248 | 3.12E-04 | 4,191 | 7.45E-08 |
| ***Total*** | | ***0.0198*** | | ***39.6*** | ***0.0091*** | ***0.0011*** | | |

*Construction Hours*
hr/day = 12 (7am - 7pm)
days/yr = 365
hours/year = 4380

**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 ($m^2$) | PM2.5 Emission Rate $g/s/m^2$ |
|---|---|---|---|---|---|---|---|---|
| | | **Berchman Hall** | | | | | | |
| ***2023*** | Construction | CON_FUG | 0.0039 | 7.7 | 0.00176 | 2.22E-04 | 22,624 | 9.80E-09 |
| | | **Liccardo Renovation** | | | | | | |
| ***2026*** | Construction | CON_FUG | 0.0000 | 0.0 | 0.00000 | 4.34E-07 | 2,094 | 2.07E-10 |
| | | **Matthewson Renovation** | | | | | | |
| ***2027*** | Construction | CON_FUG | 0.0000 | 0.0 | 0.00000 | 4.34E-07 | 1,046 | 4.15E-10 |
| | | **New Admin** | | | | | | |
| ***2025 + 2026*** | Construction | CON_FUG | 0.0132 | 26.5 | 0.00604 | 7.61E-04 | 1,085 | 7.02E-07 |
| | | **New Academic Hall** | | | | | | |
| ***2023 + 2024*** | Construction | CON_FUG | 0.0129 | 25.8 | 0.00588 | 7.41E-04 | 4,191 | 1.77E-07 |
| ***2025*** | Construction | CON_FUG | 0.0001 | 0.2 | 0.00004 | 4.47E-06 | 4,191 | 1.07E-09 |
| ***Total*** | | | ***0.0301*** | ***60.1*** | ***0.0137*** | ***0.0017*** | | |

*Construction Hours*
hr/day = 12 (7am - 7pm)
days/yr = 365
hours/year = 4380

**960 W Hedding Street, San Jose, CA - Construction Impacts - Without Mitigation**
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction**
**Impacts at Off-Site MEI Location - 4.5 meter receptor height**

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

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

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

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

**Values**

| | Infant/Child | | | Adult |
|---|---|---|---|---|
| **Age -->** | **3rd Trimester** | **0 - 2** | **2 - 16** | **16 - 30** |
| **Parameter** | | | | |
| ASF = | 10 | 10 | 3 | 1 |
| CPF = | 1.10E+00 | 1.10E+00 | 1.10E+00 | 1.10E+00 |
| DBR* = | 361 | 1090 | 572 | 261 |
| A = | 1 | 1 | 1 | 1 |
| EF = | 350 | 350 | 350 | 350 |
| AT = | 70 | 70 | 70 | 70 |
| FAH = | 1.00 | 1.00 | 1.00 | 0.73 |

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

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

| | | | Infant/Child - Exposure Information | | | | Adult - Exposure Information | | | | Maximum | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Modeled | | | | | | |
| Exposure | Exposure Duration | | DPM Conc (ug/m3) | | Age Sensitivity | Infant/Child Cancer Risk | DPM Conc (ug/m3) | | Age Sensitivity | Adult Cancer Risk | Hazard | Fugitive | Total |
| Year | (years) | Age | Year | Annual | Factor | (per million) | Year | Annual | Factor | (per million) | Index | PM2.5 | PM2.5 |
| 0 | 0.25 | -0.25 - 0* | 2024 | 0.0088 | 10 | 0.12 | 2024 | 0.0088 | - | - | | | |
| 1 | 1 | 0 - 1 | 2024 | 0.0088 | 10 | 1.45 | 2024 | 0.0088 | 1 | 0.03 | 0.00 | 0.010 | 0.02 |
| 2 | 1 | 1 - 2 | 2025 | 0.1082 | 10 | 17.78 | 2025 | 0.1082 | 1 | 0.31 | 0.02 | 0.189 | 0.30 |
| 3 | 1 | 2 - 3 | 2026 | 0.0001 | 3 | 0.00 | 2026 | 0.0001 | 1 | 0.00 | 0.00 | 0.000 | 0.00 |
| 4 | 1 | 3 - 4 | 2027 | 0.0020 | 3 | 0.05 | 2027 | 0.0020 | 1 | 0.01 | 0.00 | 0.000 | 0.00 |
| 5 | 1 | 4 - 5 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 6 | 1 | 5 - 6 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 7 | 1 | 6 - 7 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 8 | 1 | 7 - 8 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 9 | 1 | 8 - 9 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 10 | 1 | 9 - 10 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 11 | 1 | 10 - 11 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 12 | 1 | 11 - 12 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 13 | 1 | 12 - 13 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 14 | 1 | 13 - 14 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 15 | 1 | 14 - 15 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 16 | 1 | 15 - 16 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 17 | 1 | 16-17 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 18 | 1 | 17-18 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 19 | 1 | 18-19 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 20 | 1 | 19-20 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 21 | 1 | 20-21 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 22 | 1 | 21-22 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 23 | 1 | 22-23 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 24 | 1 | 23-24 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 25 | 1 | 24-25 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 26 | 1 | 25-26 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 27 | 1 | 26-27 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 28 | 1 | 27-28 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 29 | 1 | 28-29 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 30 | 1 | 29-30 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| **Total Increased Cancer Risk** | | | | | | **19.40** | | | | **0.34** | | | |

* Third trimester of pregnancy

**960 W Hedding Street, San Jose, CA - Construction Impacts - Without Mitigation**
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction**
**Impacts at Off-Site MEI Location - 1.5 meter receptor height**

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

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

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

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

**Values**

| | Infant/Child | | | Adult |
|---|---|---|---|---|
| **Age -->** | **3rd Trimester** | **0 - 2** | **2 - 16** | **16 - 30** |
| **Parameter** | | | | |
| ASF = | 10 | 10 | 3 | 1 |
| CPF = | 1.10E+00 | 1.10E+00 | 1.10E+00 | 1.10E+00 |
| DBR* = | 361 | 1090 | 572 | 261 |
| A = | 1 | 1 | 1 | 1 |
| EF = | 350 | 350 | 350 | 350 |
| AT = | 70 | 70 | 70 | 70 |
| FAH = | 1.00 | 1.00 | 1.00 | 0.73 |

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

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

| | | | Infant/Child - Exposure Information | | | | Adult - Exposure Information | | | | Maximum | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Modeled | | | | | | |
| Exposure | Exposure Duration | | DPM Conc (ug/m3) | | Age Sensitivity | Infant/Child Cancer Risk | DPM Conc (ug/m3) | | Age Sensitivity | Adult Cancer Risk | Hazard | Fugitive | Total |
| Year | (years) | Age | Year | Annual | Factor | (per million) | Year | Annual | Factor | (per million) | Index | PM2.5 | PM2.5 |
| 0 | 0.25 | -0.25 - 0* | 2024 | 0.0101 | 10 | 0.14 | 2024 | 0.0101 | - | - | | | |
| 1 | 1 | 0 - 1 | 2024 | 0.0101 | 10 | 1.65 | 2024 | 0.0101 | 1 | 0.03 | 0.00 | 0.011 | 0.02 |
| 2 | 1 | 1 - 2 | 2025 | 0.1154 | 10 | 18.96 | 2025 | 0.1154 | 1 | 0.33 | 0.02 | 0.247 | 0.36 |
| 3 | 1 | 2 - 3 | 2026 | 0.0001 | 3 | 0.00 | 2026 | 0.0001 | 1 | 0.00 | 0.00 | 0.000 | 0.00 |
| 4 | 1 | 3 - 4 | 2027 | 0.0022 | 3 | 0.06 | 2027 | 0.0022 | 1 | 0.01 | 0.00 | 0.000 | 0.00 |
| 5 | 1 | 4 - 5 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 6 | 1 | 5 - 6 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 7 | 1 | 6 - 7 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 8 | 1 | 7 - 8 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 9 | 1 | 8 - 9 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 10 | 1 | 9 - 10 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 11 | 1 | 10 - 11 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 12 | 1 | 11 - 12 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 13 | 1 | 12 - 13 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 14 | 1 | 13 - 14 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 15 | 1 | 14 - 15 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 16 | 1 | 15 - 16 | | 0.0000 | 3 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 17 | 1 | 16-17 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 18 | 1 | 17-18 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 19 | 1 | 18-19 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 20 | 1 | 19-20 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 21 | 1 | 20-21 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 22 | 1 | 21-22 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 23 | 1 | 22-23 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 24 | 1 | 23-24 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 25 | 1 | 24-25 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 26 | 1 | 25-26 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 27 | 1 | 26-27 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 28 | 1 | 27-28 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 29 | 1 | 28-29 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| 30 | 1 | 29-30 | | 0.0000 | 1 | 0.00 | | 0.0000 | 1 | 0.00 | | | |
| **Total Increased Cancer Risk** | | | | | | **20.80** | | | | **0.37** | | | |

* Third trimester of pregnancy

**960 W Hedding Street, San Jose, CA - Construction Impacts - With Mitigation**
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction**
**Impacts at Off-Site MEI Location - 4.5 meter receptor height**

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

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

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

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

**Values**

| | Infant/Child | | | Adult |
|---|---|---|---|---|
| **Age -->** | **3rd Trimester** | **0 - 2** | **2 - 16** | **16 - 30** |
| **Parameter** | | | | |
| ASF = | 10 | 10 | 3 | 1 |
| CPF = | 1.10E+00 | 1.10E+00 | 1.10E+00 | 1.10E+00 |
| DBR* = | 361 | 1090 | 572 | 261 |
| A = | 1 | 1 | 1 | 1 |
| EF = | 350 | 350 | 350 | 350 |
| AT = | 70 | 70 | 70 | 70 |
| FAH = | 1.00 | 1.00 | 1.00 | 0.73 |

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

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

| | | | Infant/Child - Exposure Information | | | | Adult - Exposure Information | | | | Maximum | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | DPM Conc (ug/m3) | | | | Modeled DPM Conc (ug/m3) | | | | |
| **Exposure Year** | **Exposure Duration (years)** | **Age** | **Year** | **Annual** | **Age Sensitivity Factor** | **Infant/Child Cancer Risk (per million)** | **Year** | **Annual** | **Age Sensitivity Factor** | **Adult Cancer Risk (per million)** | **Hazard Index** | **Fugitive PM2.5** |
| 0 | 0.25 | -0.25 - 0* | 2024 | 0.0017 | 10 | 0.02 | 2024 | 0.0017 | - | - | | |
| 1 | 1 | 0 - 1 | 2024 | 0.0017 | 10 | 0.27 | 2024 | 0.0017 | 1 | 0.00 | 0.00 | 0.004 |
| 2 | 1 | 1 - 2 | 2025 | 0.0372 | 10 | 6.12 | 2025 | 0.0372 | 1 | 0.11 | 0.01 | 0.085 |
| 3 | 1 | 2 - 3 | 2026 | 0.0001 | 3 | 0.00 | 2026 | 0.0001 | 1 | 0.00 | 0.00 | 0.000 |
| 4 | 1 | 3 - 4 | 2027 | 0.0027 | 3 | 0.07 | 2027 | 0.0027 | 1 | 0.01 | 0.00 | 0.000 |
| 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 | | |

**960 W Hedding Street, San Jose, CA - Construction Impacts - With Mitigation**
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction**
**Impacts at Off-Site MEI Location - 1.5 meter receptor height**

