APPENDIX A

Air Quality & Greenhouse Gas Assessment

ALMADEN BOULEVARD OFFICE TOWER AIR QUALITY AND GREENHOUSE GAS EMISSION ASSESSMENT

San José, California

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Introduction

The purpose of this report is to address air quality, community risk, and greenhouse gas (GHG) emission impacts associated with the proposed mixed-use development located on the south side of Post Street, between Almaden Boulevard and Almaden Avenue in downtown San José, California. Potential air quality impacts from this project would result from the demolition of the existing land uses at the site, construction of the new buildings and infrastructure and operation of the project. Air pollutants and GHG emissions associated with construction and operation of the project were predicted using appropriate computer models. In addition, the potential project health risk impacts (includes construction and operation) and the impacts of existing toxic air contaminant (TAC) sources affecting the nearby sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description

The project proposes to demolish an existing surface parking lot and construct a 20-story mixed-use building in downtown San José. The building would have 628,500-sf of office land use, 11,500-sf of retail land use, and 317,540-sf and 728 spaces of garage parking on the one-acre site. The ground floor of the building would have the retail land use and some building amenities. The office land use would be located on the fifth through twentieth floors. The parking garage would be located on the second through fourth floors as well as on four below-grade levels. A 1500-kilowatt (kW) emergency generator powered by a 2011-horsepower (HP) engine would be located on the ground floor in the southeast corner of the building. The garage entrances to the parking garage would be located on Almaden Boulevard, at the southwest corner of the site, and on Almaden Avenue, at the southeast corner of the site. The project site is located within the boundaries of the Downtown Strategy 2040 Plan.

Setting

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

Air Pollutants of Concern

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

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

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

Toxic Air Contaminants

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

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

Regulatory Agencies

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles.[2] The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

The BAAQMD is the regional agency tasked with managing air quality in the region. At the State level, the CARB (a part of the California Environmental Protection Agency [EPA]) oversees regional air district activities and regulates air quality at the State level. The BAAQMD has published California Environmental Quality Act (CEQA) Air Quality Guidelines that are used in

[2] Available online: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed: November 21, 2014.

this assessment to evaluate air quality impacts of projects.[3] The detailed community risk modeling methodology used in this assessment is contained in *Attachment 1*.

San José Envision 2040 General Plan

The San José Envision 2040 General Plan includes goals, policies, and actions to reduce exposure of the City's sensitive population to exposure of air pollution and toxic air contaminants or TACs. The following goals, policies, and actions are applicable to the proposed project and this assessment:

Applicable Goals – Air Pollutant Emission Reduction

Goal MS-10 Minimize emissions from new development.

Applicable Policies – Air Pollutant Emission Reduction

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

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

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

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.

[3] Bay Area Air Quality Management District. 2017. *BAAQMD CEQA Air Quality Guidelines.* May.

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-11.7 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.

Downtown Strategy 2040 Plan

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

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

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

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

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

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

Operational emissions of regional criteria air pollutants with measures included to reduce emissions under the DTS were identified as significant and unavoidable. To reduce operational emissions associated with vehicle travel, future development will be required to implement a transportation demand management (TDM) program, consistent with the Downtown Transportation Plan.

The TDM programs may incorporate, but would not be limited to, the following Transportation Control Measures (TCMs):

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

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

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

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The project would not introduce new sensitive receptors to the area. The closest sensitive receptors to the project site are the future Greyhound Tower residences to the east opposite Almaden Avenue. There are additional multi-family residences to the northeast and north of the project site. Note that receptors were also included at the site of the defunct Plaza Hotel to the southeast of the site opposite Almaden Avenue because it has been converted into interim housing for homeless adults.

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.

Table 1. BAAQMD Air Quality Significance Thresholds

Criteria Air Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	**Average Daily Emissions (lbs./day)**	**Annual Average Emissions (tons/year)**
ROG	54	*Evaluated in DTS DEIR*	
NO_x	54		
PM_{10}	82 (Exhaust)		
$PM_{2.5}$	54 (Exhaust)		
CO	Not Applicable		
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards	**Single Sources Within 1,000-foot Zone of Influence**	**Combined Sources (Cumulative from all sources within 1,000-foot zone of influence)**	
Excess Cancer Risk	>10.0 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	
Greenhouse Gas Emissions			
Land Use Projects – direct and indirect emissions	*Evaluated in DTS DEIR*		

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. GHG = greenhouse gases.

AIR QUALITY IMPACTS AND MITIGATION MEASURES

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

The Bay Area is considered a non-attainment area for ground-level O_3 and $PM_{2.5}$ under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for PM_{10} under the California Clean Air Act, but not the federal act. The area has attained both State and Federal ambient air quality standards for carbon monoxide. As part of an effort to attain and maintain ambient air quality standards for O_3, $PM_{2.5}$ and PM_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for O_3 precursor pollutants (ROG and NOx), PM_{10}, and $PM_{2.5}$ and apply to both construction period and operational period impacts.

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 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 2017 (EMFAC2017) model was used to predict emissions from construction traffic, which includes worker travel, vendor trucks, and haul trucks.[4] The model output from CalEEMod along with construction inputs are included as *Attachment 2* and EMFAC2017 vehicle emissions modeling outputs are included in *Attachment 3*.

Land Use Inputs

The proposed mixed-use project land uses were input into CalEEMod as follows:

- 628,500-sf entered as "General Office Building" on 1 acre
- 11,500-sf entered as "Strip Mall", and
- 728 spaces and 317,540-sf entered as "Enclosed Parking with Elevator".

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 information provided by the project applicant.

The CalEEMod construction equipment worksheet provided by the applicant included the schedule for each phase. Within each phase, the quantity of equipment to be used along with the average hours per day and total number of workdays was provided. Since different equipment would have

[4] See CARB's EMFAC2017 Web Database at https://www.arb.ca.gov/emfac/2017/

different estimates of the working days per phase, the hours per day for each phase was computed by dividing the total number of hours that the equipment would be used by the total number of days in that phase. The construction schedule assumed that the earliest possible start date would be January 2021 and the project would be built out over a period of approximately 29 months, or 633 construction workdays. The first earliest operational year was assumed to be 2024.

Construction Truck Traffic Emissions

The latest version of the CalEEMod model is based on the older version of the CARB EMFAC2014 motor vehicle emission factor model. This model has been superseded by the EMFAC2017 model; however, CalEEMod has not been updated to include EMFAC2017. Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on the estimate of demolition material to be exported, soil material imported and/or exported to the site, and the estimate of cement and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for those were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for demolition were estimated from the provided demolition tonnage by assuming each truck could carry 10 tons per load. The number of concrete and asphalt total round haul trips were provided for the project and converted to total one-way trips, assuming two trips per delivery.

The construction traffic information was combined with EMFAC2017 motor vehicle emissions factors. EMFAC2017 provides aggregate emission rates in grams per mile for each vehicle type. The vehicle mix for this study was based on CalEEMod default assumptions, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1and LDT2). Vendor trips are comprised of delivery and large trucks (EMFAC category MHDT and HHDT) and haul trips, including cement trucks, are comprised of large trucks (EMFAC category HHDT). Travel distances are based on CalEEMod default lengths, which are 10.8 miles for worker travel, 7.3 miles for vendor trips and 20 miles for hauling (demolition material export and soil import/export). Since CalEEMod does not address cement or asphalt trucks, these were treated as vendor travel distances. Each trip was assumed to include an idle time of 5 minutes. Emissions associated with vehicle starts were also included. On-road emission rates from the years 2021-2023 for Santa Clara County were used. Table 2 provides the traffic inputs that were combined with the EMFAC2017 emission database to compute vehicle emissions.

Table 2. Construction Traffic Data Used for EMFAC2017 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]	71.5% LDA 6.4% LDT1 22.1% LDT2	38.1% MHDT 61.9% HHDT	100% HHDT	
Trip Length (miles)	10.8	7.3	20.0 (Demo/Soil) 7.3 (Cement/Asphalt)	5 Minute Truck Idle Time
Demolition	40	-	196	43,122-sf of demolition hauling
Grading	550	-	8,500	68,000 CY Export
Trenching	220	-	-	
Building Construction	135,200	62,800	4,700	2,350 Cement Roundtrips
Architectural Coating	10,200	-	-	
Paving	39	-	30	126 CY Asphalt

Notes: [1] Based on 2021-2023 EMFAC2017 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.

Summary of Computed Construction Period Emissions

Annual emissions were predicted using CalEEMod. Average daily emissions were computed by dividing the total construction emissions by the number of construction days (633 construction workdays). Table 3 shows 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 3, predicted construction period emissions would not exceed the BAAQMD significance thresholds. Additionally, the DTS control measures requires to implement best management practices to control dust and exhaust during construction. Therefore, air pollutant emissions from the project would be further reduced.

Table 3. Construction Period Emissions

Scenario	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Total construction emissions (tons)	4.3 tons	8.0 tons	0.4 tons	0.3 tons
Average daily emissions (pounds)[1]	13.5 lbs./day	25.2 lbs./day	1.4 lbs./day	1.0 lbs./day
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

Notes: [1]Assumes 633 workdays.

Operational Period Emissions

The impact of operational emissions was addressed in the DTS DEIR and found to be significant and unavoidable. Emissions from the project were computed for information purposes. Operational air emissions from the project would be generated primarily from autos driven by future employees, customers, and vendors. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are typical emissions from these types of uses. CalEEMod was used to estimate emissions from operation of the proposed project assuming full build-out.

Land Uses

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

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest the project could possibly be constructed and begin operating would be 2024. Emissions associated with build-out later than 2024 would be lower.

Trip Generation Rates

CalEEMod allows the user to enter specific vehicle trip generation rates. Therefore, the project-specific daily trip generation rate provided by the traffic consultant was entered into the model. The daily trip rate, depending on the land use type, accounted for the office & retail internal reduction and the location based reduction.[5] For each land use type, the forecasted daily trip rate with trip reductions applied was divided by the quantity of that land use to identify the weekday daily trip rate. The Saturday and Sunday trip rates were assumed to be the weekday rate adjusted by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips to the default weekday rate. The default trip lengths and trip types specified by CalEEMod were used. The total project trips would be 4,254 trips. Note that the project may implement a transportation demand management (TDM) program; however, the effects of a TDM program were not included in the operational analysis.

EMFAC2017 Adjustment

The vehicle emission factors and fleet mix used in CalEEMod are based on EMFAC2014, which is an older CARB emission inventory for on road and off road mobile sources. Since the release of CalEEMod Version 2016.3.2, new emission factors have been produced by CARB. EMFAC2017 became available for use in March 2018 and approved by the EPA in August 2019. It includes the latest data on California's car and truck fleets and travel activity. Additionally, CARB has recently released EMFAC off-model adjustment factors to account for the Safer Affordable Efficient (SAFE) Vehicle Rule Part one.[6] The SAFE vehicle Rule Part One revoked California's authority to set its own GHG emission standards and set zero emission vehicle mandates in California. As a result of this ruling, mobile criteria pollutant emissions would increase. Therefore, the CalEEMod vehicle emission factors and fleet mix were updated with the emission rates and fleet mix from EMFAC2017, which were adjusted with the CARB EMFAC off-model adjustment factors. On road emission rates from 2024 Santa Clara County were used.

[5] Hexagon Transportation Consultants, Inc., *50 South Almaden Boulevard Office Development Local Transportation Analysis.* June 9, 2020.
[6] California Air Resource Board, 2019. *EMFAC Off-Model Adjustment Factors to Account for the SAFE Vehicle Rule Part One*. November. Web: https://ww3.arb.ca.gov/msei/emfac_off_model_adjustment_factors_final_draft.pdf

More details about the updates in emissions calculation methodologies and data are available in the EMFAC2017 Technical Support Document.[7]

Energy

CalEEMod defaults for energy use were used, which include the 2016 Title 24 Building Standards. GHG emissions modeling included the indirect emissions from electricity consumption. The electricity produced emission rate was then modified in CalEEMod. CalEEMod has a default emission factor of 641.3 pounds of CO_2 per megawatt of electricity produced, which is based on Pacific Gas and Electric's (PG&E) 2008 emissions rate. However, PG&E published in 2019 emissions rates for 2010 through 2017, which showed the emission rate for delivered electricity had been reduced to 210 pounds CO_2 per megawatt of electricity delivered in the year 2017.[8] However, the project would use electricity supplied by San Jose Clean Energy (SJCE) that will be 100-percent carbon free by 2021 before the project becomes operational.[9]

Project Generators

The project would include one emergency generator on the ground floor in the southeast corner of the site. The preliminary size of the generator would be approximately 1,500-kW and would be powered by an estimate 2,011-HP diesel engine. This generator would be tested periodically and power the buildings in the event of a power failure. For modeling purposes, it was assumed that the generator would be operated primarily for testing and maintenance purposes. CARB and BAAQMD requirements limit these engine operations to 50 hours each per year of non-emergency operation. During testing periods, the engine would typically be run for less than one hour. The engine would be required to meet CARB and EPA emission standards and consume commercially available California low-sulfur diesel fuel. The generator emissions were modeled using CalEEMod.