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

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

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

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

**Values**

| | Infant/Child | | | Adult |
|---|---|---|---|---|
| **Age -->** | **3rd Trimester** | **0 - 2** | **2 - 16** | **16 - 30** |
| **Parameter** | | | | |
| ASF = | 10 | 10 | 3 | 1 |
| CPF = | 1.10E+00 | 1.10E+00 | 1.10E+00 | 1.10E+00 |
| DBR* = | 361 | 1090 | 572 | 261 |
| A = | 1 | 1 | 1 | 1 |
| EF = | 350 | 350 | 350 | 350 |
| AT = | 70 | 70 | 70 | 70 |
| FAH = | 1.00 | 1.00 | 1.00 | 0.73 |

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

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

| | | | Infant/Child - Exposure Information | | | | Adult - Exposure Information | | | | Maximum | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | DPM Conc (ug/m3) | | | Modeled | | | | | |
| **Exposure Year** | **Exposure Duration (years)** | **Age** | **Year** | **Annual** | **Age Sensitivity Factor** | **Infant/Child Cancer Risk (per million)** | **DPM Conc (ug/m3) Year** | **Annual** | **Age Sensitivity Factor** | **Adult Cancer Risk (per million)** | **Hazard Index** | **Fugitive PM2.5** |
| 0 | 0.25 | -0.25 - 0* | 2024 | 0.0019 | 10 | 0.03 | 2024 | 0.0019 | - | - | | |
| 1 | 1 | 0 - 1 | 2024 | 0.0019 | 10 | 0.31 | 2024 | 0.0019 | 1 | 0.01 | 0.00 | 0.005 |
| 2 | 1 | 1 - 2 | 2025 | 0.0398 | 10 | 6.54 | 2025 | 0.0398 | 1 | 0.11 | 0.01 | 0.111 |
| 3 | 1 | 2 - 3 | 2026 | 0.0001 | 3 | 0.00 | 2026 | 0.0001 | 1 | 0.00 | 0.00 | 0.000 |
| 4 | 1 | 3 - 4 | 2027 | 0.0029 | 3 | 0.07 | 2027 | 0.0029 | 1 | 0.01 | 0.00 | 0.000 |
| 5 | 1 | 4 - 5 | | 0.0000 | 3 | 0.00 | | 0.0007 | 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 | | |

**960 W Hedding Street, San Jose, CA - Construction Impacts - Without Mitigation**
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction Impacts at Temple Emanu-El Preschool - 1.5 meter receptor height**

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 SCAF x 8-Hr BR x A x (EF/365) x $10^{-6}$

Where: $C_{air}$ = concentration in air ($\mu g/m^3$)
SCAF = School Child Adjustment Factor (unitless) for source operation and exposures different than 8 hours/day
= (24/SHR) x (7days/SDay) x (SCHR/8 hrs)
SHR = Hours/day of emission source operation
SDay = Number of days per week of source operation
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
EF = Exposure frequency (days/year)
$10^{-6}$ = Conversion factor

**Values**

| | Infant | Child |
|---|---|---|
| **Age -->** | **0 - <2** | **2 - <16** |
| **Parameter** | | |
| ASF = | 10 | 3 |
| DPM CPF = | 1.10E+00 | 1.10E+00 |
| 8-Hr BR* = | 1200 | 520 |
| SCHR = | 9 | 9 |
| SHR = | 9 | 9 |
| SDay = | 5 | 5 |
| A = | 1 | 1 |
| EF = | 250 | 250 |
| AT = | 70 | 70 |
| SCAF = | 4.20 | 4.20 |

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

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

| | | | Child - Exposure Information | | | Child | Maximum | | |
|---|---|---|---|---|---|---|---|---|---|
| Exposure Year | Exposure Duration (years) | Age | DPM Conc (ug/m3) Year | DPM Conc (ug/m3) Annual | Age* Sensitivity Factor | Cancer Risk (per million) | Hazard Index | Fugitive PM2.5 | Total PM2.5 |
| 1 | 1 | 2 - 3 | 2023 | 0.0009 | 3 | 0.06 | 0.0002 | 0.001 | 0.00 |
| 2 | 1 | 3 - 4 | 2024 | 0.0008 | 3 | 0.06 | 0.0002 | 0.001 | 0.00 |
| 3 | 1 | 4 - 5 | 2025 | 0.0014 | 3 | 0.10 | 0.0003 | 0.002 | 0.00 |
| **Total Increased Cancer Risk** | | | | | | **0.22** | | | |

* Children assumed to be 2 years of age with 3 years of exposure to construction emissions

**960 W Hedding Street, San Jose, CA - Construction Impacts - Without Mitigation**
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction Impacts at on Campus Max TAC Location - 1.5 meter receptor height**

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 SCAF x 8-Hr BR x A x (EF/365) x $10^{-6}$

Where: $C_{air}$ = concentration in air ($\mu g/m^3$)
SCAF = School Child Adjustment Factor (unitless) for source operation and exposures different than 8 hours/day
= (24/SHR) x (7days/SDay) x (SCHR/8 hrs)
SHR = Hours/day of emission source operation
SDay = Number of days per week of source operation
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
EF = Exposure frequency (days/year)
$10^{-6}$ = Conversion factor

**Values**

| | Infant | Child |
|---|---|---|
| **Age -->** | **0 - <2** | **2 - <16** |
| **Parameter** | | |
| ASF = | 10 | 3 |
| DPM CPF = | 1.10E+00 | 1.10E+00 |
| 8-Hr BR* = | 1200 | 520 |
| SCHR = | 9 | 9 |
| SHR = | 9 | 9 |
| SDay = | 5 | 5 |
| A = | 1 | 1 |
| EF = | 250 | 250 |
| AT = | 70 | 70 |
| SCAF = | 4.20 | 4.20 |

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

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

| | | | Child - Exposure Information | | | Child | Maximum | | |
|---|---|---|---|---|---|---|---|---|---|
| Exposure Year | Exposure Duration (years) | Age | DPM Conc (ug/m3) Year | DPM Conc (ug/m3) Annual | Age* Sensitivity Factor | Cancer Risk (per million) | Hazard Index | Fugitive PM2.5 | Total PM2.5 |
| 1 | 1 | 13 - 14 | 2023 | 0.0718 | 3 | 5.06 | 0.0144 | 0.107 | 0.18 |
| 2 | 1 | 14 - 15 | 2024 | 0.0664 | 3 | 4.68 | 0.0133 | 0.086 | 0.15 |
| 3 | 1 | 15 - 16 | 2025 | 0.0828 | 3 | 5.84 | 0.0166 | 0.142 | 0.22 |
| 4 | 1 | 16 - 17 | 2026 | 0.0025 | 3 | 0.18 | 0.0005 | 0.000 | 0.00 |
| **Total Increased Cancer Risk** | | | | | | **15.76** | | | |

* Children assumed to be 13 years of age with 4 years of exposure to construction emissions

**960 W Hedding Street, San Jose, CA - Construction Impacts - Without Mitigation**
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction Impacts at on Campus Max TAC Location - 4.5 meter receptor height**

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 SCAF x 8-Hr BR x A x (EF/365) x $10^{-6}$

Where: $C_{air}$ = concentration in air ($\mu g/m^3$)
SCAF = School Child Adjustment Factor (unitless) for source operation and exposures different than 8 hours/day
= (24/SHR) x (7days/SDay) x (SCHR/8 hrs)
SHR = Hours/day of emission source operation
SDay = Number of days per week of source operation
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
EF = Exposure frequency (days/year)
$10^{-6}$ = Conversion factor

**Values**

| | Infant | Child |
|---|---|---|
| **Age -->** | **0 - <2** | **2 - <16** |
| **Parameter** | | |
| ASF = | 10 | 3 |
| DPM CPF = | 1.10E+00 | 1.10E+00 |
| 8-Hr BR* = | 1200 | 520 |
| SCHR = | 9 | 9 |
| SHR = | 9 | 9 |
| SDay = | 5 | 5 |
| A = | 1 | 1 |
| EF = | 250 | 250 |
| AT = | 70 | 70 |
| SCAF = | 4.20 | 4.20 |

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

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

| | | | Child - Exposure Information | | | Child | Maximum | | |
|---|---|---|---|---|---|---|---|---|---|
| Exposure Year | Exposure Duration (years) | Age | DPM Conc (ug/m3) Year | DPM Conc (ug/m3) Annual | Age* Sensitivity Factor | Cancer Risk (per million) | Hazard Index | Fugitive PM2.5 | Total PM2.5 |
| 1 | 1 | 13 - 14 | 2023 | 0.0640 | 3 | 4.51 | 0.0128 | 0.092 | 0.16 |
| 2 | 1 | 14 - 15 | 2024 | 0.0590 | 3 | 4.16 | 0.0118 | 0.073 | 0.13 |
| 3 | 1 | 15 - 16 | 2025 | 0.0730 | 3 | 5.15 | 0.0146 | 0.117 | 0.19 |
| 4 | 1 | 16 - 17 | 2026 | 0.0030 | 3 | 0.21 | 0.0006 | 0.000 | 0.00 |
| **Total Increased Cancer Risk** | | | | | | **14.03** | | | |

* Children assumed to be 13 years of age with 4 years of exposure to construction emissions

**960 W Hedding Street, San Jose, CA - Construction Impacts - With Mitigation**
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction Impacts at on Campus Max TAC Location - 1.5 meter receptor height**

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 SCAF x 8-Hr BR x A x (EF/365) x $10^{-6}$

Where: $C_{air}$ = concentration in air ($\mu g/m^3$)
SCAF = School Child Adjustment Factor (unitless) for source operation and exposures different than 8 hours/day
= (24/SHR) x (7days/SDay) x (SCHR/8 hrs)
SHR = Hours/day of emission source operation
SDay = Number of days per week of source operation
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
EF = Exposure frequency (days/year)
$10^{-6}$ = Conversion factor

**Values**

| | Infant | Child |
|---|---|---|
| **Age -->** | **0 - <2** | **2 - <16** |
| **Parameter** | | |
| ASF = | 10 | 3 |
| DPM CPF = | 1.10E+00 | 1.10E+00 |
| 8-Hr BR* = | 1200 | 520 |
| SCHR = | 9 | 9 |
| SHR = | 9 | 9 |
| SDay = | 5 | 5 |
| A = | 1 | 1 |
| EF = | 250 | 250 |
| AT = | 70 | 70 |
| SCAF = | 4.20 | 4.20 |

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

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

| | | | Child - Exposure Information | | | Child | Maximum | | |
|---|---|---|---|---|---|---|---|---|---|
| Exposure Year | Exposure Duration (years) | Age | DPM Conc (ug/m3) Year | DPM Conc (ug/m3) Annual | Age* Sensitivity Factor | Cancer Risk (per million) | Hazard Index | Fugitive PM2.5 | Total PM2.5 |
| 1 | 1 | 13 - 14 | 2023 | 0.0126 | 3 | 0.89 | 0.0025 | 0.040 | 0.05 |
| 2 | 1 | 14 - 15 | 2024 | 0.0126 | 3 | 0.89 | 0.0025 | 0.039 | 0.05 |
| 3 | 1 | 15 - 16 | 2025 | 0.0337 | 3 | 2.37 | 0.0067 | 0.064 | 0.10 |
| 4 | 1 | 16 - 17 | 2026 | 0.0040 | 3 | 0.28 | 0.0008 | 0.000 | 0.00 |
| **Total Increased Cancer Risk** | | | | | | **4.43** | | | |

* Children assumed to be 13 years of age with 4 years of exposure to construction emissions

**960 W Hedding Street, San Jose, CA - Construction Impacts - With Mitigation**
**Maximum DPM Cancer Risk and PM2.5 Calculations From Construction Impacts at on Campus Max TAC Location - 4.5 meter receptor height**