Other Inputs

Default model assumptions for emissions associated with solid waste generation use were applied to the project. Water/wastewater use were changed to 100% aerobic conditions to represent wastewater treatment plant conditions.

Existing Uses

The existing land uses on the project site include a surface parking lot and a small single-story building. These uses produce low operational and traffic emissions which would not considerably offset emissions from the proposed project. Therefore, the emissions from the existing uses were not considered, nor used to offset proposed project conditions.

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[7] See CARB 2018: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-modeling-tools-emfac

[8] PG&E, 2019. *Corporate Responsibility and Sustainability Report*. Web: http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_CRSR_2019.pdf

[9] Kerrie Romanow and Rosalynn Hughey, 2019. *Building Reach Code for New Construction Memorandum*. August. Web: https://sanjose.legistar.com/LegislationDetail.aspx?ID=4090015&GUID=278596A7-1A2B-4248-B794-7A34E2279E85

Summary of Computed Operational Period Emissions

Annual emissions were predicted using CalEEMod and daily emissions were estimating assuming 365 days of operation. Table 4 shows average daily emissions of ROG, NO_X, total PM_{10}, and total $PM_{2.5}$ during operation of the project. The operational period emissions would not exceed the BAAQMD significance thresholds.

Table 4. Operational Period Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2024 Project Operational Emissions (*tons/year*)	4.1 tons	2.7 tons	2.9 tons	0.8 tons
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Threshold?	*No*	*No*	*No*	*No*
2024 Project Operational Emissions (*lbs/day*)[1]	22.6 lbs.	14.6 lbs.	16.0 lbs.	4.6 lbs.
BAAQMD Thresholds (pounds/day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	*No*	*No*	*No*	*No*

Notes: [1] Assumes 365-day operation.

Impact: Expose sensitive receptors to substantial pollutant concentrations?

Project impacts related to increased community risk can occur either by introducing a new source of TACs during construction and operation with the potential to adversely affect existing sensitive receptors in the project vicinity or by introducing a new sensitive receptor, such as a residential use, in proximity to an existing source of TACs. This project will not introduce new sensitive receptors because there are no permanent residences proposed.

Project construction activity would generate dust and equipment exhaust that would affect nearby sensitive receptors. Project operation would increase traffic in the area that would increase the air pollutant and TAC emissions. In addition, the project would include the installation of an emergency generator powered by a diesel engine that would also have emissions of TACs and air pollutants.

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

Community risk impacts were addressed by predicting increased cancer risk, the increase in annual $PM_{2.5}$ concentrations and computing the Hazard Index (HI) for non-cancer health risks. The methodology for computing community risks impacts is contained in *Attachment 1*. This involved the modeling of TAC and $PM_{2.5}$ emissions, dispersion modeling, and cancer risk computations.

<u>Community Risks from Project Construction</u>

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust air pollutant emissions would not be considered to contribute substantially to existing or projected air quality violations. Construction exhaust emissions may

still pose health risks for sensitive receptors such as surrounding residents. The primary community risk impact issue associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[10] 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.

Construction Emissions

The CalEEMod model provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total emissions from all construction stages of 0.2601 tons (520 pounds). The on-road emissions are a result of haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. A trip length of one mile was used to represent vehicle travel while at or near the construction site. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod as 0.106 tons (212 pounds) for the overall construction period.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ concentrations at sensitive receptors (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] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions. Combustion equipment exhaust emissions were modeled as a series of point sources with a nine-foot release height (construction equipment exhaust stack height) placed at 16-feet (5-meter) intervals throughout the construction site. This resulted in 176 individual point sources being used to represent mobile equipment DPM exhaust emissions in the construction area, with DPM emissions occurring throughout the project construction site. Construction fugitive $PM_{2.5}$ dust emissions were modeled as an area source encompassing the entire construction site with a near ground level release height of two meters. Construction emissions were modeled as occurring daily between 7:00 a.m. to 4:00 p.m. when the majority of construction activity would occur.

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

[10] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.
[11] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.

The modeling used a 5-year meteorological data set (2013-2017) from the San José International Airport prepared for use with the AERMOD model by the BAAQMD. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2021-2023 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptor locations. Receptor heights of 5 feet (1.5 meters), 15 feet (4.5 meters), 20 feet (6.1 meters), 30 feet (9.1 meters), 40 feet (12.2 meters), and 50 feet (15.2 meters) were used to represent the breathing heights of first and second levels of resident-occupied floors in nearby multi-story, mixed-used residential developments.

Construction Impacts

The maximum-modeled annual DPM and $PM_{2.5}$ concentrations, which includes both the DPM and fugitive $PM_{2.5}$ concentrations, were identified at nearby sensitive receptors (as shown in Figure 1) to find the maximally exposed individuals (MEIs). Using the maximum annual modeled DPM concentrations, the maximum increased cancer risks were calculated using BAAQMD recommended methods and exposure parameters described in *Attachment 1*. Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were also calculated and identified. *Attachment 4* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

Results of this assessment indicated that the cancer risk MEI was located at a multi-family residence on the first residentially occupied level (30 feet above ground) of the future Greyhound Tower building to the east of the project site opposite Almaden Avenue and the total $PM_{2.5}$ concentration MEI was located on the first floor (5 feet above ground) of the adult homeless shelter to the east opposite Almaden Avenue (as seen in Figure 1). The unmitigated maximum increased cancer risks and maximum $PM_{2.5}$ concentration from construction exceed their respective BAAQMD single-source thresholds of greater than 10.0 per million for cancer risk and greater than 0.3 $\mu g/m^3$ for $PM_{2.5}$ concentration. The unmitigated HI does not exceed its BAAQMD single-source thresholds of 1.0. Table 5 summarizes the maximum cancer risks, PM2.5 concentrations, and health hazard indexes for project related construction activities affecting the MEIs.

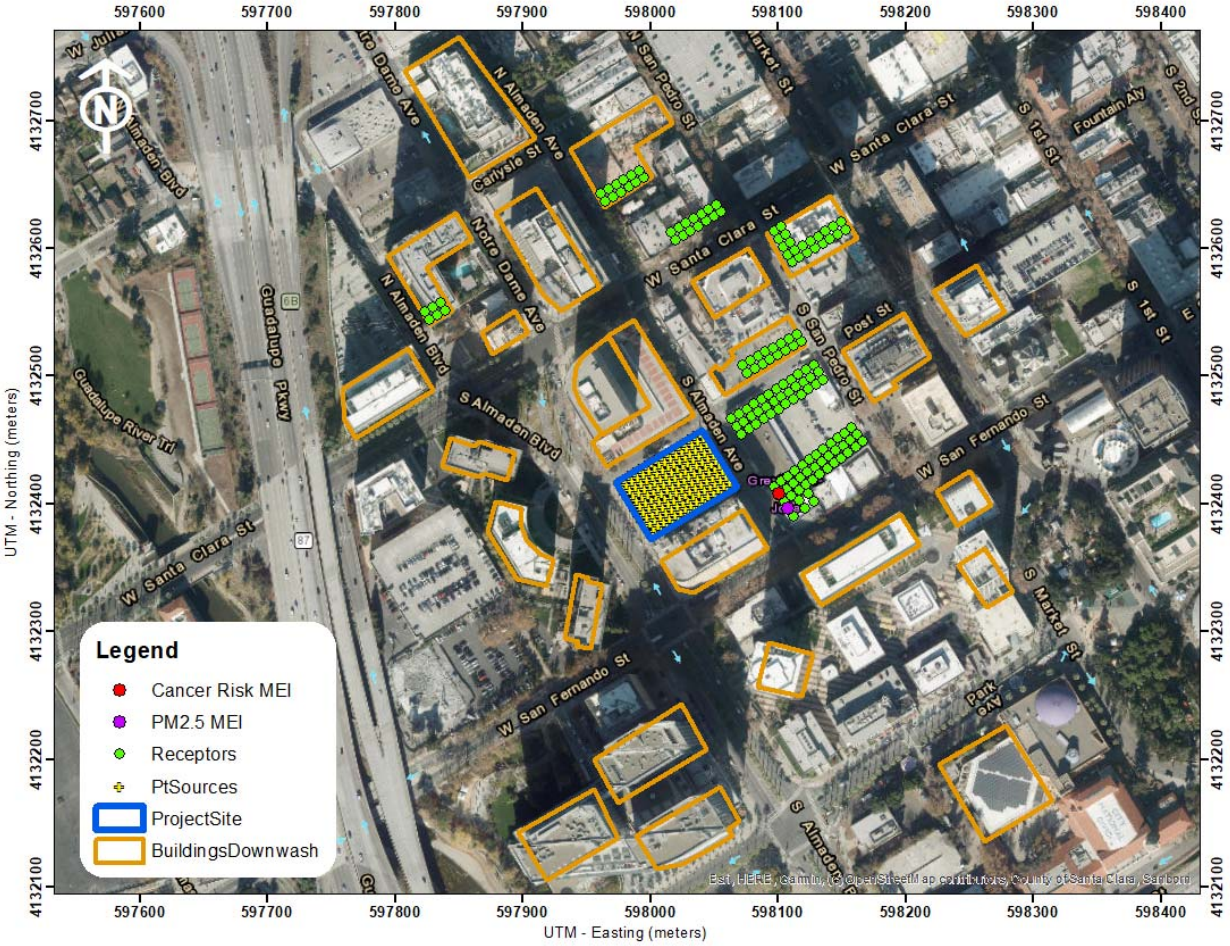
Table 5. Construction Risk Impacts at the Offsite Residential MEI

Source		Cancer Risk* (per million)	Annual $PM_{2.5}$* ($\mu g/m^3$)	Hazard Index
Project Construction	Unmitigated	**51.4 (infant)**	**0.51**	0.03
	Mitigated**	7.6 (infant)	0.11	0.01
	BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	Unmitigated	***Yes***	***Yes***	*No*
	Mitigated	*No*	*No*	*No*

* Maximum cancer risk and maximum $PM_{2.5}$ concentration occur at different receptor locations.

** Construction equipment with Tier 4 Interim engines and electric cranes, generators, air compressors, and welders as Mitigation Measures.

Figure 1. Project Construction Site, Building Downwash, and Locations of Point Sources, Off-Site Sensitive Receptors, and Maximum TAC Impacts



Community Risks from Project Operation – Traffic and Generators

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

Project Operational Traffic

An analysis was conducted of the impacts of TACs and $PM_{2.5}$ from local roadways increase in traffic due to the project. The project driveways let out onto Almaden Boulevard and Almaden Avenue, which would have the highest concentration and impact from project traffic. TAC and $PM_{2.5}$ concentrations were modeled from project traffic. Traffic volumes were based on the predicted project peak-hour traffic volumes along these roadway segments. Figure 2 shows the modeling roadway segments.

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ roadway emissions in the project area using the California Department of Transportation EMFAC2017 (CT-

EMFAC2017) emission factor model, based on the increased local project-related traffic volumes contained in the traffic report. The project average daily traffic (ADT) was based on estimates of the peak hour turning movement counts included in the project's traffic analysis at the project site's driveways. The a.m. and p.m. peak-hour volumes for the background plus project scenario were averaged and then multiplied by 10 to estimate the ADT. The ADT from the project on Almaden Boulevard was estimated to be 2,800 vehicles and the ADT from the project on Almaden Avenue was estimated to be 2,110 vehicles. The modeling reflects that DPM emissions are projected to decrease in the future as provided in the CT-EMFAC2017 emissions data.

Project operation was assumed to begin in 2024 or thereafter. To calculate the increased cancer risk from increased traffic volumes due to the project traffic, the community risks were adjusted for exposure duration to account for the MEI being exposed to construction for the first 3 years of the 30-year period. The exposure duration from roadway traffic was adjusted for 27 years of exposure (2024-2050). In order to estimate TAC and $PM_{2.5}$ emissions over the exposure period for calculating increased cancer risks to exiting residents from traffic on the Project Area Roads, the CT-EMFAC2017 model was used to develop vehicle emission factors for the year 2024. Year 2024 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated (27 years) from the roadway traffic, since, as discussed above, overall vehicle emissions, and in particular diesel truck emissions will decrease in the future.

The CT-EMFAC2017 model was used to develop vehicle emission factors using an estimated mix of cars and trucks. The project area roads were assumed to carry primarily cars and some trucks. A vehicle mix including 6.2 percent trucks was based on a default EMFAC2017 fleet mix truck percentages for roads in Santa Clara County. Traffic volumes were assumed to increase one percent per year. Average travel speeds of 20 mph were assumed for all roadways.

Organic TACs that are used for assessing cancer risks from vehicle emissions are those TACs that are emitted from gasoline combustion, based on emissions of total organic gases (TOG). The TOG emissions from gasoline-powered vehicles were computed using the CT-EMFAC2017 model. These TOG emissions were then used in modeling the TACs associated with motor vehicle exhaust emissions and evaporative emissions. TOG emissions from exhaust and for running evaporative loses from gasoline vehicles were calculated using CT-EMFAC2017 default model values for Santa Clara County along with the traffic volumes, speeds, and vehicle mixes.