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 SCAF x 8-Hr BR x A x (EF/365) x $10^{-6}$

Where: $C_{air}$ = concentration in air ($\mu g/m^3$)
SCAF = School Child Adjustment Factor (unitless) for source operation and exposures different than 8 hours/day
= (24/SHR) x (7days/SDay) x (SCHR/8 hrs)
SHR = Hours/day of emission source operation
SDay = Number of days per week of source operation
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
EF = Exposure frequency (days/year)
$10^{-6}$ = Conversion factor

**Values**

| | Infant | Child |
|---|---|---|
| **Age -->** | **0 - <2** | **2 - <16** |
| **Parameter** | | |
| ASF = | 10 | 3 |
| DPM CPF = | 1.10E+00 | 1.10E+00 |
| 8-Hr BR* = | 1200 | 520 |
| SCHR = | 9 | 9 |
| SHR = | 9 | 9 |
| SDay = | 5 | 5 |
| A = | 1 | 1 |
| EF = | 250 | 250 |
| AT = | 70 | 70 |
| SCAF = | 4.20 | 4.20 |

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

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

| | | | Child - Exposure Information | | | Child | Maximum | | |
|---|---|---|---|---|---|---|---|---|---|
| Exposure Year | Exposure Duration (years) | Age | DPM Conc (ug/m3) Year | DPM Conc (ug/m3) Annual | Age* Sensitivity Factor | Cancer Risk (per million) | Hazard Index | Fugitive PM2.5 | Total PM2.5 |
| 1 | 1 | 13 - 14 | 2023 | 0.0112 | 3 | 0.79 | 0.0022 | 0.033 | 0.04 |
| 2 | 1 | 14 - 15 | 2024 | 0.0112 | 3 | 0.79 | 0.0022 | 0.033 | 0.04 |
| 3 | 1 | 15 - 16 | 2025 | 0.0297 | 3 | 2.09 | 0.0059 | 0.053 | 0.08 |
| 4 | 1 | 16 - 17 | 2026 | 0.0047 | 3 | 0.33 | 0.0009 | 0.000 | 0.00 |
| **Total Increased Cancer Risk** | | | | | | **4.00** | | | |

* Children assumed to be 13 years of age with 4 years of exposure to construction emissions

# Attachment 5: Health Risk Modeling Information and Calculations

File Name: Local Roadways 2023.EF
CT-EMFAC2017 Version: 1.0.2.27401
Run Date: 12/8/2022 3:33:39 PM
Area: Santa Clara (SF)
Analysis Year: 2023
Season: Annual

==========

| Vehicle Category | VMT Fraction | Diesel VMT Fraction | Gas VMT Fraction |
|---|---|---|---|
| | Across Category | Within Category | Within Category |
| Truck 1 | 0.015 | 0.487 | 0.513 |
| Truck 2 | 0.020 | 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 | 25 mph | 30 mph | 35 mph |
|---|---|---|---|
| PM2.5 | 0.002194 | 0.001765 | 0.001511 |
| TOG | 0.046181 | 0.036838 | 0.030861 |
| Diesel PM | 0.000382 | 0.000353 | 0.000350 |

==========

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

| Pollutant Name | Emission Factor |
|---|---|
| TOG | 1.357610 |

==========

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==========

**960 W Hedding St, San Jose, CA - Off-Site Residential**
**Cumulative Operation - The Alameda**
**DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions**
**Year = 2023**

| Road Link | Description | Direction | No. Lanes | Link Length (m) | Link Length (mi) | Link Width (m) | Link Width (ft) | Release Height ( m) | Average Speed (mph) | Average Vehicles per Day |
|---|---|---|---|---|---|---|---|---|---|---|
| DPM_NB_ALA | The Alameda Northbound | NB | 2 | 474.3 | 0.29 | 13.3 | 43.7 | 3.4 | 30 | 18,001 |
| DPM_SB_ALA | The Alameda Southbound | SB | 2 | 433.0 | 0.27 | 13.3 | 43.7 | 3.4 | 30 | 18,001 |
| | | | | | | | | | Total | 36,002 |

**Emission Factors**

| Speed Category | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Travel Speed (mph) | 35 | | | |
| Emissions per Vehicle (g/VMT) | 0.00035 | | | |

Emisson Factors from CT-EMFAC2017

**2023 Hourly Traffic Volumes and DPM Emissions - DPM_NB_ALA**

| Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.91% | 704 | 2.03E-05 | 9 | 6.50% | 1170 | 3.38E-05 | 17 | 5.58% | 1004 | 2.90E-05 |
| 2 | 2.59% | 466 | 1.35E-05 | 10 | 7.36% | 1325 | 3.83E-05 | 18 | 3.28% | 590 | 1.71E-05 |
| 3 | 2.88% | 518 | 1.50E-05 | 11 | 6.33% | 1139 | 3.29E-05 | 19 | 2.36% | 424 | 1.23E-05 |
| 4 | 3.34% | 600 | 1.73E-05 | 12 | 6.84% | 1232 | 3.56E-05 | 20 | 0.92% | 166 | 4.79E-06 |
| 5 | 2.19% | 393 | 1.14E-05 | 13 | 6.15% | 1108 | 3.20E-05 | 21 | 2.99% | 538 | 1.56E-05 |
| 6 | 3.39% | 611 | 1.76E-05 | 14 | 6.15% | 1108 | 3.20E-05 | 22 | 4.14% | 745 | 2.15E-05 |
| 7 | 5.98% | 1077 | 3.11E-05 | 15 | 5.23% | 942 | 2.72E-05 | 23 | 2.47% | 445 | 1.29E-05 |
| 8 | 4.66% | 838 | 2.42E-05 | 16 | 3.91% | 704 | 2.03E-05 | 24 | 0.86% | 155 | 4.49E-06 |
| | | | | | | | | Total | | 18,001 | |

**2023 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_ALA**

| Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.91% | 704 | 1.86E-05 | 9 | 6.50% | 1170 | 3.09E-05 | 17 | 5.58% | 1004 | 2.65E-05 |
| 2 | 2.59% | 466 | 1.23E-05 | 10 | 7.36% | 1325 | 3.50E-05 | 18 | 3.28% | 590 | 1.56E-05 |
| 3 | 2.88% | 518 | 1.37E-05 | 11 | 6.33% | 1139 | 3.00E-05 | 19 | 2.36% | 424 | 1.12E-05 |
| 4 | 3.34% | 600 | 1.58E-05 | 12 | 6.84% | 1232 | 3.25E-05 | 20 | 0.92% | 166 | 4.37E-06 |
| 5 | 2.19% | 393 | 1.04E-05 | 13 | 6.15% | 1108 | 2.92E-05 | 21 | 2.99% | 538 | 1.42E-05 |
| 6 | 3.39% | 611 | 1.61E-05 | 14 | 6.15% | 1108 | 2.92E-05 | 22 | 4.14% | 745 | 1.97E-05 |
| 7 | 5.98% | 1077 | 2.84E-05 | 15 | 5.23% | 942 | 2.49E-05 | 23 | 2.47% | 445 | 1.17E-05 |
| 8 | 4.66% | 838 | 2.21E-05 | 16 | 3.91% | 704 | 1.86E-05 | 24 | 0.86% | 155 | 4.10E-06 |
| | | | | | | | | Total | | 18,001 | |

**960 W Hedding St, San Jose, CA - Off-Site Residential**
**Cumulative Operation - The Alameda**
**PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions**
**Year = 2023**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| PM2.5_NB_ALA | The Alameda Northbound | NB | 2 | 474.3 | 0.29 | 13.3 | 44 | 1.3 | 30 | 18,001 |
| PM2.5_SB_ALA | The Alameda Southbound | SB | 2 | 433.0 | 0.27 | 13.3 | 44 | 1.3 | 30 | 18,001 |
| | | | | | | | | | Total | 36,002 |

**Emission Factors - PM2.5**

| Speed Category | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Travel Speed (mph) | 35 | | | |
| Emissions per Vehicle (g/VMT) | 0.001511 | | | |

Emisson Factors from CT-EMFAC2017

**2023 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_ALA**

| Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.15% | 207 | 2.56E-05 | 9 | 7.11% | 1280 | 1.58E-04 | 17 | 7.38% | 1329 | 1.64E-04 |
| 2 | 0.42% | 75 | 9.30E-06 | 10 | 4.39% | 791 | 9.78E-05 | 18 | 8.17% | 1471 | 1.82E-04 |
| 3 | 0.41% | 73 | 9.08E-06 | 11 | 4.66% | 840 | 1.04E-04 | 19 | 5.70% | 1025 | 1.27E-04 |
| 4 | 0.26% | 47 | 5.86E-06 | 12 | 5.89% | 1060 | 1.31E-04 | 20 | 4.27% | 769 | 9.52E-05 |
| 5 | 0.50% | 90 | 1.11E-05 | 13 | 6.15% | 1107 | 1.37E-04 | 21 | 3.26% | 587 | 7.26E-05 |
| 6 | 0.90% | 163 | 2.01E-05 | 14 | 6.04% | 1087 | 1.34E-04 | 22 | 3.30% | 594 | 7.34E-05 |
| 7 | 3.79% | 683 | 8.45E-05 | 15 | 7.01% | 1262 | 1.56E-04 | 23 | 2.46% | 443 | 5.48E-05 |
| 8 | 7.76% | 1397 | 1.73E-04 | 16 | 7.14% | 1284 | 1.59E-04 | 24 | 1.86% | 336 | 4.15E-05 |
| | | | | | | | | Total | | 18,001 | |

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

| Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.15% | 207 | 2.34E-05 | 9 | 7.11% | 1280 | 1.45E-04 | 17 | 7.38% | 1329 | 1.50E-04 |
| 2 | 0.42% | 75 | 8.49E-06 | 10 | 4.39% | 791 | 8.93E-05 | 18 | 8.17% | 1471 | 1.66E-04 |
| 3 | 0.41% | 73 | 8.29E-06 | 11 | 4.66% | 840 | 9.48E-05 | 19 | 5.70% | 1025 | 1.16E-04 |
| 4 | 0.26% | 47 | 5.35E-06 | 12 | 5.89% | 1060 | 1.20E-04 | 20 | 4.27% | 769 | 8.69E-05 |
| 5 | 0.50% | 90 | 1.02E-05 | 13 | 6.15% | 1107 | 1.25E-04 | 21 | 3.26% | 587 | 6.62E-05 |
| 6 | 0.90% | 163 | 1.84E-05 | 14 | 6.04% | 1087 | 1.23E-04 | 22 | 3.30% | 594 | 6.71E-05 |
| 7 | 3.79% | 683 | 7.71E-05 | 15 | 7.01% | 1262 | 1.43E-04 | 23 | 2.46% | 443 | 5.00E-05 |
| 8 | 7.76% | 1397 | 1.58E-04 | 16 | 7.14% | 1284 | 1.45E-04 | 24 | 1.86% | 336 | 3.79E-05 |
| | | | | | | | | Total | | 18,001 | |

**960 W Hedding St, San Jose, CA - Off-Site Residential**
**Cumulative Operation - The Alameda**
**TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions**
**Year = 2023**

| Road Link | Description | Direction | No. Lanes | Link Length (m) | Link Length (mi) | Link Width (m) | Link Width (ft) | Release Height ( m) | Average Speed (mph) | Average Vehicles per Day |
|---|---|---|---|---|---|---|---|---|---|---|
| TEXH_NB_ALA | The Alameda Northbound | NB | 2 | 474.3 | 0.29 | 13.3 | 44 | 1.3 | 30 | 18,001 |
| TEXH_SB_ALA | The Alameda Southbound | SB | 2 | 433.0 | 0.27 | 13.3 | 44 | 1.3 | 30 | 18,001 |
| | | | | | | | | | Total | 36,002 |

**Emission Factors - TOG Exhaust**

| | | | | |
|---|---|---|---|---|
| **Speed Category** | 1 | 2 | 3 | 4 |
| **Travel Speed (mph)** | 35 | | | |
| **Emissions per Vehicle (g/VMT)** | 0.03086 | | | |

Emisson Factors from CT-EMFAC2017

**2023 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_ALA**

| Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.15% | 207 | 5.24E-04 | 9 | 7.11% | 1280 | 3.23E-03 | 17 | 7.38% | 1329 | 3.36E-03 |
| 2 | 0.42% | 75 | 1.90E-04 | 10 | 4.39% | 791 | 2.00E-03 | 18 | 8.17% | 1471 | 3.72E-03 |
| 3 | 0.41% | 73 | 1.85E-04 | 11 | 4.66% | 840 | 2.12E-03 | 19 | 5.70% | 1025 | 2.59E-03 |
| 4 | 0.26% | 47 | 1.20E-04 | 12 | 5.89% | 1060 | 2.68E-03 | 20 | 4.27% | 769 | 1.94E-03 |
| 5 | 0.50% | 90 | 2.28E-04 | 13 | 6.15% | 1107 | 2.80E-03 | 21 | 3.26% | 587 | 1.48E-03 |
| 6 | 0.90% | 163 | 4.11E-04 | 14 | 6.04% | 1087 | 2.75E-03 | 22 | 3.30% | 594 | 1.50E-03 |
| 7 | 3.79% | 683 | 1.73E-03 | 15 | 7.01% | 1262 | 3.19E-03 | 23 | 2.46% | 443 | 1.12E-03 |
| 8 | 7.76% | 1397 | 3.53E-03 | 16 | 7.14% | 1284 | 3.24E-03 | 24 | 1.86% | 336 | 8.48E-04 |
| | | | | | | | | Total | | 18,001 | |

**2023 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_ALA**

| Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.15% | 207 | 4.78E-04 | 9 | 7.11% | 1280 | 2.95E-03 | 17 | 7.38% | 1329 | 3.07E-03 |
| 2 | 0.42% | 75 | 1.73E-04 | 10 | 4.39% | 791 | 1.82E-03 | 18 | 8.17% | 1471 | 3.39E-03 |
| 3 | 0.41% | 73 | 1.69E-04 | 11 | 4.66% | 840 | 1.94E-03 | 19 | 5.70% | 1025 | 2.37E-03 |
| 4 | 0.26% | 47 | 1.09E-04 | 12 | 5.89% | 1060 | 2.44E-03 | 20 | 4.27% | 769 | 1.77E-03 |
| 5 | 0.50% | 90 | 2.08E-04 | 13 | 6.15% | 1107 | 2.55E-03 | 21 | 3.26% | 587 | 1.35E-03 |
| 6 | 0.90% | 163 | 3.75E-04 | 14 | 6.04% | 1087 | 2.51E-03 | 22 | 3.30% | 594 | 1.37E-03 |
| 7 | 3.79% | 683 | 1.57E-03 | 15 | 7.01% | 1262 | 2.91E-03 | 23 | 2.46% | 443 | 1.02E-03 |
| 8 | 7.76% | 1397 | 3.22E-03 | 16 | 7.14% | 1284 | 2.96E-03 | 24 | 1.86% | 336 | 7.74E-04 |
| | | | | | | | | Total | | 18,001 | |

**960 W Hedding St, San Jose, CA - Off-Site Residential**
**Cumulative Operation - The Alameda**
**TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions**
**Year = 2023**

| Road Link | Description | Direction | No. Lanes | Link Length (m) | Link Length (mi) | Link Width (m) | Link Width (ft) | Release Height ( m) | Average Speed (mph) | Average Vehicles per Day |
|---|---|---|---|---|---|---|---|---|---|---|
| TEVAP_NB_ALA | The Alameda Northbound | NB | 2 | 474.3 | 0.29 | 13.3 | 44 | 1.3 | 30 | 18,001 |
| TEVAP_SB_ALA | The Alameda Southbound | SB | 2 | 433.0 | 0.27 | 13.3 | 44 | 1.3 | 30 | 18,001 |
| | | | | | | | | | Total | 36,002 |

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

| Speed Category | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Travel Speed (mph) | 35 | | | |
| Emissions per Vehicle per Hour (g/hour) | 1.35761 | | | |
| Emissions per Vehicle per Mile (g/VMT) | 0.03879 | | | |

Emisson Factors from CT-EMFAC2017

**2023 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_ALA**

| Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.15% | 207 | 6.58E-04 | 9 | 7.11% | 1280 | 4.06E-03 | 17 | 7.38% | 1329 | 4.22E-03 |
| 2 | 0.42% | 75 | 2.39E-04 | 10 | 4.39% | 791 | 2.51E-03 | 18 | 8.17% | 1471 | 4.67E-03 |
| 3 | 0.41% | 73 | 2.33E-04 | 11 | 4.66% | 840 | 2.67E-03 | 19 | 5.70% | 1025 | 3.26E-03 |
| 4 | 0.26% | 47 | 1.50E-04 | 12 | 5.89% | 1060 | 3.37E-03 | 20 | 4.27% | 769 | 2.44E-03 |
| 5 | 0.50% | 90 | 2.86E-04 | 13 | 6.15% | 1107 | 3.52E-03 | 21 | 3.26% | 587 | 1.86E-03 |
| 6 | 0.90% | 163 | 5.17E-04 | 14 | 6.04% | 1087 | 3.45E-03 | 22 | 3.30% | 594 | 1.89E-03 |
| 7 | 3.79% | 683 | 2.17E-03 | 15 | 7.01% | 1262 | 4.01E-03 | 23 | 2.46% | 443 | 1.41E-03 |
| 8 | 7.76% | 1397 | 4.44E-03 | 16 | 7.14% | 1284 | 4.08E-03 | 24 | 1.86% | 336 | 1.07E-03 |
| | | | | | | | | Total | | 18,001 | |

**2023 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_ALA**

| Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.15% | 207 | 6.01E-04 | 9 | 7.11% | 1280 | 3.71E-03 | 17 | 7.38% | 1329 | 3.85E-03 |
| 2 | 0.42% | 75 | 2.18E-04 | 10 | 4.39% | 791 | 2.29E-03 | 18 | 8.17% | 1471 | 4.26E-03 |
| 3 | 0.41% | 73 | 2.13E-04 | 11 | 4.66% | 840 | 2.43E-03 | 19 | 5.70% | 1025 | 2.97E-03 |
| 4 | 0.26% | 47 | 1.37E-04 | 12 | 5.89% | 1060 | 3.07E-03 | 20 | 4.27% | 769 | 2.23E-03 |
| 5 | 0.50% | 90 | 2.61E-04 | 13 | 6.15% | 1107 | 3.21E-03 | 21 | 3.26% | 587 | 1.70E-03 |
| 6 | 0.90% | 163 | 4.72E-04 | 14 | 6.04% | 1087 | 3.15E-03 | 22 | 3.30% | 594 | 1.72E-03 |
| 7 | 3.79% | 683 | 1.98E-03 | 15 | 7.01% | 1262 | 3.66E-03 | 23 | 2.46% | 443 | 1.28E-03 |
| 8 | 7.76% | 1397 | 4.05E-03 | 16 | 7.14% | 1284 | 3.72E-03 | 24 | 1.86% | 336 | 9.73E-04 |
| | | | | | | | | Total | | 18,001 | |

**960 W Hedding St, San Jose, CA - Off-Site Residential**
**Cumulative Operation - The Alameda**
**Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions**
**Year = 2023**

| Road Link | Description | Direction | No. Lanes | Link Length (m) | Link Length (mi) | Link Width (m) | Link Width (ft) | Release Height ( m) | Average Speed (mph) | Average Vehicles per Day |
|---|---|---|---|---|---|---|---|---|---|---|
| FUG_NB_ALA | The Alameda Northbound | NB | 2 | 474.3 | 0.29 | 13.3 | 44 | 1.3 | 30 | 18,001 |
| FUG_SB_ALA | The Alameda Southbound | SB | 2 | 433.0 | 0.27 | 13.3 | 44 | 1.3 | 30 | 18,001 |
| | | | | | | | | | Total | 36,002 |

**Emission Factors - Fugitive PM2.5**

| Speed Category | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Travel Speed (mph) | 35 | | | |
| Tire Wear - Emissions per Vehicle (g/VMT) | 0.00211 | | | |
| Brake Wear - Emissions per Vehicle (g/VMT) | 0.01681 | | | |
| Road Dust - Emissions per Vehicle (g/VMT) | 0.01486 | | | |
| Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT) | 0.03377 | | | |

Emisson Factors from CT-EMFAC2017

**2023 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_ALA**

| Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.15% | 207 | 5.73E-04 | 9 | 7.11% | 1280 | 3.54E-03 | 17 | 7.38% | 1329 | 3.67E-03 |
| 2 | 0.42% | 75 | 2.08E-04 | 10 | 4.39% | 791 | 2.19E-03 | 18 | 8.17% | 1471 | 4.07E-03 |
| 3 | 0.41% | 73 | 2.03E-04 | 11 | 4.66% | 840 | 2.32E-03 | 19 | 5.70% | 1025 | 2.84E-03 |
| 4 | 0.26% | 47 | 1.31E-04 | 12 | 5.89% | 1060 | 2.93E-03 | 20 | 4.27% | 769 | 2.13E-03 |
| 5 | 0.50% | 90 | 2.49E-04 | 13 | 6.15% | 1107 | 3.06E-03 | 21 | 3.26% | 587 | 1.62E-03 |
| 6 | 0.90% | 163 | 4.50E-04 | 14 | 6.04% | 1087 | 3.00E-03 | 22 | 3.30% | 594 | 1.64E-03 |
| 7 | 3.79% | 683 | 1.89E-03 | 15 | 7.01% | 1262 | 3.49E-03 | 23 | 2.46% | 443 | 1.22E-03 |
| 8 | 7.76% | 1397 | 3.86E-03 | 16 | 7.14% | 1284 | 3.55E-03 | 24 | 1.86% | 336 | 9.28E-04 |
| | | | | | | | | Total | | 18,001 | |

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

| Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.15% | 207 | 5.23E-04 | 9 | 7.11% | 1280 | 3.23E-03 | 17 | 7.38% | 1329 | 3.35E-03 |
| 2 | 0.42% | 75 | 1.90E-04 | 10 | 4.39% | 791 | 2.00E-03 | 18 | 8.17% | 1471 | 3.71E-03 |
| 3 | 0.41% | 73 | 1.85E-04 | 11 | 4.66% | 840 | 2.12E-03 | 19 | 5.70% | 1025 | 2.59E-03 |
| 4 | 0.26% | 47 | 1.20E-04 | 12 | 5.89% | 1060 | 2.68E-03 | 20 | 4.27% | 769 | 1.94E-03 |
| 5 | 0.50% | 90 | 2.27E-04 | 13 | 6.15% | 1107 | 2.79E-03 | 21 | 3.26% | 587 | 1.48E-03 |
| 6 | 0.90% | 163 | 4.11E-04 | 14 | 6.04% | 1087 | 2.74E-03 | 22 | 3.30% | 594 | 1.50E-03 |
| 7 | 3.79% | 683 | 1.72E-03 | 15 | 7.01% | 1262 | 3.19E-03 | 23 | 2.46% | 443 | 1.12E-03 |
| 8 | 7.76% | 1397 | 3.53E-03 | 16 | 7.14% | 1284 | 3.24E-03 | 24 | 1.86% | 336 | 8.47E-04 |
| | | | | | | | | Total | | 18,001 | |