$PM_{2.5}$ emissions for vehicles traveling on project area roads were calculated using the same basic approach that was used for assessing TAC emissions. All $PM_{2.5}$ emissions from all vehicles were used, rather than just the $PM_{2.5}$ fraction from diesel powered vehicles, because all vehicle types (i.e., gasoline and diesel powered) produce $PM_{2.5}$. Additionally, $PM_{2.5}$ emissions from vehicle tire and brake wear and from re-entrained roadway dust were included in these emissions. The CT-EMFAC2017 model allows for the calculation of all types of $PM_{2.5}$ emissions from all vehicles and was used to calculate the $PM_{2.5}$ emissions.

To calculate the increased cancer risk from increased traffic volumes due to the project traffic, the community risks were adjusted for exposure duration to account for the MEI being exposed to construction for the first 3 years of the 30-year period. The exposure duration was adjusted for 27

years of exposure. The modeled DPM and $PM_{2.5}$ concentrations at the same MEIs identified in the construction dispersion modeling (see Figure 2) were used to calculate the community risks. Based on this duration, the increased cancer risk would be 0.2 per million, the maximum annual $PM_{2.5}$ concentration would be 0.07 $\mu g/m^3$, and the HI value would be less than 0.01. The emissions and health risk calculations for the proposed generators are included in *Attachment 4*.

Project Operational Emergency Generator

The project would include a 1,500-kW emergency generator powered by a 2,011-HP diesel engine located on the ground-level of the project near the southeast corner of the building (see Figure 2). Operation of a diesel generator would be a source of TAC emissions. The generator would be operated for testing and maintenance purposes, with a maximum of 50 hours per year of non-emergency operation under normal conditions. During testing periods, the engine would typically be run for less than one hour under light engine loads. The generator engine would be required to meet U.S. EPA emission standards and consume commercially available California low sulfur diesel fuel. The emissions from the operation of the generator were calculated using the CalEEMod model.

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

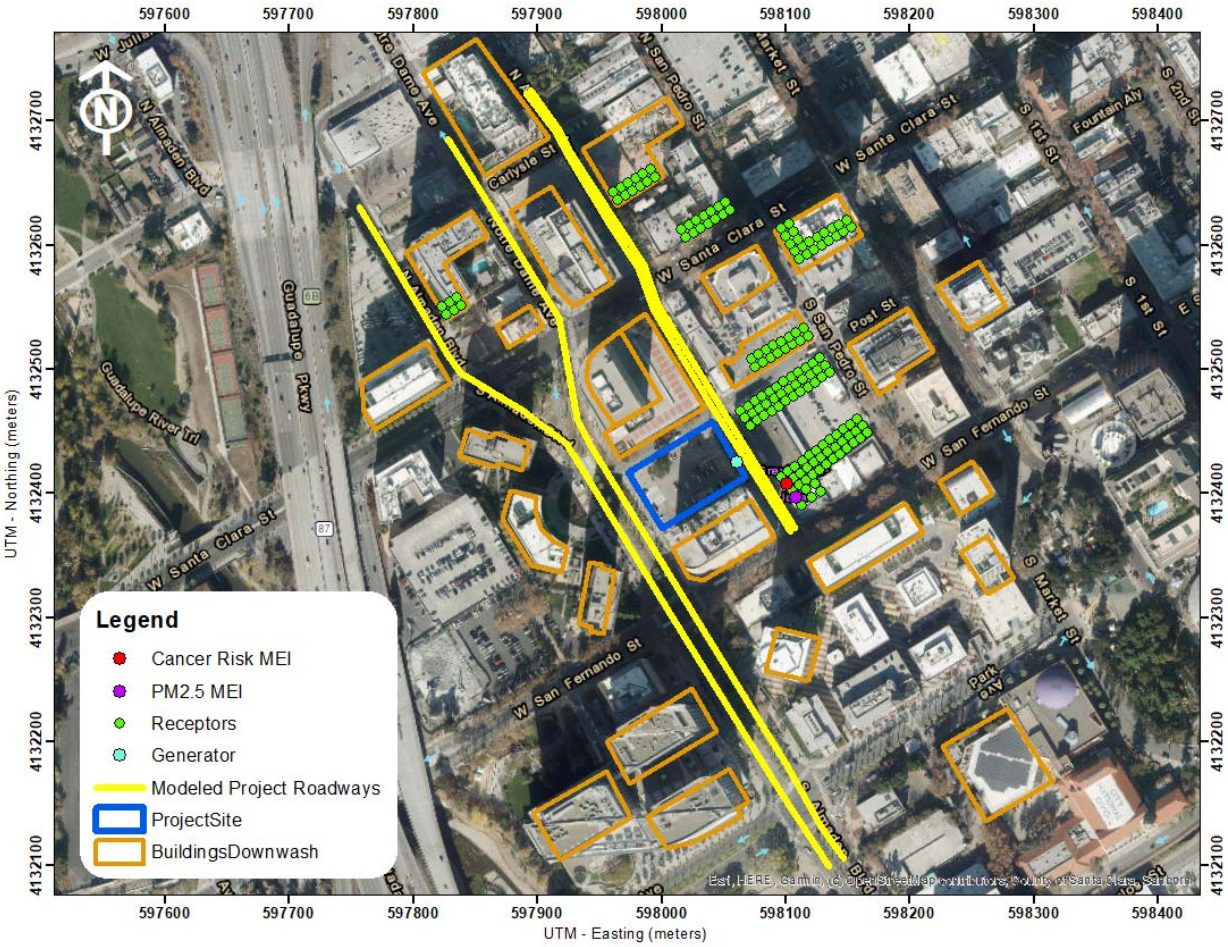
To obtain an estimate of potential cancer risks and $PM_{2.5}$ impacts from operation of the emergency generators the U.S. EPA AERMOD dispersion model was used to calculate the maximum annual DPM concentration at off-site sensitive receptor locations (nearby residences). The same receptors and breathing heights used in the construction dispersion modeling were used for the generator model. Additionally, the same building downwash and BAAQMD San José Airport meteorological data was used. Stack parameters (stack height, exhaust flow rate, and exhaust gas temperature) for modeling the generators was based on BAAQMD default parameters for emergency generators.[12] Annual average DPM and $PM_{2.5}$ concentrations were modeled assuming that generator testing could occur at any time of the day.

To calculate the increased cancer risk from the generators at the MEI, the cancer risks were also adjusted for exposure duration to account for the MEI being exposed to construction for the first 3 years of the 30-year period. The exposure duration was adjusted for 27 years of exposure. Based on this duration, the increased cancer risk from the generators would be 3.9 per million. The maximum annual $PM_{2.5}$ concentration would be 0.01 $\mu g/m^3$ and the HI value would be less than

[12] The San Francisco Community Risk Reduction Plan: Technical Support Document, BAAQMD, San Francisco Dept. of Public Health, and San Francisco Planning Dept., December 2012

0.01. The emissions and health risk calculations for the proposed generators are included in *Attachment 4*.

Figure 2. Project Site, Modeled Project Roadways, Location of Project Generator, Locations of Off-Site Sensitive Receptors and Maximum TAC Impacts



Summary of Project-Related Community Risks at MEIs

The cumulative risk impacts from a project is the combination of construction and operation sources. These sources include on-site construction activity, project generators, and increased traffic from the project. The project impact is computed by adding the construction cancer risk for an infant to the increased cancer risk for the project operational conditions for the roadway and generator at the MEIs over a 30-year period. The project MEI is identified as the sensitive receptor that is most impacted by the project's construction and operation.

For this project, the sensitive receptor identified in Figure 1 as the construction MEI is also the project MEI. At this location, the MEI would be exposed to 3 years of construction cancer risks and 27 years of operational (includes traffic and emergency backup generators) cancer risks. The cancer risks from construction and operation of the project were summed together. Unlike, the

increased maximum cancer risk, the annual $PM_{2.5}$ concentration and HI risks are not additive but based on an annual maximum risk for the entirety of the project.

Project risk impacts are shown in Table 6. The unmitigated maximum cancer risks and $PM_{2.5}$ concentration would exceed the BAAQMD single-source thresholds of greater than 10.0 per million for cancer risk and 0.3 $\mu g/m^3$ for $PM_{2.5}$ concentration. Implementation of *Mitigation Measure AQ-1 and AQ-2* the mitigated increased project cancer risk and $PM_{2.5}$ concentration would not exceed the single-source thresholds. The unmitigated non-cancer hazards from construction and operation activities would be below the single-source significance threshold.

Table 6. Construction and Operation Risk Impacts at the Offsite Project MEI

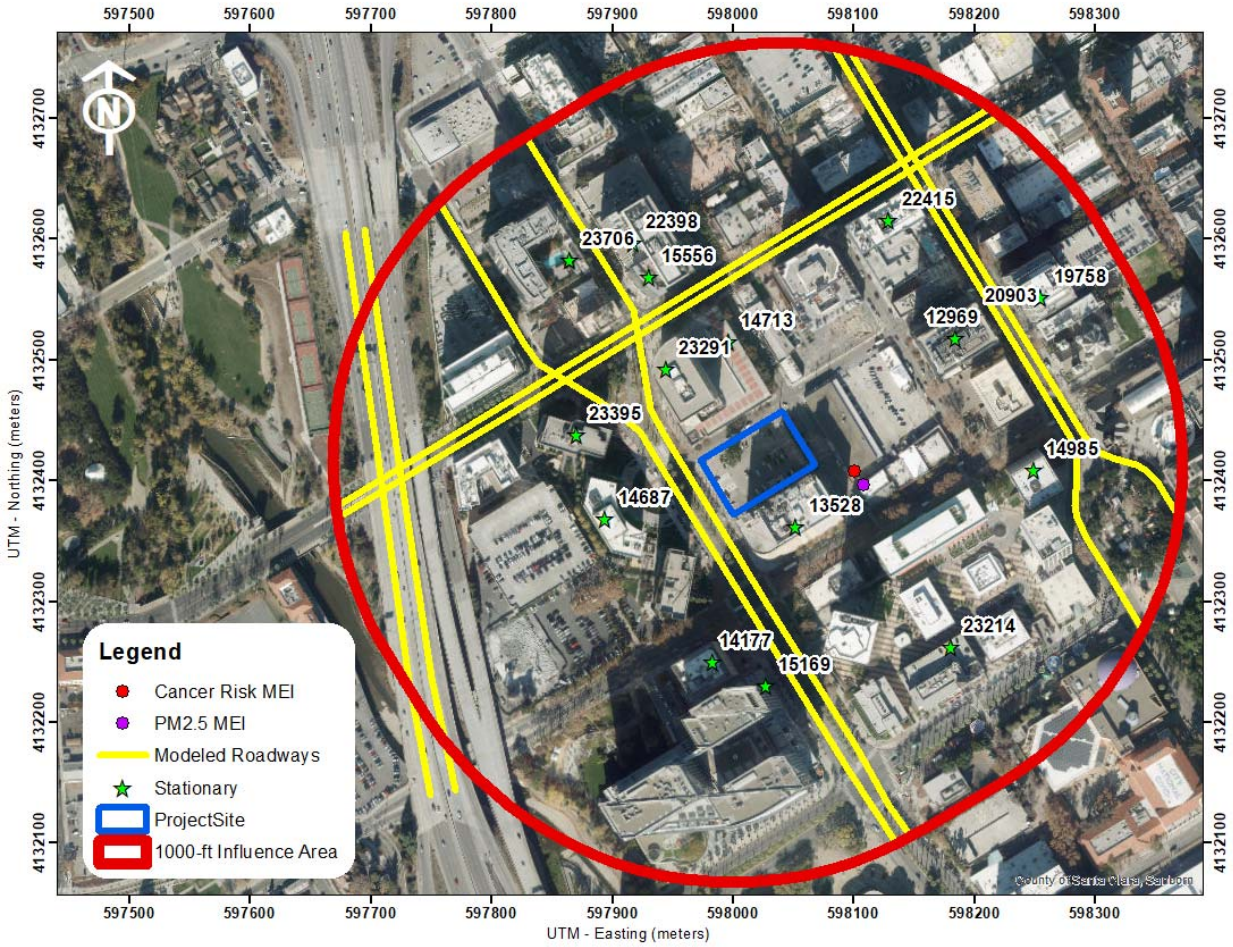
Source		Cancer Risk* (per million)	Annual $PM_{2.5}$* ($\mu g/m^3$)	Hazard Index
Project Construction (Years 0-3)	Unmitigated	**51.4 (infant)**	**0.51**	0.03
	Mitigated**	7.6 (infant)	0.11	0.01
Project Traffic (Years 4-30)		0.2	0.07	<0.01
Project Generators (Years 4-30)	Unmitigated	3.9	0.01	<0.01
	Mitigated***	0.6	--	--
Unmitigated Total/Maximum Project (Years 0-30)		**55.5**	**0.51**	0.03
Mitigated Total/Maximum Project (Years 0-30)		8.4	0.11	0.01
BAAQMD Single-Source Threshold		***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	Unmitigated	***Yes***	***Yes***	*No*
	Mitigated	*No*	*No*	*No*

* Maximum cancer risk and maximum $PM_{2.5}$ concentration occur at different receptor locations.
** Construction equipment with Tier 4 Interim engines and electric cranes, generators, air compressors, and welders as Mitigation Measures.
*** Project generator equipped with DPM filters that achieve an 85-percent reduction in particulate matter emissions.