**960 W Hedding St, San Jose, CA - Off-Site Residential**
**Cumulative Operation - W Hedding St**
**DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions**
**Year = 2023**

| Road Link | Description | Direction | No. Lanes | Link Length (m) | Link Length (mi) | Link Width (m) | Link Width (ft) | Release Height ( m) | Average Speed (mph) | Average Vehicles per Day |
|---|---|---|---|---|---|---|---|---|---|---|
| DPM_EB_HED | W Hedding St Eastbound | EB | 1 | 850.1 | 0.53 | 9.7 | 31.7 | 3.4 | 30 | 7,862 |
| DPM_WB_HED | W Hedding St Westbound | WB | 1 | 849.4 | 0.53 | 9.7 | 31.7 | 3.4 | 30 | 7,862 |
| | | | | | | | | | Total | 15,724 |

**Emission Factors**

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

Emisson Factors from CT-EMFAC2017

**2023 Hourly Traffic Volumes and DPM Emissions - DPM_EB_HED**

| Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.91% | 307 | 1.72E-05 | 9 | 6.50% | 511 | 2.86E-05 | 17 | 5.58% | 439 | 2.46E-05 |
| 2 | 2.59% | 203 | 1.14E-05 | 10 | 7.36% | 579 | 3.24E-05 | 18 | 3.28% | 258 | 1.44E-05 |
| 3 | 2.88% | 226 | 1.27E-05 | 11 | 6.33% | 497 | 2.79E-05 | 19 | 2.36% | 185 | 1.04E-05 |
| 4 | 3.34% | 262 | 1.47E-05 | 12 | 6.84% | 538 | 3.02E-05 | 20 | 0.92% | 72 | 4.05E-06 |
| 5 | 2.19% | 172 | 9.63E-06 | 13 | 6.15% | 484 | 2.71E-05 | 21 | 2.99% | 235 | 1.32E-05 |
| 6 | 3.39% | 267 | 1.50E-05 | 14 | 6.15% | 484 | 2.71E-05 | 22 | 4.14% | 326 | 1.82E-05 |
| 7 | 5.98% | 470 | 2.64E-05 | 15 | 5.23% | 411 | 2.31E-05 | 23 | 2.47% | 194 | 1.09E-05 |
| 8 | 4.66% | 366 | 2.05E-05 | 16 | 3.91% | 307 | 1.72E-05 | 24 | 0.86% | 68 | 3.80E-06 |
| | | | | | | | | Total | | 7,862 | |

**2023 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_WB_HED**

| Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.91% | 307 | 1.72E-05 | 9 | 6.50% | 511 | 2.86E-05 | 17 | 5.58% | 439 | 2.46E-05 |
| 2 | 2.59% | 203 | 1.14E-05 | 10 | 7.36% | 579 | 3.24E-05 | 18 | 3.28% | 258 | 1.44E-05 |
| 3 | 2.88% | 226 | 1.27E-05 | 11 | 6.33% | 497 | 2.79E-05 | 19 | 2.36% | 185 | 1.04E-05 |
| 4 | 3.34% | 262 | 1.47E-05 | 12 | 6.84% | 538 | 3.01E-05 | 20 | 0.92% | 72 | 4.05E-06 |
| 5 | 2.19% | 172 | 9.62E-06 | 13 | 6.15% | 484 | 2.71E-05 | 21 | 2.99% | 235 | 1.32E-05 |
| 6 | 3.39% | 267 | 1.49E-05 | 14 | 6.15% | 484 | 2.71E-05 | 22 | 4.14% | 326 | 1.82E-05 |
| 7 | 5.98% | 470 | 2.63E-05 | 15 | 5.23% | 411 | 2.30E-05 | 23 | 2.47% | 194 | 1.09E-05 |
| 8 | 4.66% | 366 | 2.05E-05 | 16 | 3.91% | 307 | 1.72E-05 | 24 | 0.86% | 68 | 3.80E-06 |
| | | | | | | | | Total | | 7,862 | |

**960 W Hedding St, San Jose, CA - Off-Site Residential**
**Cumulative Operation - W Hedding St**
**PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions**
**Year = 2023**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| PM2.5_EB_HED | W Hedding St Eastbound | EB | 1 | 850.1 | 0.53 | 9.7 | 32 | 1.3 | 30 | 7,862 |
| PM2.5_WB_HED | W Hedding St Westbound | WB | 1 | 849.4 | 0.53 | 9.7 | 32 | 1.3 | 30 | 7,862 |
| | | | | | | | | | Total | 15,724 |

**Emission Factors - PM2.5**

| | | | | |
|---|---|---|---|---|
| **Speed Category** | 1 | 2 | 3 | 4 |
| **Travel Speed (mph)** | 25 | | | |
| **Emissions per Vehicle (g/VMT)** | 0.002194 | | | |

Emisson Factors from CT-EMFAC2017

**2023 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_EB_HED**

| Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.15% | 91 | 2.91E-05 | 9 | 7.11% | 559 | 1.80E-04 | 17 | 7.38% | 581 | 1.87E-04 |
| 2 | 0.42% | 33 | 1.06E-05 | 10 | 4.39% | 345 | 1.11E-04 | 18 | 8.17% | 642 | 2.07E-04 |
| 3 | 0.41% | 32 | 1.03E-05 | 11 | 4.66% | 367 | 1.18E-04 | 19 | 5.70% | 448 | 1.44E-04 |
| 4 | 0.26% | 21 | 6.66E-06 | 12 | 5.89% | 463 | 1.49E-04 | 20 | 4.27% | 336 | 1.08E-04 |
| 5 | 0.50% | 39 | 1.27E-05 | 13 | 6.15% | 484 | 1.56E-04 | 21 | 3.26% | 256 | 8.25E-05 |
| 6 | 0.90% | 71 | 2.29E-05 | 14 | 6.04% | 475 | 1.53E-04 | 22 | 3.30% | 259 | 8.35E-05 |
| 7 | 3.79% | 298 | 9.60E-05 | 15 | 7.01% | 551 | 1.77E-04 | 23 | 2.46% | 193 | 6.22E-05 |
| 8 | 7.76% | 610 | 1.96E-04 | 16 | 7.14% | 561 | 1.81E-04 | 24 | 1.86% | 147 | 4.72E-05 |
| | | | | | | | | Total | | 7,862 | |

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

| Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.15% | 91 | 2.91E-05 | 9 | 7.11% | 559 | 1.80E-04 | 17 | 7.38% | 581 | 1.87E-04 |
| 2 | 0.42% | 33 | 1.06E-05 | 10 | 4.39% | 345 | 1.11E-04 | 18 | 8.17% | 642 | 2.07E-04 |
| 3 | 0.41% | 32 | 1.03E-05 | 11 | 4.66% | 367 | 1.18E-04 | 19 | 5.70% | 448 | 1.44E-04 |
| 4 | 0.26% | 21 | 6.66E-06 | 12 | 5.89% | 463 | 1.49E-04 | 20 | 4.27% | 336 | 1.08E-04 |
| 5 | 0.50% | 39 | 1.27E-05 | 13 | 6.15% | 484 | 1.56E-04 | 21 | 3.26% | 256 | 8.24E-05 |
| 6 | 0.90% | 71 | 2.29E-05 | 14 | 6.04% | 475 | 1.53E-04 | 22 | 3.30% | 259 | 8.34E-05 |
| 7 | 3.79% | 298 | 9.59E-05 | 15 | 7.01% | 551 | 1.77E-04 | 23 | 2.46% | 193 | 6.22E-05 |
| 8 | 7.76% | 610 | 1.96E-04 | 16 | 7.14% | 561 | 1.80E-04 | 24 | 1.86% | 147 | 4.71E-05 |
| | | | | | | | | Total | | 7,862 | |

**960 W Hedding St, San Jose, CA - Off-Site Residential**
**Cumulative Operation - W Hedding St**
**TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions**
**Year = 2023**

| Road Link | Description | Direction | No. Lanes | Link Length (m) | Link Length (mi) | Link Width (m) | Link Width (ft) | Release Height ( m) | Average Speed (mph) | Average Vehicles per Day |
|---|---|---|---|---|---|---|---|---|---|---|
| TEXH_EB_HED | W Hedding St Eastbound | EB | 1 | 850.1 | 0.53 | 9.7 | 32 | 1.3 | 30 | 7,862 |
| TEXH_WB_HED | W Hedding St Westbound | WB | 1 | 849.4 | 0.53 | 9.7 | 32 | 1.3 | 30 | 7,862 |
| | | | | | | | | | Total | 15,724 |

**Emission Factors - TOG Exhaust**

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

Emisson Factors from CT-EMFAC2017

**2023 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_EB_HED**

| Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.15% | 91 | 6.13E-04 | 9 | 7.11% | 559 | 3.79E-03 | 17 | 7.38% | 581 | 3.93E-03 |
| 2 | 0.42% | 33 | 2.22E-04 | 10 | 4.39% | 345 | 2.34E-03 | 18 | 8.17% | 642 | 4.35E-03 |
| 3 | 0.41% | 32 | 2.17E-04 | 11 | 4.66% | 367 | 2.48E-03 | 19 | 5.70% | 448 | 3.03E-03 |
| 4 | 0.26% | 21 | 1.40E-04 | 12 | 5.89% | 463 | 3.14E-03 | 20 | 4.27% | 336 | 2.28E-03 |
| 5 | 0.50% | 39 | 2.67E-04 | 13 | 6.15% | 484 | 3.28E-03 | 21 | 3.26% | 256 | 1.74E-03 |
| 6 | 0.90% | 71 | 4.82E-04 | 14 | 6.04% | 475 | 3.22E-03 | 22 | 3.30% | 259 | 1.76E-03 |
| 7 | 3.79% | 298 | 2.02E-03 | 15 | 7.01% | 551 | 3.74E-03 | 23 | 2.46% | 193 | 1.31E-03 |
| 8 | 7.76% | 610 | 4.14E-03 | 16 | 7.14% | 561 | 3.80E-03 | 24 | 1.86% | 147 | 9.93E-04 |
| | | | | | | | | Total | | 7,862 | |

**2023 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_WB_HED**

| Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.15% | 91 | 6.13E-04 | 9 | 7.11% | 559 | 3.79E-03 | 17 | 7.38% | 581 | 3.93E-03 |
| 2 | 0.42% | 33 | 2.22E-04 | 10 | 4.39% | 345 | 2.34E-03 | 18 | 8.17% | 642 | 4.35E-03 |
| 3 | 0.41% | 32 | 2.17E-04 | 11 | 4.66% | 367 | 2.48E-03 | 19 | 5.70% | 448 | 3.03E-03 |
| 4 | 0.26% | 21 | 1.40E-04 | 12 | 5.89% | 463 | 3.13E-03 | 20 | 4.27% | 336 | 2.27E-03 |
| 5 | 0.50% | 39 | 2.66E-04 | 13 | 6.15% | 484 | 3.27E-03 | 21 | 3.26% | 256 | 1.73E-03 |
| 6 | 0.90% | 71 | 4.81E-04 | 14 | 6.04% | 475 | 3.21E-03 | 22 | 3.30% | 259 | 1.76E-03 |
| 7 | 3.79% | 298 | 2.02E-03 | 15 | 7.01% | 551 | 3.73E-03 | 23 | 2.46% | 193 | 1.31E-03 |
| 8 | 7.76% | 610 | 4.13E-03 | 16 | 7.14% | 561 | 3.80E-03 | 24 | 1.86% | 147 | 9.92E-04 |
| | | | | | | | | Total | | 7,862 | |