Cumulative Community Risks of all TAC Sources at Project MEI

Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of a project site (i.e. influence area). These sources include freeways or highways, rail lines, busy surface streets, and stationary sources identified by BAAQMD. A review of the project area indicates that traffic on State Route 87 (S.R. 87), Almaden Boulevard, W. Santa Clara Street, and Market Street would exceed 10,000 vehicles per day. Other nearby streets are assumed to have less than 10,000 vehicles per day. A review of BAAQMD's stationary source Google Earth map tool identified 15 stationary sources with the potential to affect the MEI. In addition, there are development projects whose construction would contribute to the cumulative risk. The risk impacts from these developments are included within the analysis. Figure 3 shows the location of the sources affecting the MEI. Community risk impacts from these sources upon the MEI are reported in Table 7. Details of the modeling and community risk calculations are included in *Attachment 5.*

Figure 3. Project Site and Nearby TAC and $PM_{2.5}$ Sources



Highways – S.R. 87

The project MEIs are located near S.R. 87. A refined analysis of the impacts of TACs and $PM_{2.5}$ to the MEI receptors is necessary to evaluate potential cancer risks and $PM_{2.5}$ concentrations from S.R. 87. A review of the traffic information reported by the California Department of Transportation (Caltrans) indicates that S.R. 87 traffic includes 126,600 vehicles per day (based on an annual average)[13] that are about 3.7 percent trucks, of which 1.0 percent are considered diesel heavy duty trucks and 2.7 percent are medium duty trucks.[14]

Traffic Emissions Modeling

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on S.R. 87 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. Emission processes modeled include running exhaust for DPM, $PM_{2.5}$ and total organic compounds (TOG), running evaporative losses for TOG, and tire and brake wear

[13] Caltrans. 2019. *2018 Traffic Volumes California State Highways.*
[14] Caltrans. 2020. *2018 Annual Average Daily Truck Traffic on the California State Highway System.*

and fugitive road dust for $PM_{2.5}$. DPM emissions are projected to decrease in the future and are reflected in the CT-EMFAC2017 emissions data. Inputs to the model include region (i.e., Santa Clara County), type of road, traffic mix assigned by CT-EMFAC2017 for the county and adjusted for the local truck mix on S.R. 87, year of analysis, and season.

Project operation was assumed to occur in 2024 or later. In order to estimate TAC and $PM_{2.5}$ emissions over the 30-year exposure period used for calculating increased cancer risks to the MEIs from traffic on S.R. 87, the CT-EMFAC2017 model was used to develop vehicle emission factors for the year 2024 using the calculated mix of cars and trucks on S.R. 87. 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 2024 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated (30 years), since, as discussed above, overall vehicle emissions, and in particular diesel truck emissions will decrease in the future. Average daily traffic volumes and truck percentages were based on Caltrans data for S.R. 87. Traffic volumes were assumed to increase 1 percent per year. Average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,[15] which were then applied to the average daily traffic volumes to obtain estimated hourly traffic volumes and emissions for S.R. 87.

For all hours of the day, other than during peak a.m. and p.m. periods, an average speed of 65 mph was assumed for all vehicles. Based on traffic data from the Santa Clara Valley Transportation Authority's 2017 Monitoring and Conformance Report, traffic speeds during the peak a.m. and p.m. periods were identified.[16] For a 2-hour period during the peak a.m. period, an average travel speed of 15 mph was used for northbound traffic and an average speed of 60 mph was used for southbound traffic. For the peak p.m. period, an average travel speed of 60 mph was used for northbound traffic and an average travel speed of 30 mph was used for southbound traffic.

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for future traffic on S.R. 87 and using these emissions with an air quality dispersion model to calculate TAC and $PM_{2.5}$ concentrations at the project MEI receptor locations. Maximum increased lifetime cancer risks and annual $PM_{2.5}$ concentrations for the receptors were then computed using modeled TAC and $PM_{2.5}$ concentrations and BAAQMD methods and exposure parameters described in *Attachment 1*.

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. Northbound and southbound traffic on S.R. 87 within about 1,000 feet of the project site was evaluated with the model. Emissions from vehicle traffic were modeled in AERMOD using a series of volume sources along a line (line volume sources), with line segments used to represent northbound and

[15] The Burden output from EMFAC2007, CARB's previous version of the EMFAC model, was used for this since the current web-based version of EMFAC2017 does not include Burden type output with hour by hour traffic volume information.

[16] Santa Clara Valley Transportation Authority. *2017 CMP Monitoring and Conformance Report April 23, 2018.*

southbound travel lanes on S.R. 87. The modeling used a five-year data set (2013-2017) of hourly meteorological data from the San José Airport prepared by the BAAQMD for use with the AERMOD model. Other inputs to the model included road geometry and elevations, hourly traffic emissions, and receptor locations and heights.

Computed Cancer and Non-Cancer Health Impacts

The maximum increased cancer risk at the construction cancer risk MEI receptors would be 1.4 in one million. The maximum $PM_{2.5}$ concentration at the construction $PM_{2.5}$ concentration MEI receptors would be 0.07 $\mu g/m^3$ and the HI at these locations would be less than 0.01. Figure 3 shows the roadway links used for the modeling and receptor locations where concentrations were calculated. The risk impacts from the highway on the construction MEI is shown in Table 7. Details of the emission calculations, dispersion modeling and cancer risk calculations for the receptors with the maximum cancer risk from S.R. 87 traffic are provided in *Attachment 5.*

Local Roadways – Almaden Boulevard, W. Santa Clara Street, and Market Street

The same inputs (with the exception of ADT) and modeling used in the project traffic calculations was used for the cumulative roadway risk analysis. Three roadways had ADTs over 10,000 vehicles per day; Almaden Boulevard had an ADT of 13,650 vehicles, W. Santa Clara Street had an ADT of 20,396 vehicles, and Market Street had an ADT of 14,964. These ADTs were based on the peak-hour traffic volumes included in the project's and the City View Plaza's[17] traffic analyses for background plus project conditions. The AM and PM peak-hour volumes were averaged and then multiplied by 10 to estimate the ADT. Estimated increased cancer risks, annual $PM_{2.5}$ concentration, and non-cancer hazards values for the roadways are listed in Table 7. Risk impacts from the roadways at the MEIs are included in *Attachment 5.*

Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2018* GIS website,[18] which identifies the location of nearby stationary sources and their estimated risk and hazard impacts, including emissions and adjustments to account for new OEHHA guidance. The 15 stationary sources near the project site had risk values on the website, so a stationary source information request was not required to be submitted to BAAQMD. The website provided risk values which were then adjusted for distance using the appropriate BAAQMD *Distance Multiplier Tool for Diesel Internal Combustion Engines, Gasoline Dispensing Facilities (GDFs), or Generic Sources*. All 15 stationary sources were identified as diesel generators. Community risk impacts from these sources upon the project are reported in Table 7. Risk impacts from the stationary sources at the MEIs are included in *Attachment 5.*

[17] Hexagon Transportation Consultants, 2019. *City View Plaza Traffic Impact Analysis.* December
[18] BAAQMD, https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65

Construction Risk Impacts from Nearby Developments

Within the 1,000-ft influence area, there are eight developments that are under construction or planning approved.[19] The developments under construction include the Adobe Development at 333 W. San Fernando Street (File Number H18-037), the 200 Park Development at 200 Park Avenue (File Number H18-045), and the Parkside Hall/Museum Place office development at 180 Park Avenue (File Number H16-024). The developments that have been approved include the Greyhound Tower at 70 S. Almaden Avenue (File Number SP16-021), the Almaden Corner Hotel at 8 N. Almaden Boulevard (File Number HP18-038), the Post and San Pedro Tower at 171 Post Street (File Number H14-023, HA14-023-02), 27 West Tower at 27 S. 1st Street (File Number SP18-016), and City View Plaza at the northeast corner of Almaden Boulevard and Park Avenue (File Number H19-016). These projects' air quality studies and environmental documentation can be located in the Active EIRs,[20] Completed EIRs,[21] or Negative Declaration / Initial Studies[22] webpages of the City of San José Environmental Review website. Note that the Greyhound Tower was not included in the cumulative risk analysis because the Project MEI was identified at this building. Therefore, it was assumed that this development would be fully constructed and operational when this proposed project is under construction.

For the remaining seven projects, either mitigated construction risks and hazard impact values were available and incorporated or if values were unavailable then it was assumed the construction risks from the remaining developments would be less than the BAAQMD single-source thresholds for community risks and hazards. This approach likely provides an overestimate of the community risk and hazard levels because it assumes that maximum impacts from these projects occur concurrently with the proposed project.

Summary of Cumulative Risks at MEIs

Table 7 reports both the project and cumulative community risk impacts at the sensitive receptors most affected by construction and operation (i.e. the MEIs). Without mitigation, the project's community risk from project construction and operation activities would exceed the single-source maximum increased cancer risk of 10.0 per million and the $PM_{2.5}$ concentration threshold of 0.3 $\mu g/m^3$. The incorporation of *Mitigation Measures AQ-1 and AQ-2* would reduce these levels to below the thresholds. The mitigated cumulative community risks would not exceed their respective BAAQMD cumulative-source thresholds.

[19] Developments under planning review are not included within the cumulative analysis since it is speculative to include construction emissions from projects that may or may not be approved.
[20] City of San José, *Active EIRs*, https://www.sanjoseca.gov/your-government/departments/planning-building-code-enforcement/planning-division/environmental-planning/environmental-review/active-eirs
[21] City of San José, *Completed EIRs*, https://www.sanjoseca.gov/your-government/departments/planning-building-code-enforcement/planning-division/environmental-planning/environmental-review/completed-eirs
[22] City of San José, *Negative Declaration / Initial Studies,* https://www.sanjoseca.gov/your-government/departments/planning-building-code-enforcement/planning-division/environmental-planning/environmental-review/negative-declaration-initial-studies

Table 7. Cumulative Community Risk Impacts from Combined TAC Sources at MEIs

Source	Maximum Cancer Risk* (per million)	$PM_{2.5}$ concentration* ($\mu g/m^3$)	Hazard Index
Project Impacts			
Unmitigated Total/Maximum Project (Years 0-30)	**55.5**	**0.51**	0.03
Mitigated Total/Maximum Project (Years 0-30)	8.4	0.11	0.01
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Exceed Threshold? Unmitigated	***Yes***	***Yes***	*No*
Mitigated	*No*	*No*	*No*
Cumulative Sources			
S.R. 87	1.4	0.07	<0.01
Almaden Boulevard, ADT 13,650	0.7	0.06	<0.01
W. Santa Clara Street, ADT 20,396	0.8	0.06	<0.01
Market Street, ADT 14,964	0.2	0.01	<0.01
Plant #12969 (Generator)	6.5	<0.01	0.01
Plant #13528 (Generator)	38.6	0.05	0.07
Plant #14177 (Generator)	0.2	--	--
Plant #14687 (Generator)	0.1	--	--
Plant #14713 (Generator)	0.1	--	--
Plant #14985 (Generator)	0.8	<0.01	<0.01
Plant #15169 (Generator)	12.7	0.02	0.01
Plant #19758 (Generator)	0.4	<0.01	--
Plant #20903 (Generator)	7.5	0.01	0.01
Plant #22398 (Generator)	0.2	<0.01	<0.01
Plant #22415 (Generator)	0.3	--	--
Plant #23214 (Generator)	0.5	--	<0.01
Plant #23291 (Generator)	0.3	--	<0.01
Plant #23395 (Generator)	0.6	<0.01	<0.01
Plant #23706 (Generator)	0.1	--	--
Adobe Development Mitigated Construction Emissions	<5.0	<0.15	<0.5
200 Park Mitigated Construction Emissions	<5.0	<0.15	<0.5
Parkside Hall/Museum Place Mitigated Construction Emissions	<5.0	<0.15	<0.5
Almaden Corner Hotel Mitigated Construction Emissions	<6.7	<0.08	<0.01
Post and San Pedro Tower Mitigated Construction Emissions	<9.5	<0.14	<0.01
27 West Tower Mitigated Construction Emissions	<2.4	<0.05	<0.01
City View Plaza Mitigated Construction Emissions	<14.1	<0.44	<0.01
Combined Sources *Unmitigated*	**<175.2 (infant)**	**<2.00**	<1.76
Mitigated	**<128.1 (infant)**	**<1.60**	<1.74
BAAQMD Cumulative Source Threshold	***>100***	***>0.8***	***>10.0***
Exceed Threshold? Unmitigated	***Yes***	***Yes***	*No*
Mitigated	***Yes***	***Yes***	*No*

* Maximum cancer risk and maximum $PM_{2.5}$ concentration occur at different receptor locations.

Mitigation Measure AQ-1: **Selection of equipment during construction to minimize emissions. Such equipment selection would include the following:**

The project shall develop a plan demonstrating that the off-road equipment used on-site to construct the project would achieve a fleet-wide average 85-percent reduction in DPM exhaust emissions or greater. One feasible plan to achieve this reduction would include the following:

- All diesel-powered off-road equipment, larger than 25 horsepower, operating on the site for more than two days continuously shall, at a minimum, meet U.S. EPA particulate matter emissions standards for Tier 4 interim engines. Where Tier 4 equipment is not available, exceptions could be made for equipment that includes CARB-certified Level 3 Diesel Particulate Filters or equivalent. Equipment that is electrically powered or uses non-diesel fuels would also meet this requirement.

- Install electric line power during early construction phases to avoid use of diesel generators, compressors, and welders.

- Stationary construction cranes (building cranes) shall be powered by electricity.

Effectiveness of Mitigation Measure AQ-1

CalEEMod was used to compute emissions associated with his mitigation measure assuming that all equipment met U.S. EPA Tier 4 interim standards and cranes, generators, air compressors, and welders were electrified. The computed maximum increased residential cancer risk from construction, assuming infant exposure, would be 7.6 in one million or less and the maximum annual $PM_{2.5}$ concentration would be reduced to 0.11 $\mu g/m^3$. With the implementation of Mitigation Measure AQ-1, project construction risk levels would not exceed the BAAQMD significance thresholds.

Mitigation Measure AQ-2: **Identify control measures to reduce diesel particulate matter emissions from generator operation. Include appropriate emission control measures that are dependent upon final generator design.**

During final project design and prior to installation of any emergency generator, the project applicant(s) shall submit documentation that demonstrates the equipment will not increase lifetime cancer risk at sensitive receptors by 10 chances per million, when combined with effects from the project construction and traffic. Significant cancer risk impacts can be avoided by implementing the following measures:

- Placement of the equipment;
- Placement and orientation of the exhaust stacks;
- Application of exhaust controls such as diesel particulate matter filters that reduce DPM by 85 percent; and/or
- Limitation to the operation hours to less than 50 hours per year.

Effectiveness of Mitigation Measure AQ-2

Assuming that the generator is equipped with diesel particulate matter filters that achieve 85-percent reduction in particulate matter emissions (CARB Level 3), incremental project increased cancer risks from generators would be reduced to 0.6 chances per million. Other available measures may provide similar reductions but a subsequent analysis acceptable to the City would have to demonstrate the reductions. In combination with Mitigation Measures AQ-1 and AQ-2, increased cancer risks from project construction and operation, including project traffic, would be reduced to 8.4 chances per million.

Mitigation Measure AQ-1 and *AQ-2* represent best available measures to reduce project construction and operation period emissions to below the cancer risk and $PM_{2.5}$ concentration single-source thresholds. The cumulative cancer risk and $PM_{2.5}$ concentration exceeds their respective cumulative thresholds from existing sources alone. Cumulative risks exceed the cancer risk threshold because of the overwhelming influence of nearby stationary sources and nearby developments' construction and exceed the $PM_{2.5}$ concentration threshold because of the overwhelming influence of the traffic on the nearby roadways and nearby developments' construction at the MEIs. The project's mitigated cancer risk only represents 7 percent of the total cumulative cancer risk and the project's mitigated $PM_{2.5}$ concentration only represents 7 percent of the total cumulative $PM_{2.5}$ concentration. Therefore, the project would not be substantially contributing to the total cumulative cancer risk and $PM_{2.5}$ concentration and would not be cumulatively considerable.

Greenhouse Gas Emissions

Setting

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

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

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

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

Recent Regulatory Actions

Assembly Bill 32 (AB 32), California Global Warming Solutions Act (2006)

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

Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State's main strategies to reduce GHGs from business-as-usual emissions projected in 2020 back down to 1990 levels. Business-as-usual (BAU) is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

As directed by AB 32, CARB has also approved a statewide GHG emissions limit. On December 6, 2007, CARB staff resolved an amount of 427 million metric tons (MMT) of CO_2e as the total statewide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative statewide limit, not a sector- or facility-specific limit. CARB updated the future 2020 BAU annual emissions forecast, in light of the economic downturn, to 545 MMT of CO_2e. Two GHG emissions reduction measures currently enacted that were not previously included in the 2008 Scoping Plan baseline inventory were included, further reducing the baseline inventory to 507 MMT of CO_2e. Thus, an estimated reduction of 80 MMT of CO_2e is necessary to reduce statewide emissions to meet the AB 32 target by 2020.

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

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

SB 350 Renewable Portfolio Standards

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

Executive Order EO-B-30-15 (2015) and SB 32 GHG Reduction Targets

In April 2015, Governor Brown signed Executive Order which extended the goals of AB 32, setting a greenhouse gas emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed SB 32, which legislatively established the GHG reduction target of 40 percent of 1990 levels by 2030. In November 2017, CARB issued *California's 2017 Climate Change Scoping Plan*. While the State is on track to exceed the AB 32 scoping plan 2020 targets, this plan is an update to reflect the enacted SB 32 reduction target.

The new Scoping Plan establishes a strategy that will reduce GHG emissions in California to meet the 2030 target (note that the AB 32 Scoping Plan only addressed 2020 targets and a long-term goal). Key features of this plan are:

- Cap and Trade program places a firm limit on 80 percent of the State's emissions;
- Achieving a 50-percent Renewable Portfolio Standard by 2030 (currently at about 29 percent statewide);
- Increase energy efficiency in existing buildings;
- Develop fuels with an 18-percent reduction in carbon intensity;
- Develop more high-density, transit oriented housing;
- Develop walkable and bikeable communities;
- Greatly increase the number of electric vehicles on the road and reduce oil demand in half;
- Increase zero-emissions transit so that 100 percent of new buses are zero emissions;
- Reduce freight-related emissions by transitioning to zero emissions where feasible and near-zero emissions with renewable fuels everywhere else; and
- Reduce "super pollutants" by reducing methane and hydrofluorocarbons or HFCs by 40 percent.

In the updated Scoping Plan, CARB recommends statewide targets of no more than 6 metric tons CO_2e per capita (statewide) by 2030 and no more than 2 metric tons CO_2e per capita by 2050. The statewide per capita targets account for all emissions sectors in the State, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32 and the longer-term State emissions reduction goal of 80 percent below 1990 levels by 2050.

Federal and Statewide GHG Emissions

The U.S. EPA reported that in 2017, total gross nationwide GHG emissions were 6,457 MMT. These emissions were lower than peak levels of 7,370 MMT that were emitted in 2008. Relative to 1990 levels, these emissions were CARB updates the statewide GHG emission inventory on an annual basis where the latest inventory includes 2000 through 2017 emissions[23]. In 2017, GHG emissions from statewide emitting activities were 424 MMT. The 2017 emissions have decreased by 14 percent since peak levels in 2004 and are 7 MMT below the 1990 emissions level and the State's 2020 GHG limit. Per capita GHG emissions in California have dropped from a 2001 peak

[23] CARB. 2019. *2019 Edition, California Greenhouse Gas Emission Inventory: 2000 – 2017*. Available at https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf accessed on Nov. 26, 2019.

of 14.1 MT per person to 10.7 MT per person in 2017. The most recent Bay Area emission inventory was completed for the year 2011, where emissions were 87 MMT [24]. As a point of comparison, statewide emissions were about 444 MMT in 2011.

Climate Smart San José

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

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

The California Energy Commission (CEC) updates the California Building Energy Efficiency Standards every three years, in alignment with the California Code of regulations. Title 24 Parts 6 and 11 of the California Building Energy Efficiency Standards and the California Green Building Standards Code (CALGreen) address the need for regulations to improve energy efficiency and combat climate change. The 2019 CAL Green standards include some substantial changes intended to increase the energy efficiency of buildings. For example, the code encourages the installation of solar and heat pump water heaters in low-rise residential buildings. The 2019 California Code went before City Council in October 2019 for approval, with an effective date of January 1, 2020. As part of this action, the City adopted a "reach code" that requires development projects to exceed the minimum Building Energy Efficiency requirements.[25] The City's reach code applies only to new residential and non-residential construction in San José. It incentivizes all-electric construction, requires increased energy efficiency and electrification-readiness for those choosing to maintain the presence of natural gas. The code requires that non-residential construction include solar readiness. It also requires additional EV charging readiness and/or electric vehicle service equipment (EVSE) installation for all development types.

BAAQMD Significance Thresholds

The BAAQMD's CEQA Air Quality Guidelines recommended a GHG threshold of 1,100 metric tons or 4.6 metric tons (MT) per capita. These thresholds were developed based on meeting the 2020 GHG targets set in the scoping plan that addressed AB 32. Development of the project would occur beyond 2020, so a threshold that addresses a future target is appropriate. Although BAAQMD has not published a quantified threshold for 2030 yet, this assessment uses a "Substantial Progress" efficiency metric of 2.6 MT CO_2e/year/service population and a bright-line threshold of 660 MT CO_{2e}/year based on the GHG reduction goals of EO B-30-15. The service

[24] BAAQMD. 2015. *Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011*. January. Available at http://www.baaqmd.gov/~/media/files/planning-and-research/emission-inventory/by2011_ghgsummary.pdf accessed Nov. 26, 2019.

[25] City of San José Transportation and Environmental Committee, *Building Reach Code for New Construction Memorandum,* August 2019.

population metric of 2.6 is calculated for 2030 based on the 1990 inventory and the projected 2030 statewide population and employment levels.[26] The 2030 bright-line threshold is a 40 percent reduction of the 2020 1,100 MT CO_{2e}/year threshold.

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

GHG emissions associated with development of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal. The impact of GHG emissions were addressed in the DTS DEIR and found to be significant and unavoidable under 2040 conditions. Emissions from the project were computed for information purposes. Emissions for the proposed project are discussed below and were analyzed using the methodology recommended in the BAAQMD CEQA Air Quality Guidelines.

CalEEMod Modeling

CalEEMod was used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model, as described above within the operational period emissions. CalEEMod output is included in *Attachment 2*.

Service Population Emissions

The project service population efficiency rate is based on the number of future full-time employees. For this project, the number of workers was estimated using a rate of approximately one office worker per 300-sf of traditional office space and one retail worker per 250-sf of small retail space.[27] Based on the project's proposed 628,500-sf for office use and 11,500-sf for retail use, there would be 2,141 future full-time employees.

Construction Emissions

GHG emissions associated with construction were computed to be 2,228 MT of CO_{2e} for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BAAQMD have an adopted threshold of significance for construction-related GHG emissions, though BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable.

[26] Association of Environmental Professionals, 2016. *Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California*. April.
[27] Strategic Economics. 2016. *San* José *Market Overview and Employment Lands Analysis*. January 20.

Operational Emissions

The CalEEMod model, along with the project vehicle trip generation rates, was used to estimate daily emissions associated with operation of the fully-developed site under the proposed project. The effects from a TDM program or other project-specific sustainability measures were not included in this analysis. The project's GHG threshold in metric tons per year and the service population threshold in the opening and future year were calculated.

As shown in Table 8, annual emissions resulting from operation of the proposed project are predicted to be 3,544 MT of CO_2e in 2024 and 3,183 MT of CO_2e in 2030. The service population emission for the years 2024 and 2030 are predicted to be 1.7 and 1.5 MT/CO_2e/year/service population, respectively.

The project would exceed the 2030 operational annual emissions bright-line threshold of 660 MT CO_2e/year in both the opening and future year. However, the project would not exceed the service population emissions "Substantial Progress" efficiency metric of 2.6 MT CO_2e/year/service population in either 2024 or 2030.

Table 8. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	Proposed Project	
	2024	**2030**
Area	0.0	0.0
Energy Consumption	553.8	553.8
Mobile	2539.0	2178.0
Solid Waste Generation	300.0	300.0
Water Usage	151.0	151.0
Total Emissions (MT CO_2e/year)	**3,543.8**	**3,182.8**
Bright-Line Significance Threshold	***660 MT CO_2e/year***	
Service Population Emissions (MT CO2e/year/service population)	1.7	1.5
Per Capita Significance Threshold	***2.6 MT of CO2e/year/service population***	
Exceed both thresholds?	*No*	*No*

Supporting Documentation

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

Attachment 2 includes the CalEEMod output for project construction and operational criteria air pollutant and GHG emissions. The operational outputs for 2030 uses are also included in this attachment. Also included are any modeling assumptions.

Attachment 3 includes the EMFAC2017 emissions modeling. The input files for these calculations are voluminous and are available upon request in digital format.

Attachment 4 is the construction and operational health risk assessments. AERMOD dispersion modeling files for these assessments, which are quite voluminous, are available upon request and would be provided in digital format.