**960 W Hedding St, San Jose, CA - Off-Site Residential**
**Cumulative Operation - W Hedding St**
**TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions**
**Year = 2023**

| Road Link | Description | Direction | No. Lanes | Link Length (m) | Link Length (mi) | Link Width (m) | Link Width (ft) | Release Height ( m) | Average Speed (mph) | Average Vehicles per Day |
|---|---|---|---|---|---|---|---|---|---|---|
| TEVAP_EB_HED | W Hedding St Eastbound | EB | 1 | 850.1 | 0.53 | 9.7 | 32 | 1.3 | 30 | 7,862 |
| TEVAP_WB_HED | W Hedding St Westbound | WB | 1 | 849.4 | 0.53 | 9.7 | 32 | 1.3 | 30 | 7,862 |
| | | | | | | | | | Total | 15,724 |

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

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

Emisson Factors from CT-EMFAC2017

**2023 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_EB_HED**

| Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.15% | 91 | 7.21E-04 | 9 | 7.11% | 559 | 4.45E-03 | 17 | 7.38% | 581 | 4.63E-03 |
| 2 | 0.42% | 33 | 2.62E-04 | 10 | 4.39% | 345 | 2.75E-03 | 18 | 8.17% | 642 | 5.12E-03 |
| 3 | 0.41% | 32 | 2.55E-04 | 11 | 4.66% | 367 | 2.92E-03 | 19 | 5.70% | 448 | 3.57E-03 |
| 4 | 0.26% | 21 | 1.65E-04 | 12 | 5.89% | 463 | 3.69E-03 | 20 | 4.27% | 336 | 2.68E-03 |
| 5 | 0.50% | 39 | 3.14E-04 | 13 | 6.15% | 484 | 3.85E-03 | 21 | 3.26% | 256 | 2.04E-03 |
| 6 | 0.90% | 71 | 5.66E-04 | 14 | 6.04% | 475 | 3.78E-03 | 22 | 3.30% | 259 | 2.07E-03 |
| 7 | 3.79% | 298 | 2.38E-03 | 15 | 7.01% | 551 | 4.39E-03 | 23 | 2.46% | 193 | 1.54E-03 |
| 8 | 7.76% | 610 | 4.86E-03 | 16 | 7.14% | 561 | 4.47E-03 | 24 | 1.86% | 147 | 1.17E-03 |
| | | | | | | | | Total | | 7,862 | |

**2023 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_WB_HED**

| Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.15% | 91 | 7.21E-04 | 9 | 7.11% | 559 | 4.45E-03 | 17 | 7.38% | 581 | 4.62E-03 |
| 2 | 0.42% | 33 | 2.61E-04 | 10 | 4.39% | 345 | 2.75E-03 | 18 | 8.17% | 642 | 5.12E-03 |
| 3 | 0.41% | 32 | 2.55E-04 | 11 | 4.66% | 367 | 2.92E-03 | 19 | 5.70% | 448 | 3.57E-03 |
| 4 | 0.26% | 21 | 1.65E-04 | 12 | 5.89% | 463 | 3.69E-03 | 20 | 4.27% | 336 | 2.68E-03 |
| 5 | 0.50% | 39 | 3.13E-04 | 13 | 6.15% | 484 | 3.85E-03 | 21 | 3.26% | 256 | 2.04E-03 |
| 6 | 0.90% | 71 | 5.66E-04 | 14 | 6.04% | 475 | 3.78E-03 | 22 | 3.30% | 259 | 2.06E-03 |
| 7 | 3.79% | 298 | 2.37E-03 | 15 | 7.01% | 551 | 4.39E-03 | 23 | 2.46% | 193 | 1.54E-03 |
| 8 | 7.76% | 610 | 4.86E-03 | 16 | 7.14% | 561 | 4.47E-03 | 24 | 1.86% | 147 | 1.17E-03 |
| | | | | | | | | Total | | 7,862 | |

**960 W Hedding St, San Jose, CA - Off-Site Residential**
**Cumulative Operation - W Hedding St**
**Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions**
**Year = 2023**

| Road Link | Description | Direction | No. Lanes | Link Length (m) | Link Length (mi) | Link Width (m) | Link Width (ft) | Release Height ( m) | Average Speed (mph) | Average Vehicles per Day |
|---|---|---|---|---|---|---|---|---|---|---|
| FUG_EB_HED | W Hedding St Eastbound | EB | 1 | 850.1 | 0.53 | 9.7 | 32 | 1.3 | 30 | 7,862 |
| FUG_WB_HED | W Hedding St Westbound | WB | 1 | 849.4 | 0.53 | 9.7 | 32 | 1.3 | 30 | 7,862 |
| | | | | | | | | | Total | 15,724 |

**Emission Factors - Fugitive PM2.5**

| Speed Category | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Travel Speed (mph) | 25 | | | |
| Tire Wear - Emissions per Vehicle (g/VMT) | 0.00211 | | | |
| Brake Wear - Emissions per Vehicle (g/VMT) | 0.01681 | | | |
| Road Dust - Emissions per Vehicle (g/VMT) | 0.01486 | | | |
| tal Fugitive PM2.5 - Emissions per Vehicle (g/VMT) | 0.03377 | | | |

Emisson Factors from CT-EMFAC2017

**2023 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_EB_HED**

| Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s | Hour | % Per Hour | VPH | g/s |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.15% | 91 | 4.49E-04 | 9 | 7.11% | 559 | 2.77E-03 | 17 | 7.38% | 581 | 2.88E-03 |
| 2 | 0.42% | 33 | 1.63E-04 | 10 | 4.39% | 345 | 1.71E-03 | 18 | 8.17% | 642 | 3.18E-03 |
| 3 | 0.41% | 32 | 1.59E-04 | 11 | 4.66% | 367 | 1.82E-03 | 19 | 5.70% | 448 | 2.22E-03 |
| 4 | 0.26% | 21 | 1.03E-04 | 12 | 5.89% | 463 | 2.29E-03 | 20 | 4.27% | 336 | 1.67E-03 |
| 5 | 0.50% | 39 | 1.95E-04 | 13 | 6.15% | 484 | 2.40E-03 | 21 | 3.26% | 256 | 1.27E-03 |
| 6 | 0.90% | 71 | 3.52E-04 | 14 | 6.04% | 475 | 2.35E-03 | 22 | 3.30% | 259 | 1.28E-03 |
| 7 | 3.79% | 298 | 1.48E-03 | 15 | 7.01% | 551 | 2.73E-03 | 23 | 2.46% | 193 | 9.58E-04 |
| 8 | 7.76% | 610 | 3.02E-03 | 16 | 7.14% | 561 | 2.78E-03 | 24 | 1.86% | 147 | 7.26E-04 |
| | | | | | | | | Total | | 7,862 | |

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

| Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile | Hour | % Per Hour | VPH | g/mile |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.15% | 91 | 4.48E-04 | 9 | 7.11% | 559 | 2.77E-03 | 17 | 7.38% | 581 | 2.87E-03 |
| 2 | 0.42% | 33 | 1.63E-04 | 10 | 4.39% | 345 | 1.71E-03 | 18 | 8.17% | 642 | 3.18E-03 |
| 3 | 0.41% | 32 | 1.59E-04 | 11 | 4.66% | 367 | 1.82E-03 | 19 | 5.70% | 448 | 2.22E-03 |
| 4 | 0.26% | 21 | 1.02E-04 | 12 | 5.89% | 463 | 2.29E-03 | 20 | 4.27% | 336 | 1.66E-03 |
| 5 | 0.50% | 39 | 1.95E-04 | 13 | 6.15% | 484 | 2.39E-03 | 21 | 3.26% | 256 | 1.27E-03 |
| 6 | 0.90% | 71 | 3.52E-04 | 14 | 6.04% | 475 | 2.35E-03 | 22 | 3.30% | 259 | 1.28E-03 |
| 7 | 3.79% | 298 | 1.48E-03 | 15 | 7.01% | 551 | 2.73E-03 | 23 | 2.46% | 193 | 9.57E-04 |
| 8 | 7.76% | 610 | 3.02E-03 | 16 | 7.14% | 561 | 2.78E-03 | 24 | 1.86% | 147 | 7.26E-04 |
| | | | | | | | | Total | | 7,862 | |

**960 W Hedding St, San Jose, CA - The Alameda Traffic - TACs & PM2.5**
**AERMOD Risk Modeling Parameters and Maximum Concentrations**
**at Construction Residential MEI Receptor (1.5 meter receptor height)**

| | |
|---|---|
| **Emission Year** | 2023 |
| **Receptor Information** | Construction Residential MEI receptor |
| Number of Receptors | 1 |
| Receptor Height | 1.5 meters |
| Receptor Distances | At Construction Residential MEI location |
| | |
| **Meteorological Conditions** | |
| BAAQMD San Jose International Met Data | 2013-2017 |
| Land Use Classification | Urban |
| Wind Speed | Variable |
| Wind Direction | Variable |

**Construction Residential MEI Cancer Risk Maximum Concentrations**

| Meteorological Data Years | Concentration (µg/m3)* | | |
|---|---|---|---|
| | DPM | Exhaust TOG | Evaporative TOG |
| 2013-2017 | 0.0002 | 0.0129 | 0.0163 |

**Construction Residential MEI PM2.5 Maximum Concentrations**

| Meteorological Data Years | PM2.5 Concentration (µg/m3)* | | |
|---|---|---|---|
| | Total PM2.5 | Fugitive PM2.5 | Vehicle PM2.5 |
| 2013-2017 | 0.0148 | 0.0142 | 0.0006 |

**960 W Hedding St, San Jose, CA - The Alameda Traffic Cancer Risk**
**Impacts at Construction Residential MEI - 1.5 meter receptor height**
**30 Year Residential Exposure**