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

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.[28] 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.[29] 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.[30] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

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

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

[28] 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.
[29] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[30] 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

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

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

Parameter	*Exposure Type* →	Infant		Child	Adult
	Age Range →	3rd Trimester	0<2	2 < 16	16 - 30
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		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*

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: 50 Almaden Tower

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load factor

Project Size

	Dwelling Units	1 total project acres disturbed
	s.f. residential	
11,500	s.f. retail	
628,500	s.f. office/commercial	
	s.f. other, specify:	
317,540	s.f. parking garage	728 spaces
	s.f. parking lot	spaces

Construction Hours 7 am to 4 pm

Pile Driving? N

Project include OPERATIONAL GENERATOR OR FIRE PUMP on-site? Y/N? __Y__

IF YES (if BOTH separate values) -->

Kilowatts/Horsepower: _____1500kW, 2011HP_____

Fuel Type: _____Diesel_____

Location in project (Plans Desired if Available): Level 1 Generator Room

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	Annual Hours	HP hrs	Comments
	Demolition	**Start Date:**	**1/4/2021**	**Total phase:**	**5**				**Overall Import/Export Volumes**
		End Date:	**1/8/2021**						
1	Concrete/Industrial Saws	81	0.73	8	5	8	40	2,365	**Demolition Volume**
1	Excavators	158	0.38	8	5	8	40	2,402	Square footage of buildings to be demolished
	Rubber-Tired Dozers					0	0	-	(*or* total tons to be hauled)
1	Tractors/Loaders/Backhoes	97	0.37	8	5	8	40	1,436	43,122_ square feet *or*
									_?_ Hauling volume (tons)
									Any pavement demolished and hauled? _?_ tons
	Site Preparation	**Start Date:**	**TBD**	**Total phase:**					
		End Date:	**TBD**						
	Graders					#DIV/0!	0	-	
	Rubber Tired Dozers					#DIV/0!	0	-	
	Tractors/Loaders/Backhoes					#DIV/0!	0	-	
	Grading / Excavation	**Start Date:**	**1/9/2021**	**Total phase:**	**55**				
		End Date:	**3/26/2021**						**Soil Hauling Volume**
1	Excavators	158	0.38	8	55	8	440	26,418	Export volume = 68,000 cubic yards?
1	Graders	187	0.41	8	5	0.7	40	3,067	Import volume = _?_cubic yards?
1	Rubber Tired Dozers	247	0.4	8	55	8	440	43,472	
0	Concrete/Industrial Saws					0	0	-	
1	Tractors/Loaders/Backhoes	97	0.37	8	55	8	440	15,792	
	Other Equipment?								
	Trenching/Foundation	**Start Date:**	**3/27/2021**	**Total phase:**	**20**				
		End Date:	**4/23/2021**						
2	Tractor/Loader/Backhoe	97	0.37	8	2	0.8	32	1,148	
2	Excavators	158	0.38	8	2	0.8	32	1,921	
	Other Equipment?								
	Building - Structure & Exterio	**Start Date:**	**4/24/2021**	**Total phase:**	**400**				**Cement Trucks? _2,350_ Total Round-Trips**
		End Date:	**11/4/2022**						
1	Cranes (Tower Crane)	231	0.29	8	400	8	3200	214,368	Electric? _Y_ Otherwise assumed diesel
2	Forklifts	89	0.2	8	375	7.5	6000	106,800	Liquid Propane (LPG)? (Y/N) ___ Otherwise Assumed diesel
1	Generator Sets	84	0.74	8	400	8	3200	198,912	Or temporary line power? (Y/N) _TBD_
	Tractors/Loaders/Backhoes					0	0	-	
3	Welders	46	0.45	8	375	7.5	9000	186,300	
	Other Equipment?					0			
	Building - Interior/Architectural Coatin	**Start Date:**	**11/5/2022**	**Total phase:**	**150**				
		End Date:	**6/2/2023**						
10	Air Compressors	78	0.48	8	150	8	12000	449,280	
10	Aerial Lift	63	0.31	8	150	8	12000	234,360	
	Other Equipment?								
	Paving	**Start Date:**	**6/3/2023**	**Total phase:**	**3**				
		Start Date:	**6/7/2023**						
1	Cement and Mortar Mixers	9	0.56	8	3	8	24	121	
1	Pavers	132	0.42	8	3	8	24	1,331	**Asphalt? _126_ cubic yards or _?_ round trips?**
1	Paving Equipment	130	0.36	8	3	8	24	1,123	
2	Rollers	80	0.38	8	3	8	48	1,459	
	Tractors/Loaders/Backhoes					0	0	-	
	Other Equipment?								

Equipment types listed in "Equipment Types" worksheet tab.

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

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horepower or load factor, as appropriate

Complete one sheet for each project component

Table 2
Project Trip Generation Estimates

Land Use	ITE Land Use Code	Location	% of Vehicle Mode Share	% Reduction	Size	Daily		AM Peak Hour						PM Peak Hour					
						Rate	Trip	Pk-Hr Rate	Split In	Split Out	Trip In	Trip Out	Trip Total	Pk-Hr Rate	Split In	Split Out	Trip In	Trip Out	Trip Total
Proposed Land Use																			
General Office Building[1]	710				628,500 Square Feet	9.74	6,122	1.160	86%	14%	627	102	729	1.15	16%	84%	116	607	723
- Office - Retail Internal Reduction[2]							*-217*				*-2*	*-4*	*-6*				*-3*	*-18*	*-21*
- Location Based Reduction[3]		*Urban High-Transit*	*69%*	*31%*			*-1,831*				*-194*	*-31*	*-225*				*-35*	*-183*	*-218*
Shopping Center[1]	820				11,500 Square Feet	37.75	434	0.940	62%	38%	7	4	11	3.81	48%	52%	21	23	44
- Office - Retail Internal Reduction[2]				*50%*			*-217*				*-4*	*-2*	*-6*				*-18*	*-3*	*-21*
- Location Based Reduction[3]		*Urban High-Transit*	*83%*	*17%*			*-37*				*-1*	*0*	*-1*				*0*	*-3*	*-3*
Baseline Vehicle Trips (Before Reductions)							6,556				634	106	740				137	630	767
Gross Project Trips After Reductions							**4,254**				**433**	**69**	**502**				**81**	**423**	**504**
Project Trips at Driveways																			
Total Project Trips at Site Driveways[4]							**4,074**				**431**	**67**	**498**				**78**	**406**	**484**
Trips at Almaden Avenue Driveway (Above-Grade Levels)											***185***	***29***	***214***				***33***	***175***	***208***
Trips at Almaden Boulevard Driveway (Basement Levels)											***246***	***38***	***284***				***44***	***232***	***276***

Notes:

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

[2] As prescribed by the Transportation Impact Analysis Guidelines from VTA (October 2014), the maximum trip reduction for a mixed-use development project with employment and employee-serving retail uses is equal to 3% off the office component. A 3% reduction of office trips would result in a full reduction of all trips generated by the retail use during the AM peak-hour. However, it is likely that retail use will generate some external trips. As a conservative measure, only a 50 percent reduction of retail trips during the AM peak hour was applied instead of a full reduction of all retail trips.

[3] The project site is located within an urban high-transit area based on the City of San Jose VMT Evaluation Tool (February 29, 2019). The location-based vehicle mode shares are obtained from Table 6 of the City of San Jose Transportation Analysis Handbook (April 2018). The trip reductions are based on the percent of mode share for all of the other modes of travel beside vehicle.

[4] Per City code 20.70.100 (Table 20-140), the project is not required to provide on-site parking for the proposed retail use. Therefore, project trips at site driveways will consist of traffic generated by the office use only.

50 Almaden Office, San Jose - Santa Clara County, Annual

50 Almaden Office, 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	628.50	1000sqft	1.00	628,500.00	0
Enclosed Parking with Elevator	728.00	Space	0.00	317,540.00	0
Strip Mall	11.50	1000sqft	0.00	11,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2017 co2 rate = 210

Land Use - Provided land uses

Construction Phase - Provided construction schedule

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Trips and VMT - 0 trips EMFAC2017, 2,350 cement truck total round trips, 126cy asphalt = 15 tound trips

Demolition - existing building demo = 43,122sf

Grading - grading = 68,000cy export

Vehicle Trips - w/ reductions, office = 6.48, 1.45, 0.62, retail = 15.62, 14.82, 7.20

Vehicle Emission Factors - EMFAC2017

Water And Wastewater - WWTP 100% aerobic

Construction Off-road Equipment Mitigation - BMPs, Tier 4 interim mitigation, Electric crane, air compressor, generator, welders

Energy Mitigation - SJCE 100% carbon free renewable energy

Stationary Sources - Emergency Generators and Fire Pumps - one 1500kW, 2011HP emergency diesel powered generator, 50hours/year operation

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
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
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	150.00
tblConstructionPhase	NumDays	100.00	400.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	55.00
tblConstructionPhase	NumDays	5.00	3.00
tblFleetMix	HHD	0.02	0.02
tblFleetMix	HHD	0.02	0.02
tblFleetMix	HHD	0.02	0.02
tblFleetMix	LDA	0.61	0.59
tblFleetMix	LDA	0.61	0.59
tblFleetMix	LDA	0.61	0.59
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT2	0.18	0.18
tblFleetMix	LDT2	0.18	0.18
tblFleetMix	LDT2	0.18	0.18

tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD2	5.0150e-003	5.3030e-003
tblFleetMix	LHD2	5.0150e-003	5.3030e-003
tblFleetMix	LHD2	5.0150e-003	5.3030e-003
tblFleetMix	MCY	5.2490e-003	5.0760e-003
tblFleetMix	MCY	5.2490e-003	5.0760e-003
tblFleetMix	MCY	5.2490e-003	5.0760e-003
tblFleetMix	MDV	0.10	0.11
tblFleetMix	MDV	0.10	0.11
tblFleetMix	MDV	0.10	0.11
tblFleetMix	MH	7.0400e-004	7.5200e-004
tblFleetMix	MH	7.0400e-004	7.5200e-004
tblFleetMix	MH	7.0400e-004	7.5200e-004
tblFleetMix	MHD	0.01	0.01
tblFleetMix	MHD	0.01	0.01
tblFleetMix	MHD	0.01	0.01
tblFleetMix	OBUS	2.1770e-003	1.5890e-003
tblFleetMix	OBUS	2.1770e-003	1.5890e-003
tblFleetMix	OBUS	2.1770e-003	1.5890e-003
tblFleetMix	SBUS	6.3200e-004	9.2000e-004
tblFleetMix	SBUS	6.3200e-004	9.2000e-004
tblFleetMix	SBUS	6.3200e-004	9.2000e-004
tblFleetMix	UBUS	1.5140e-003	1.2480e-003
tblFleetMix	UBUS	1.5140e-003	1.2480e-003
tblFleetMix	UBUS	1.5140e-003	1.2480e-003
tblGrading	MaterialExported	0.00	68,000.00
tblLandUse	LandUseSquareFeet	291,200.00	317,540.00
tblLandUse	LotAcreage	14.43	1.00

tblLandUse	LotAcreage	6.55	0.00
tblLandUse	LotAcreage	0.26	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	10.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	7.50
tblOffRoadEquipment	UsageHours	6.00	0.70
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	7.50
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	2,011.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	196.00	0.00
tblTripsAndVMT	HaulingTripNumber	8,500.00	0.00
tblTripsAndVMT	VendorTripNumber	157.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00

tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	338.00	0.00
tblTripsAndVMT	WorkerTripNumber	68.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
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tblVehicleEF	HHD	0.05	0.05
tblVehicleEF	HHD	0.07	0.00
tblVehicleEF	HHD	1.57	6.33
tblVehicleEF	HHD	0.92	0.40
tblVehicleEF	HHD	3.67	5.9420e-003
tblVehicleEF	HHD	4,319.24	1,048.88
tblVehicleEF	HHD	1,548.08	1,413.90
tblVehicleEF	HHD	11.68	0.05
tblVehicleEF	HHD	13.63	5.39
tblVehicleEF	HHD	1.93	2.69
tblVehicleEF	HHD	19.37	2.32
tblVehicleEF	HHD	7.2790e-003	2.5820e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	6.1410e-003	0.02
tblVehicleEF	HHD	1.0800e-004	1.0000e-006
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tblVehicleEF	HHD	8.8360e-003	8.8830e-003
tblVehicleEF	HHD	5.8750e-003	0.02
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tblVehicleEF	HHD	9.5000e-005	2.0000e-006
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tblVehicleEF	HHD	0.41	0.43