**Cancer Risk Calculation Method**

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-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 (µg/$m^3$)
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-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* | 2023 | 10 | 0.0002 | 0.0129 | 0.0163 | 0.002 | 0.001 | 0.0001 | 0.00 |
| 1 | 1 | 0 - 1 | 2023 | 10 | 0.0002 | 0.0129 | 0.0163 | 0.030 | 0.012 | 0.0009 | 0.04 |
| 2 | 1 | 1 - 2 | 2024 | 10 | 0.0002 | 0.0129 | 0.0163 | 0.030 | 0.012 | 0.0009 | 0.04 |
| 3 | 1 | 2 - 3 | 2025 | 3 | 0.0002 | 0.0129 | 0.0163 | 0.005 | 0.002 | 0.0001 | 0.01 |
| 4 | 1 | 3 - 4 | 2026 | 3 | 0.0002 | 0.0129 | 0.0163 | 0.005 | 0.002 | 0.0001 | 0.01 |
| 5 | 1 | 4 - 5 | 2027 | 3 | 0.0002 | 0.0129 | 0.0163 | 0.005 | 0.002 | 0.0001 | 0.01 |
| 6 | 1 | 5 - 6 | 2028 | 3 | 0.0002 | 0.0129 | 0.0163 | 0.005 | 0.002 | 0.0001 | 0.01 |
| 7 | 1 | 6 - 7 | 2029 | 3 | 0.0002 | 0.0129 | 0.0163 | 0.005 | 0.002 | 0.0001 | 0.01 |
| 8 | 1 | 7 - 8 | 2030 | 3 | 0.0002 | 0.0129 | 0.0163 | 0.005 | 0.002 | 0.0001 | 0.01 |
| 9 | 1 | 8 - 9 | 2031 | 3 | 0.0002 | 0.0129 | 0.0163 | 0.005 | 0.002 | 0.0001 | 0.01 |
| 10 | 1 | 9 - 10 | 2032 | 3 | 0.0002 | 0.0129 | 0.0163 | 0.005 | 0.002 | 0.0001 | 0.01 |
| 11 | 1 | 10 - 11 | 2033 | 3 | 0.0002 | 0.0129 | 0.0163 | 0.005 | 0.002 | 0.0001 | 0.01 |
| 12 | 1 | 11 - 12 | 2034 | 3 | 0.0002 | 0.0129 | 0.0163 | 0.005 | 0.002 | 0.0001 | 0.01 |
| 13 | 1 | 12 - 13 | 2035 | 3 | 0.0002 | 0.0129 | 0.0163 | 0.005 | 0.002 | 0.0001 | 0.01 |
| 14 | 1 | 13 - 14 | 2036 | 3 | 0.0002 | 0.0129 | 0.0163 | 0.005 | 0.002 | 0.0001 | 0.01 |
| 15 | 1 | 14 - 15 | 2037 | 3 | 0.0002 | 0.0129 | 0.0163 | 0.005 | 0.002 | 0.0001 | 0.01 |
| 16 | 1 | 15 - 16 | 2038 | 3 | 0.0002 | 0.0129 | 0.0163 | 0.005 | 0.002 | 0.0001 | 0.01 |
| 17 | 1 | 16-17 | 2039 | 1 | 0.0002 | 0.0129 | 0.0163 | 0.001 | 0.000 | 0.0000 | 0.00 |
| 18 | 1 | 17-18 | 2040 | 1 | 0.0002 | 0.0129 | 0.0163 | 0.001 | 0.000 | 0.0000 | 0.00 |
| 19 | 1 | 18-19 | 2041 | 1 | 0.0002 | 0.0129 | 0.0163 | 0.001 | 0.000 | 0.0000 | 0.00 |
| 20 | 1 | 19-20 | 2042 | 1 | 0.0002 | 0.0129 | 0.0163 | 0.001 | 0.000 | 0.0000 | 0.00 |
| 21 | 1 | 20-21 | 2043 | 1 | 0.0002 | 0.0129 | 0.0163 | 0.001 | 0.000 | 0.0000 | 0.00 |
| 22 | 1 | 21-22 | 2044 | 1 | 0.0002 | 0.0129 | 0.0163 | 0.001 | 0.000 | 0.0000 | 0.00 |
| 23 | 1 | 22-23 | 2045 | 1 | 0.0002 | 0.0129 | 0.0163 | 0.001 | 0.000 | 0.0000 | 0.00 |
| 24 | 1 | 23-24 | 2046 | 1 | 0.0002 | 0.0129 | 0.0163 | 0.001 | 0.000 | 0.0000 | 0.00 |
| 25 | 1 | 24-25 | 2047 | 1 | 0.0002 | 0.0129 | 0.0163 | 0.001 | 0.000 | 0.0000 | 0.00 |
| 26 | 1 | 25-26 | 2048 | 1 | 0.0002 | 0.0129 | 0.0163 | 0.001 | 0.000 | 0.0000 | 0.00 |
| 27 | 1 | 26-27 | 2049 | 1 | 0.0002 | 0.0129 | 0.0163 | 0.001 | 0.000 | 0.0000 | 0.00 |
| 28 | 1 | 27-28 | 2050 | 1 | 0.0002 | 0.0129 | 0.0163 | 0.001 | 0.000 | 0.0000 | 0.00 |
| 29 | 1 | 28-29 | 2051 | 1 | 0.0002 | 0.0129 | 0.0163 | 0.001 | 0.000 | 0.0000 | 0.00 |
| 30 | 1 | 29-30 | 2052 | 1 | 0.0002 | 0.0129 | 0.0163 | 0.001 | 0.000 | 0.0000 | 0.00 |
| **Total Increased Cancer Risk** | | | | | | | | 0.13 | 0.055 | 0.004 | **0.19** |

| Maximum Hazard Index | Maximum Fugitive PM2.5 | Total PM2.5 |
|---|---|---|
| 0.00004 | 0.01 | 0.01 |

* Third trimester of pregnancy

**960 W Hedding St, San Jose, CA - W Hedding St Traffic - TACs & PM2.5**
**AERMOD Risk Modeling Parameters and Maximum Concentrations**
**at Construction Residential MEI Receptor (1.5 meter receptor height)**

| | |
|---|---|
| **Emission Year** | 2023 |
| **Receptor Information** | Construction Residential MEI receptor |
| Number of Receptors | 1 |
| Receptor Height | 1.5 meters |
| Receptor Distances | At Construction Residential MEI location |
| | |
| **Meteorological Conditions** | |
| BAAQMD San Jose International Met Data | 2013-2017 |
| Land Use Classification | Urban |
| Wind Speed | Variable |
| Wind Direction | Variable |

**Construction Residential MEI Cancer Risk Maximum Concentrations**

| Meteorological Data Years | Concentration (µg/m3)* | | |
|---|---|---|---|
| | DPM | Exhaust TOG | Evaporative TOG |
| 2013-2017 | 0.0005 | 0.0606 | 0.0712 |

**Construction Residential MEI PM2.5 Maximum Concentrations**

| Meteorological Data Years | PM2.5 Concentration (µg/m3)* | | |
|---|---|---|---|
| | Total PM2.5 | Fugitive PM2.5 | Vehicle PM2.5 |
| 2013-2017 | 0.0471 | 0.0442 | 0.0029 |

**960 W Hedding St, San Jose, CA - W Hedding St Traffic Cancer Risk**
**Impacts at Construction Residential MEI - 1.5 meter receptor height**
**30 Year Residential Exposure**

**Cancer Risk Calculation Method**

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-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 (µg/$m^3$)
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-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

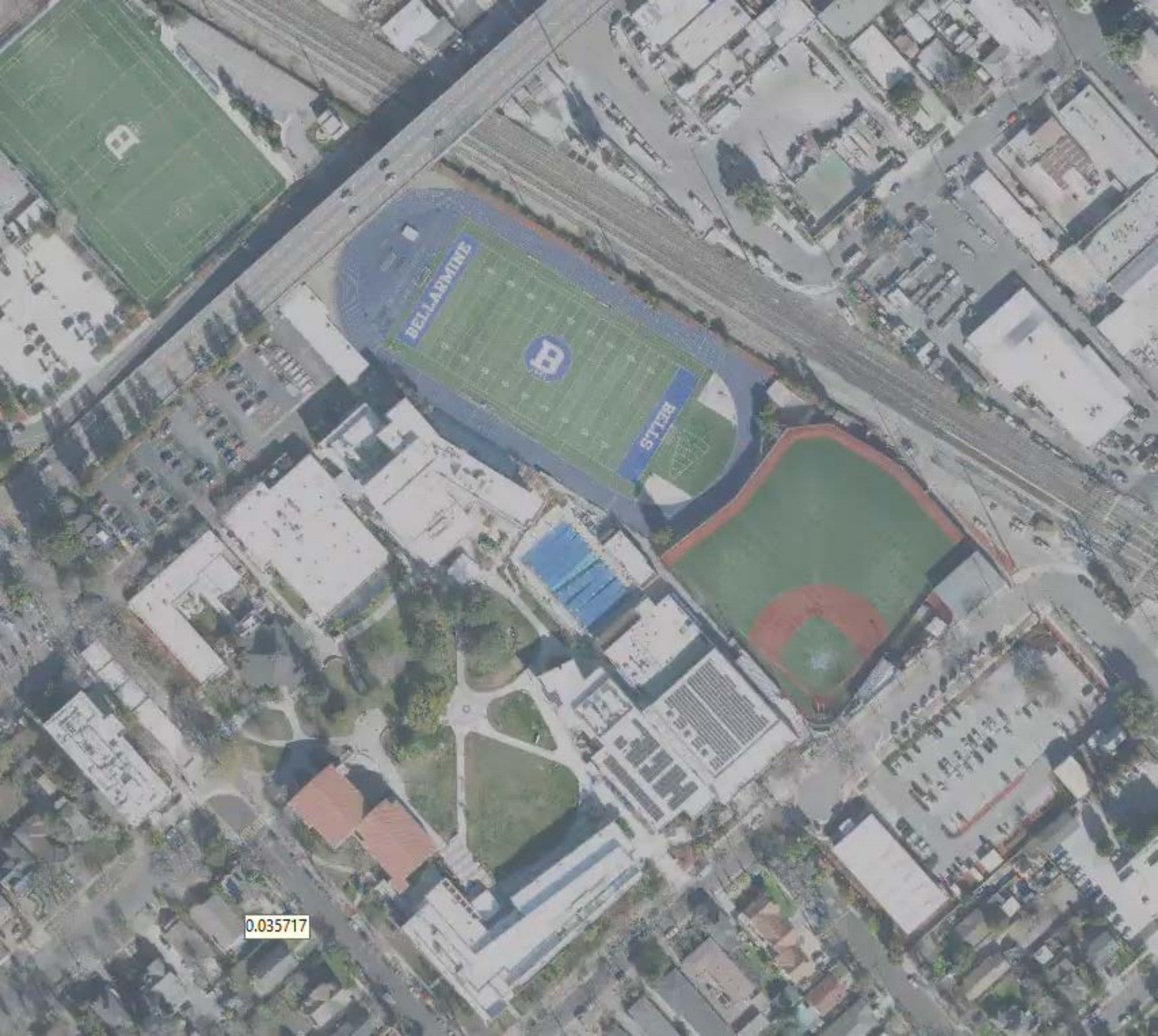
**Construction Cancer Risk by Year - Maximum Impact Receptor Location**

| 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* | 2023 | 10 | 0.0005 | 0.0606 | 0.0712 | 0.007 | 0.005 | 0.0003 | 0.01 |
| 1 | 1 | 0 - 1 | 2023 | 10 | 0.0005 | 0.0606 | 0.0712 | 0.080 | 0.057 | 0.0039 | 0.14 |
| 2 | 1 | 1 - 2 | 2024 | 10 | 0.0005 | 0.0606 | 0.0712 | 0.080 | 0.057 | 0.0039 | 0.14 |
| 3 | 1 | 2 - 3 | 2025 | 3 | 0.0005 | 0.0606 | 0.0712 | 0.013 | 0.009 | 0.0006 | 0.02 |
| 4 | 1 | 3 - 4 | 2026 | 3 | 0.0005 | 0.0606 | 0.0712 | 0.013 | 0.009 | 0.0006 | 0.02 |
| 5 | 1 | 4 - 5 | 2027 | 3 | 0.0005 | 0.0606 | 0.0712 | 0.013 | 0.009 | 0.0006 | 0.02 |
| 6 | 1 | 5 - 6 | 2028 | 3 | 0.0005 | 0.0606 | 0.0712 | 0.013 | 0.009 | 0.0006 | 0.02 |
| 7 | 1 | 6 - 7 | 2029 | 3 | 0.0005 | 0.0606 | 0.0712 | 0.013 | 0.009 | 0.0006 | 0.02 |
| 8 | 1 | 7 - 8 | 2030 | 3 | 0.0005 | 0.0606 | 0.0712 | 0.013 | 0.009 | 0.0006 | 0.02 |
| 9 | 1 | 8 - 9 | 2031 | 3 | 0.0005 | 0.0606 | 0.0712 | 0.013 | 0.009 | 0.0006 | 0.02 |
| 10 | 1 | 9 - 10 | 2032 | 3 | 0.0005 | 0.0606 | 0.0712 | 0.013 | 0.009 | 0.0006 | 0.02 |
| 11 | 1 | 10 - 11 | 2033 | 3 | 0.0005 | 0.0606 | 0.0712 | 0.013 | 0.009 | 0.0006 | 0.02 |
| 12 | 1 | 11 - 12 | 2034 | 3 | 0.0005 | 0.0606 | 0.0712 | 0.013 | 0.009 | 0.0006 | 0.02 |
| 13 | 1 | 12 - 13 | 2035 | 3 | 0.0005 | 0.0606 | 0.0712 | 0.013 | 0.009 | 0.0006 | 0.02 |
| 14 | 1 | 13 - 14 | 2036 | 3 | 0.0005 | 0.0606 | 0.0712 | 0.013 | 0.009 | 0.0006 | 0.02 |
| 15 | 1 | 14 - 15 | 2037 | 3 | 0.0005 | 0.0606 | 0.0712 | 0.013 | 0.009 | 0.0006 | 0.02 |
| 16 | 1 | 15 - 16 | 2038 | 3 | 0.0005 | 0.0606 | 0.0712 | 0.013 | 0.009 | 0.0006 | 0.02 |
| 17 | 1 | 16-17 | 2039 | 1 | 0.0005 | 0.0606 | 0.0712 | 0.001 | 0.001 | 0.0001 | 0.00 |
| 18 | 1 | 17-18 | 2040 | 1 | 0.0005 | 0.0606 | 0.0712 | 0.001 | 0.001 | 0.0001 | 0.00 |
| 19 | 1 | 18-19 | 2041 | 1 | 0.0005 | 0.0606 | 0.0712 | 0.001 | 0.001 | 0.0001 | 0.00 |
| 20 | 1 | 19-20 | 2042 | 1 | 0.0005 | 0.0606 | 0.0712 | 0.001 | 0.001 | 0.0001 | 0.00 |
| 21 | 1 | 20-21 | 2043 | 1 | 0.0005 | 0.0606 | 0.0712 | 0.001 | 0.001 | 0.0001 | 0.00 |
| 22 | 1 | 21-22 | 2044 | 1 | 0.0005 | 0.0606 | 0.0712 | 0.001 | 0.001 | 0.0001 | 0.00 |
| 23 | 1 | 22-23 | 2045 | 1 | 0.0005 | 0.0606 | 0.0712 | 0.001 | 0.001 | 0.0001 | 0.00 |
| 24 | 1 | 23-24 | 2046 | 1 | 0.0005 | 0.0606 | 0.0712 | 0.001 | 0.001 | 0.0001 | 0.00 |
| 25 | 1 | 24-25 | 2047 | 1 | 0.0005 | 0.0606 | 0.0712 | 0.001 | 0.001 | 0.0001 | 0.00 |
| 26 | 1 | 25-26 | 2048 | 1 | 0.0005 | 0.0606 | 0.0712 | 0.001 | 0.001 | 0.0001 | 0.00 |
| 27 | 1 | 26-27 | 2049 | 1 | 0.0005 | 0.0606 | 0.0712 | 0.001 | 0.001 | 0.0001 | 0.00 |
| 28 | 1 | 27-28 | 2050 | 1 | 0.0005 | 0.0606 | 0.0712 | 0.001 | 0.001 | 0.0001 | 0.00 |
| 29 | 1 | 28-29 | 2051 | 1 | 0.0005 | 0.0606 | 0.0712 | 0.001 | 0.001 | 0.0001 | 0.00 |
| 30 | 1 | 29-30 | 2052 | 1 | 0.0005 | 0.0606 | 0.0712 | 0.001 | 0.001 | 0.0001 | 0.00 |
| **Total Increased Cancer Risk** | | | | | | | | 0.36 | 0.257 | 0.018 | **0.64** |

| **Maximum Hazard Index** | **Maximum Fugitive PM2.5** | **Total PM2.5** |
|---|---|---|
| 0.00010 | 0.04 | 0.05 |

* Third trimester of pregnancy


20.672348


BELLARMINE
BELLS
0.035717

# 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** | **11/30/2022** |
| **Contact Name** | Zachary Palm |
| **Affiliation** | Illingworth & Rodkin, Inc. |
| **Phone** | 707-794-0400 x117 |
| **Email** | zpalm@illingworthrodkin.com |
| **Project Name** | Bellarmine College Prep |
| **Address** | 960 W Hedding St |
| **City** | San Jose |
| **County** | Santa Clara |
| **Type (residential, commercial, mixed use, industrial, etc.)** | Office/School |
| **Project Size (# of units or building square feet)** | 1750 students |
| **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 E[illegible] 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 [illegible]lue section only.

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

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

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

**Submit forms, maps, and questions to Areana Flores at 415-749-4616, or aflores@baaqmd.gov**

## Table B: Google Earth data

| Distance from Receptor (feet) or MEI[1] | Plant No. | Facility Name | Address | Cancer Risk[2] | Hazard Risk[2] | $PM_{2.5}$[2] | Source No.[3] | Type of Source[4] | Fuel Code[5] | Status/Comments | Construction MEIs: Distance Adjustment Multiplier | Adjusted Cancer Risk Estimate | Adjusted Hazard Risk | Adjusted PM2.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000+ | 18418 | Golden Gate Petroleum Company | 905 Stockton Avenue | 0.00 | 0.00 | 0.68 | | No Data | | 2020 Dataset | 0.13 | 0.00 | 0.000 | 0.09 |
| 1000+ | 109919_1 | Wattis Construction Co Inc | 964 Stockton Ave | 0.04 | 0.00 | 0.00 | | Gas Dispensing Facility | | 2020 Dataset | 0.02 | 0.00 | 0.000 | 0.00 |

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
    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 the number of years perc use will continue after the project's residents or other sensitive receptors (such as students, patients, etc) take occupancy.
    e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
    f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    g. This spray booth is considered to be insignificant.

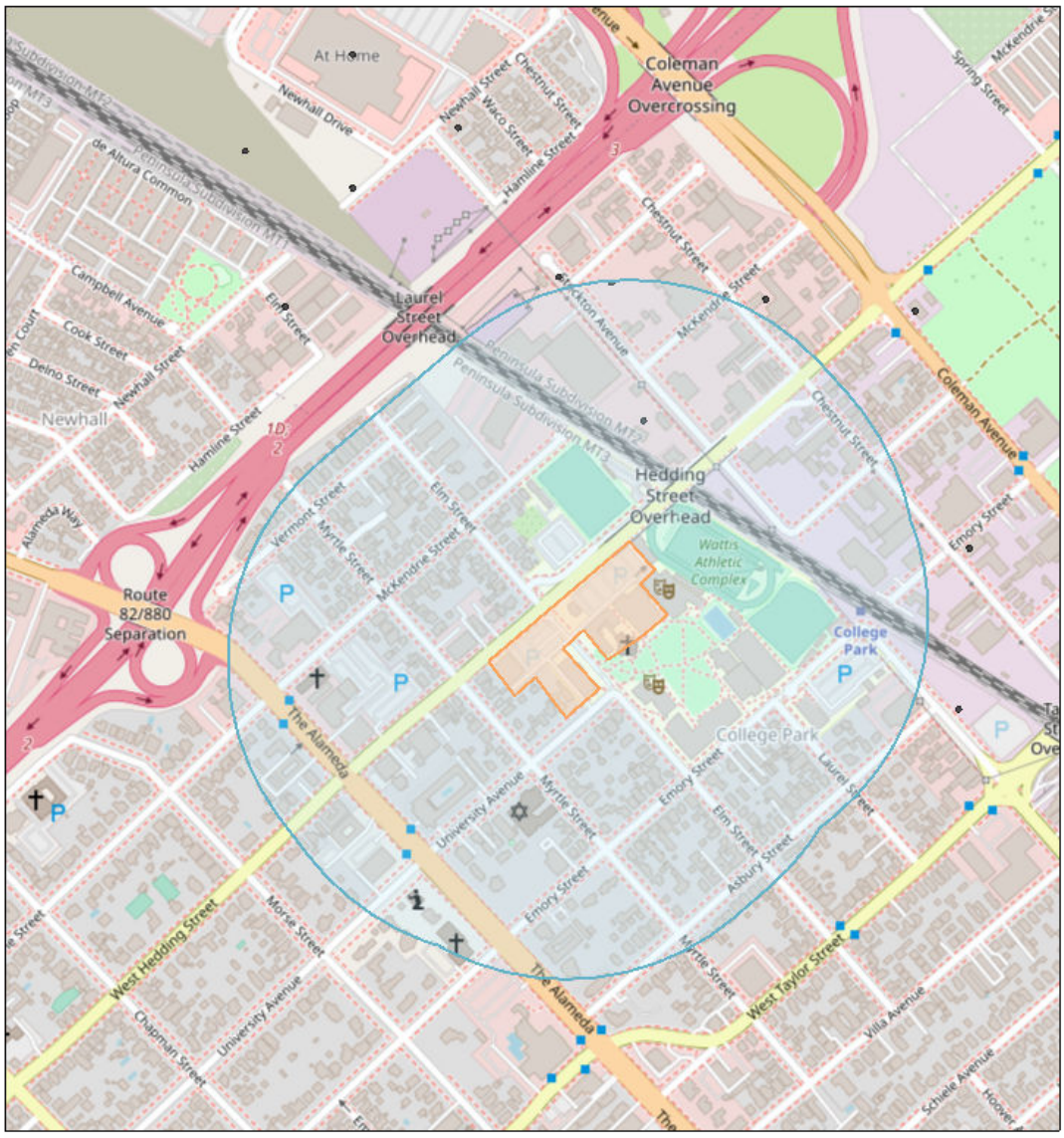
Date last updated:
03/13/2018

# Screening Report

## Area of Interest (AOI) Information

Area : 6,562,907.88 ft²

Nov 30 2022 16:08:56 Pacific Standard Time



## Summary

| Name | Count | Area(ft²) | Length(ft) |
|---|---|---|---|
| Permitted Stationary Sources | 2 | N/A | N/A |

## Permitted Stationary Sources

| # | FacID | FacName | Address | City | Street |
|---|---|---|---|---|---|
| 1 | 18418 | Golden Gate Petroleum Company | 905 Stockton Avenue | San Jose | CA |
| 2 | 109919_1 | Wattis Construction Co Inc | 964 Stockton Ave | San Jose | CA |

| # | Zip | County | Latitude | Longitude | Details |
|---|---|---|---|---|---|
| 1 | 95,110.00 | Santa Clara | 37.34 | -121.92 | *No Data* |
| 2 | 95,110.00 | Santa Clara | 37.35 | -121.92 | Gas Dispensing Facility |

| # | NAICS | Sector | Sub_Sector | Industry | ChronicHI |
|---|---|---|---|---|---|
| 1 | 424,720.00 | Wholesale Trade | Merchant Wholesalers, Nondurable Goods | Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals) | 0.0000000 |
| 2 | 238,110.00 | Construction | Specialty Trade Contractors | Poured Concrete Foundation and Structure Contractors | 0.0001777 |

| # | PM2_5 | Cancer Risk {expression/expr0} | Chronic Hazard Index {expression/expr1} | PM2.5 {expression/expr2} | Count |
|---|---|---|---|---|---|
| 1 | 0.6778420 | *No Data* | *No Data* | 0.678 | 1 |
| 2 | 0.0000000 | 0.037 | 0 | *No Data* | 1 |

NOTE: A larger buffer than 1000 feet may be warranted depending on proximity to significant sources.