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tblVehicleEF	HHD	5.9000e-005	1.0000e-006
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tblVehicleEF	HHD	0.10	3.0000e-006
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tblVehicleEF	LDA	0.06	0.17
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tblVehicleEF	LDA	1.4690e-003	1.1940e-003
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tblVehicleEF	LDA	0.08	0.08
tblVehicleEF	LDA	0.02	0.03
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tblVehicleEF	LDA	0.06	0.19
tblVehicleEF	LDA	2.2460e-003	9.3000e-005
tblVehicleEF	LDA	5.4600e-004	0.00
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.08	0.08
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.01	9.3280e-003
tblVehicleEF	LDA	0.04	0.20
tblVehicleEF	LDA	0.06	0.21
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tblVehicleEF	LDT1	9.7160e-003	0.06
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tblVehicleEF	LDT1	0.09	0.07
tblVehicleEF	LDT1	0.11	0.21
tblVehicleEF	LDT1	2.1030e-003	1.6460e-003
tblVehicleEF	LDT1	2.8260e-003	2.1080e-003
tblVehicleEF	LDT1	1.9360e-003	1.5150e-003
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tblVehicleEF	LDT1	0.19	0.15
tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.14	0.54
tblVehicleEF	LDT1	0.13	0.27
tblVehicleEF	LDT1	2.8300e-003	2.6190e-003
tblVehicleEF	LDT1	6.9600e-004	0.00

tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.19	0.15
tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.03	0.02
tblVehicleEF	LDT1	0.14	0.54
tblVehicleEF	LDT1	0.14	0.30
tblVehicleEF	LDT2	4.5890e-003	2.9320e-003
tblVehicleEF	LDT2	5.7820e-003	0.06
tblVehicleEF	LDT2	0.65	0.74
tblVehicleEF	LDT2	1.32	2.70
tblVehicleEF	LDT2	319.72	301.75
tblVehicleEF	LDT2	74.64	65.36
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.09	0.25
tblVehicleEF	LDT2	1.6510e-003	1.3470e-003
tblVehicleEF	LDT2	2.3140e-003	1.7010e-003
tblVehicleEF	LDT2	1.5190e-003	1.2400e-003
tblVehicleEF	LDT2	2.1270e-003	1.5640e-003
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.10	0.12
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.07	0.41
tblVehicleEF	LDT2	0.08	0.28
tblVehicleEF	LDT2	3.2020e-003	0.01
tblVehicleEF	LDT2	7.6800e-004	9.1000e-005
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tblVehicleEF	LDT2	0.10	0.12
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.02	0.02

tblVehicleEF	LDT2	0.07	0.41
tblVehicleEF	LDT2	0.09	0.31
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tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.15	0.18
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tblVehicleEF	LHD1	2.42	1.05
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tblVehicleEF	LHD1	679.88	779.34
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tblVehicleEF	LHD1	0.07	0.06
tblVehicleEF	LHD1	1.00	0.65
tblVehicleEF	LHD1	0.94	0.30
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tblVehicleEF	LHD1	0.01	9.7790e-003
tblVehicleEF	LHD1	0.01	9.6230e-003
tblVehicleEF	LHD1	9.0500e-004	2.4700e-004
tblVehicleEF	LHD1	8.2000e-004	8.0500e-004
tblVehicleEF	LHD1	2.5360e-003	2.4450e-003
tblVehicleEF	LHD1	0.01	9.1590e-003
tblVehicleEF	LHD1	8.3200e-004	2.2800e-004
tblVehicleEF	LHD1	2.5370e-003	1.9120e-003
tblVehicleEF	LHD1	0.10	0.07
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.3080e-003	9.8500e-004
tblVehicleEF	LHD1	0.12	0.09
tblVehicleEF	LHD1	0.32	0.50
tblVehicleEF	LHD1	0.24	0.07
tblVehicleEF	LHD1	9.0000e-005	8.6000e-005

tblVehicleEF	LHD1	6.6680e-003	7.6080e-003
tblVehicleEF	LHD1	3.6000e-004	1.1400e-004
tblVehicleEF	LHD1	2.5370e-003	1.9120e-003
tblVehicleEF	LHD1	0.10	0.07
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	1.3080e-003	9.8500e-004
tblVehicleEF	LHD1	0.14	0.11
tblVehicleEF	LHD1	0.32	0.50
tblVehicleEF	LHD1	0.26	0.08
tblVehicleEF	LHD2	3.1970e-003	3.0380e-003
tblVehicleEF	LHD2	7.0200e-003	6.6540e-003
tblVehicleEF	LHD2	5.9370e-003	7.7290e-003
tblVehicleEF	LHD2	0.12	0.14
tblVehicleEF	LHD2	0.53	0.59
tblVehicleEF	LHD2	1.09	0.60
tblVehicleEF	LHD2	13.93	13.88
tblVehicleEF	LHD2	699.69	754.92
tblVehicleEF	LHD2	23.61	7.59
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.59	0.77
tblVehicleEF	LHD2	0.41	0.17
tblVehicleEF	LHD2	1.2120e-003	1.4370e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	4.0000e-004	1.2700e-004
tblVehicleEF	LHD2	1.1590e-003	1.3750e-003
tblVehicleEF	LHD2	2.6950e-003	2.6920e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.6800e-004	1.1700e-004
tblVehicleEF	LHD2	7.4700e-004	9.8500e-004

tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	4.0800e-004	5.1400e-004
tblVehicleEF	LHD2	0.10	0.11
tblVehicleEF	LHD2	0.06	0.25
tblVehicleEF	LHD2	0.08	0.04
tblVehicleEF	LHD2	1.3600e-004	1.3300e-004
tblVehicleEF	LHD2	6.8030e-003	7.2890e-003
tblVehicleEF	LHD2	2.5500e-004	7.5000e-005
tblVehicleEF	LHD2	7.4700e-004	9.8500e-004
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.0800e-004	5.1400e-004
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.06	0.25
tblVehicleEF	LHD2	0.09	0.04
tblVehicleEF	MCY	0.45	0.33
tblVehicleEF	MCY	0.16	0.25
tblVehicleEF	MCY	18.47	18.60
tblVehicleEF	MCY	10.21	9.06
tblVehicleEF	MCY	170.05	210.08
tblVehicleEF	MCY	44.74	60.71
tblVehicleEF	MCY	1.14	1.15
tblVehicleEF	MCY	0.32	0.27
tblVehicleEF	MCY	2.0290e-003	1.9970e-003
tblVehicleEF	MCY	3.5220e-003	2.9300e-003
tblVehicleEF	MCY	1.8960e-003	1.8650e-003
tblVehicleEF	MCY	3.3110e-003	2.7520e-003
tblVehicleEF	MCY	0.90	1.80
tblVehicleEF	MCY	0.68	0.68

tblVehicleEF	MCY	0.49	0.98
tblVehicleEF	MCY	2.18	2.19
tblVehicleEF	MCY	0.58	1.89
tblVehicleEF	MCY	2.18	1.93
tblVehicleEF	MCY	2.0670e-003	2.0790e-003
tblVehicleEF	MCY	6.7900e-004	6.0100e-004
tblVehicleEF	MCY	0.90	1.80
tblVehicleEF	MCY	0.68	0.68
tblVehicleEF	MCY	0.49	0.98
tblVehicleEF	MCY	2.71	2.72
tblVehicleEF	MCY	0.58	1.89
tblVehicleEF	MCY	2.38	2.10
tblVehicleEF	MDV	8.4590e-003	3.4000e-003
tblVehicleEF	MDV	0.01	0.07
tblVehicleEF	MDV	0.97	0.78
tblVehicleEF	MDV	2.43	2.96
tblVehicleEF	MDV	429.38	364.87
tblVehicleEF	MDV	98.57	77.92
tblVehicleEF	MDV	0.12	0.07
tblVehicleEF	MDV	0.21	0.29
tblVehicleEF	MDV	1.7680e-003	1.4380e-003
tblVehicleEF	MDV	2.4430e-003	1.8100e-003
tblVehicleEF	MDV	1.6290e-003	1.3260e-003
tblVehicleEF	MDV	2.2460e-003	1.6640e-003
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.02	0.01
tblVehicleEF	MDV	0.10	0.43
tblVehicleEF	MDV	0.18	0.34

tblVehicleEF	MDV	4.2980e-003	3.6060e-003
tblVehicleEF	MDV	1.0280e-003	7.7100e-004
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.10	0.43
tblVehicleEF	MDV	0.20	0.38
tblVehicleEF	MH	0.02	9.5570e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.61	0.93
tblVehicleEF	MH	5.16	2.03
tblVehicleEF	MH	1,207.03	1,501.42
tblVehicleEF	MH	58.43	18.14
tblVehicleEF	MH	1.20	1.31
tblVehicleEF	MH	0.77	0.24
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.0680e-003	2.6100e-004
tblVehicleEF	MH	3.2200e-003	3.2790e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	9.8200e-004	2.4000e-004
tblVehicleEF	MH	0.74	0.64
tblVehicleEF	MH	0.06	0.05
tblVehicleEF	MH	0.26	0.23
tblVehicleEF	MH	0.08	0.06
tblVehicleEF	MH	0.02	1.30
tblVehicleEF	MH	0.30	0.09
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.7400e-004	1.7900e-004

tblVehicleEF	MH	0.74	0.64
tblVehicleEF	MH	0.06	0.05
tblVehicleEF	MH	0.26	0.23
tblVehicleEF	MH	0.11	0.08
tblVehicleEF	MH	0.02	1.30
tblVehicleEF	MH	0.33	0.10
tblVehicleEF	MHD	0.02	3.5790e-003
tblVehicleEF	MHD	4.0660e-003	1.6940e-003
tblVehicleEF	MHD	0.04	9.1320e-003
tblVehicleEF	MHD	0.37	0.39
tblVehicleEF	MHD	0.33	0.23
tblVehicleEF	MHD	5.40	1.07
tblVehicleEF	MHD	133.37	72.08
tblVehicleEF	MHD	1,186.25	1,080.76
tblVehicleEF	MHD	60.77	9.15
tblVehicleEF	MHD	0.36	0.41
tblVehicleEF	MHD	1.10	1.45
tblVehicleEF	MHD	10.18	1.70
tblVehicleEF	MHD	1.0800e-004	3.6900e-004
tblVehicleEF	MHD	3.1100e-003	7.0230e-003
tblVehicleEF	MHD	8.7400e-004	1.1500e-004
tblVehicleEF	MHD	1.0300e-004	3.5300e-004
tblVehicleEF	MHD	2.9690e-003	6.7130e-003
tblVehicleEF	MHD	8.0400e-004	1.0600e-004
tblVehicleEF	MHD	8.3100e-004	3.8300e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	4.4000e-004	1.9800e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.02	0.10

tblVehicleEF	MHD	0.32	0.05
tblVehicleEF	MHD	1.2850e-003	6.8400e-004
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	7.0200e-004	9.1000e-005
tblVehicleEF	MHD	8.3100e-004	3.8300e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	4.4000e-004	1.9800e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.02	0.10
tblVehicleEF	MHD	0.35	0.05
tblVehicleEF	OBUS	0.01	7.0640e-003
tblVehicleEF	OBUS	5.8410e-003	3.6240e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.24	0.58
tblVehicleEF	OBUS	0.41	0.43
tblVehicleEF	OBUS	4.81	1.84
tblVehicleEF	OBUS	100.21	92.66
tblVehicleEF	OBUS	1,290.88	1,326.08
tblVehicleEF	OBUS	66.64	15.18
tblVehicleEF	OBUS	0.21	0.38
tblVehicleEF	OBUS	0.91	1.47
tblVehicleEF	OBUS	2.68	1.09
tblVehicleEF	OBUS	1.9000e-005	1.2200e-004
tblVehicleEF	OBUS	2.7550e-003	7.3930e-003
tblVehicleEF	OBUS	8.3600e-004	1.4500e-004
tblVehicleEF	OBUS	1.9000e-005	1.1700e-004
tblVehicleEF	OBUS	2.6160e-003	7.0600e-003
tblVehicleEF	OBUS	7.6900e-004	1.3300e-004
tblVehicleEF	OBUS	1.1720e-003	1.0900e-003

tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	5.1800e-004	4.8500e-004
tblVehicleEF	OBUS	0.04	0.02
tblVehicleEF	OBUS	0.03	0.18
tblVehicleEF	OBUS	0.30	0.09
tblVehicleEF	OBUS	9.6800e-004	8.8000e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.5100e-004	1.5000e-004
tblVehicleEF	OBUS	1.1720e-003	1.0900e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.04	0.06
tblVehicleEF	OBUS	5.1800e-004	4.8500e-004
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	0.03	0.18
tblVehicleEF	OBUS	0.33	0.10
tblVehicleEF	SBUS	0.82	0.05
tblVehicleEF	SBUS	0.02	6.0180e-003
tblVehicleEF	SBUS	0.07	4.9720e-003
tblVehicleEF	SBUS	8.25	2.27
tblVehicleEF	SBUS	0.95	0.49
tblVehicleEF	SBUS	9.30	0.72
tblVehicleEF	SBUS	1,096.83	346.78
tblVehicleEF	SBUS	1,045.14	1,049.23
tblVehicleEF	SBUS	56.99	4.12
tblVehicleEF	SBUS	7.84	3.44
tblVehicleEF	SBUS	3.38	4.65
tblVehicleEF	SBUS	11.88	0.86
tblVehicleEF	SBUS	6.9900e-003	3.6120e-003
tblVehicleEF	SBUS	0.01	0.01

tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	9.2200e-004	4.8000e-005
tblVehicleEF	SBUS	6.6880e-003	3.4560e-003
tblVehicleEF	SBUS	2.6210e-003	2.7190e-003
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	8.4800e-004	4.4000e-005
tblVehicleEF	SBUS	3.3520e-003	5.6700e-004
tblVehicleEF	SBUS	0.04	5.5090e-003
tblVehicleEF	SBUS	0.98	0.25
tblVehicleEF	SBUS	1.4930e-003	2.4700e-004
tblVehicleEF	SBUS	0.10	0.08
tblVehicleEF	SBUS	0.02	0.04
tblVehicleEF	SBUS	0.46	0.03
tblVehicleEF	SBUS	0.01	3.3010e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	7.3000e-004	4.1000e-005
tblVehicleEF	SBUS	3.3520e-003	5.6700e-004
tblVehicleEF	SBUS	0.04	5.5090e-003
tblVehicleEF	SBUS	1.42	0.36
tblVehicleEF	SBUS	1.4930e-003	2.4700e-004
tblVehicleEF	SBUS	0.13	0.10
tblVehicleEF	SBUS	0.02	0.04
tblVehicleEF	SBUS	0.51	0.03
tblVehicleEF	UBUS	0.23	1.35
tblVehicleEF	UBUS	0.04	1.5380e-003
tblVehicleEF	UBUS	4.19	10.12
tblVehicleEF	UBUS	7.24	0.14
tblVehicleEF	UBUS	2,047.05	1,597.16
tblVehicleEF	UBUS	107.16	1.39
tblVehicleEF	UBUS	8.64	0.73

tblVehicleEF	UBUS	14.31	0.01
tblVehicleEF	UBUS	0.59	0.07
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.19	5.3280e-003
tblVehicleEF	UBUS	1.1060e-003	1.5000e-005
tblVehicleEF	UBUS	0.25	0.03
tblVehicleEF	UBUS	3.0000e-003	8.3320e-003
tblVehicleEF	UBUS	0.18	5.0960e-003
tblVehicleEF	UBUS	1.0170e-003	1.4000e-005
tblVehicleEF	UBUS	1.8960e-003	2.1000e-005
tblVehicleEF	UBUS	0.03	1.6100e-004
tblVehicleEF	UBUS	9.9500e-004	9.0000e-006
tblVehicleEF	UBUS	0.45	0.02
tblVehicleEF	UBUS	7.1180e-003	8.1400e-004
tblVehicleEF	UBUS	0.55	6.4070e-003
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	1.2020e-003	1.4000e-005
tblVehicleEF	UBUS	1.8960e-003	2.1000e-005
tblVehicleEF	UBUS	0.03	1.6100e-004
tblVehicleEF	UBUS	9.9500e-004	9.0000e-006
tblVehicleEF	UBUS	0.73	1.38
tblVehicleEF	UBUS	7.1180e-003	8.1400e-004
tblVehicleEF	UBUS	0.61	7.0150e-003
tblVehicleTrips	ST_TR	2.46	1.45
tblVehicleTrips	ST_TR	42.04	14.82
tblVehicleTrips	SU_TR	1.05	0.62
tblVehicleTrips	SU_TR	20.43	7.20
tblVehicleTrips	WD_TR	11.03	6.48
tblVehicleTrips	WD_TR	44.32	15.62
tblWater	AerobicPercent	87.46	100.00

tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	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					
2021	0.2119	1.7555	1.4437	2.5500e-003	0.1920	0.0881	0.2801	0.0950	0.0838	0.1788	0.0000	213.4338	213.4338	0.0456	0.0000	214.5740
2022	1.1557	1.9402	2.0775	3.5900e-003	0.0000	0.0933	0.0933	0.0000	0.0905	0.0905	0.0000	301.4590	301.4590	0.0509	0.0000	302.7313
2023	2.6565	1.2594	1.9429	3.1300e-003	0.0000	0.0575	0.0575	0.0000	0.0571	0.0571	0.0000	270.2946	270.2946	0.0381	0.0000	271.2458
Maximum	**2.6565**	**1.9402**	**2.0775**	**3.5900e-003**	**0.1920**	**0.0933**	**0.2801**	**0.0950**	**0.0905**	**0.1788**	**0.0000**	**301.4590**	**301.4590**	**0.0509**	**0.0000**	**302.7313**

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					
2021	0.0145	0.3012	0.5390	2.5500e-003	0.0864	1.29E-03	0.0877	0.0214	1.2900e-003	0.0227	0.0000	69.3025	69.3025	0.0221	0.0000	69.8540
2022	0.9230	0.3273	0.4945	3.5900e-003	0.0000	8.23E-03	8.2300e-003	0.0000	8.2300e-003	8.2300e-003	0.0000	57.2028	57.2028	0.0185	0.0000	57.6653
2023	2.5189	0.5283	0.7169	3.1300e-003	0.0000	0.0213	0.0213	0.0000	0.0213	0.0213	0.0000	83.0559	83.0559	0.0269	0.0000	83.7271
Maximum	**2.5189**	**0.5283**	**0.7169**	**3.5900e-003**	**0.0864**	**0.0213**	**0.0877**	**0.0214**	**0.0213**	**0.0227**	**0.0000**	**83.0559**	**83.0559**	**0.0269**	**0.0000**	**83.7271**

	ROG	NOx	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	**14.11**	**76.65**	**67.97**	**0.00**	**55.00**	**87.13**	**72.82**	**77.50**	**86.70**	**84.03**	**0.00**	**73.31**	**73.31**	**49.90**	**0.00**	**73.21**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-4-2021**	**4-3-2021**	0.4853	0.1867
2	**4-4-2021**	**7-3-2021**	0.4206	0.0390
3	**7-4-2021**	**10-3-2021**	0.5367	0.0435
4	**10-4-2021**	**1-3-2022**	0.5352	0.0435
5	**1-4-2022**	**4-3-2022**	0.4789	0.0426
6	**4-4-2022**	**7-3-2022**	0.4842	0.0430
7	**7-4-2022**	**10-3-2022**	0.4895	0.0435
8	**10-4-2022**	**1-3-2023**	1.7293	1.1986
9	**1-4-2023**	**4-3-2023**	2.2817	1.7753
10	**4-4-2023**	**7-3-2023**	1.5351	1.1949
		Highest	2.2817	1.7753

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	2.8616	1.1000e-004	0.0126	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0244	0.0244	6.0000e-005	0.0000	0.0260
Energy	0.0556	0.5057	0.4248	3.0300e-003		0.0384	0.0384		0.0384	0.0384	0.0000	1,806.8839	1,806.8839	0.1841	0.0460	1,825.1901
Mobile	1.1306	1.7950	9.1042	0.0265	2.8427	0.0212	2.8639	0.7605	0.0198	0.7804	0.0000	2,536.1891	2,536.1891	0.1112	0.0000	2,538.9680
Stationary	0.0825	0.3690	0.2104	4.0000e-004		0.0121	0.0121		0.0121	0.0121	0.0000	38.2892	38.2892	5.3700e-003	0.0000	38.4234
Waste						0.0000	0.0000		0.0000	0.0000	121.1004	0.0000	121.1004	7.1568	0.0000	300.0210
Water						0.0000	0.0000		0.0000	0.0000	39.8230	81.0141	120.8371	0.1483	0.0889	151.0407
Total	**4.1303**	**2.6698**	**9.7519**	**0.0299**	**2.8427**	**0.0718**	**2.9145**	**0.7605**	**0.0705**	**0.8310**	**160.9234**	**4,462.4007**	**4,623.3241**	**7.6057**	**0.1349**	**4,853.6691**

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	2.8616	1.1000e-004	0.0126	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0244	0.0244	6.0000e-005	0.0000	0.0260
Energy	0.0556	0.5057	0.4248	3.0300e-003		0.0384	0.0384		0.0384	0.0384	0.0000	550.4904	550.4904	0.0106	0.0101	553.7617
Mobile	1.1306	1.7950	9.1042	0.0265	2.8427	0.0212	2.8639	0.7605	0.0198	0.7804	0.0000	2,536.1891	2,536.1891	0.1112	0.0000	2,538.9680
Stationary	0.0825	0.3690	0.2104	4.0000e-004		0.0121	0.0121		0.0121	0.0121	0.0000	38.2892	38.2892	5.3700e-003	0.0000	38.4234
Waste						0.0000	0.0000		0.0000	0.0000	121.1004	0.0000	121.1004	7.1568	0.0000	300.0210
Water						0.0000	0.0000		0.0000	0.0000	39.8230	81.0141	120.8371	0.1483	0.0889	151.0407
Total	**4.1303**	**2.6698**	**9.7519**	**0.0299**	**2.8427**	**0.0718**	**2.9145**	**0.7605**	**0.0705**	**0.8310**	**160.9234**	**3,206.0072**	**3,366.9306**	**7.4322**	**0.0990**	**3,582.2407**

	ROG	NOx	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**	**28.16**	**27.18**	**2.28**	**26.61**	**26.20**

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	1/4/2021	1/8/2021	5	5	
2	Grading	Grading	1/9/2021	3/26/2021	5	55	
3	Trenching	Trenching	3/27/2021	4/23/2021	5	20	
4	Building Construction	Building Construction	4/24/2021	11/4/2022	5	400	
5	Architectural Coating	Architectural Coating	11/5/2022	6/2/2023	5	150	
6	Paving	Paving	6/3/2023	6/7/2023	5	3	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2.41

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 960,000; Non-Residential Outdoor: 320,000; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	1	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
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	0.70	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Excavators	2	0.80	158	0.38

Trenching	Tractors/Loaders/Backhoes	2	0.80	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.50	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Building Construction	Welders	3	7.50	46	0.45
Architectural Coating	Aerial Lifts	10	8.00	63	0.31
Architectural Coating	Air Compressors	10	8.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	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	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	20	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

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

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					0.0212	0.0000	0.0212	3.2100e-003	0.0000	3.2100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0000e-003	0.0177	0.0230	4.0000e-005		9.7000e-004	9.7000e-004		9.3000e-004	9.3000e-004	0.0000	3.1610	3.1610	6.7000e-004	0.0000	3.1776
Total	**2.0000e-003**	**0.0177**	**0.0230**	**4.0000e-005**	**0.0212**	**9.7000e-004**	**0.0222**	**3.2100e-003**	**9.3000e-004**	**4.1400e-003**	**0.0000**	**3.1610**	**3.1610**	**6.7000e-004**	**0.0000**	**3.1776**

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					
Fugitive Dust					9.5500e-003	0.0000	9.5500e-003	7.2000e-004	0.0000	7.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.2000e-004	0.0147	0.0253	4.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	3.1610	3.1610	6.7000e-004	0.0000	3.1776
Total	**6.2000e-004**	**0.0147**	**0.0253**	**4.0000e-005**	**9.5500e-003**	**5.0000e-005**	**9.6000e-003**	**7.2000e-004**	**5.0000e-005**	**7.7000e-004**	**0.0000**	**3.1610**	**3.1610**	**6.7000e-004**	**0.0000**	**3.1776**

Mitigated Construction Off-Site

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

3.3 Grading - 2021

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					0.1707	0.0000	0.1707	0.0918	0.0000	0.0918	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0413	0.4273	0.2674	4.8000e-004		0.0210	0.0210		0.0194	0.0194	0.0000	42.0265	42.0265	0.0136	0.0000	42.3663
Total	**0.0413**	**0.4273**	**0.2674**	**4.8000e-004**	**0.1707**	**0.0210**	**0.1918**	**0.0918**	**0.0194**	**0.1111**	**0.0000**	**42.0265**	**42.0265**	**0.0136**	**0.0000**	**42.3663**

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					
Fugitive Dust					0.0768	0.0000	0.0768	0.0206	0.0000	0.0206	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.7600e-003	0.1659	0.3052	4.8000e-004		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	42.0264	42.0264	0.0136	0.0000	42.3662
Total	**7.7600e-003**	**0.1659**	**0.3052**	**4.8000e-004**	**0.0768**	**7.8000e-004**	**0.0776**	**0.0206**	**7.8000e-004**	**0.0214**	**0.0000**	**42.0264**	**42.0264**	**0.0136**	**0.0000**	**42.3662**

Mitigated Construction Off-Site

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

3.4 Trenching - 2021

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	8.3000e-004	8.1000e-003	0.0111	2.0000e-005		4.3000e-004	4.3000e-004		4.0000e-004	4.0000e-004	0.0000	1.4535	1.4535	4.7000e-004	0.0000	1.4652
Total	**8.3000e-004**	**8.1000e-003**	**0.0111**	**2.0000e-005**		**4.3000e-004**	**4.3000e-004**		**4.0000e-004**	**4.0000e-004**	**0.0000**	**1.4535**	**1.4535**	**4.7000e-004**	**0.0000**	**1.4652**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7000e-004	7.2600e-003	0.0125	2.0000e-005		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	1.4535	1.4535	4.7000e-004	0.0000	1.4652
Total	**2.7000e-004**	**7.2600e-003**	**0.0125**	**2.0000e-005**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**1.4535**	**1.4535**	**4.7000e-004**	**0.0000**	**1.4652**

Mitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2021

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	0.1678	1.3023	1.1422	2.0200e-003		0.0657	0.0657		0.0632	0.0632	0.0000	166.7928	166.7928	0.0309	0.0000	167.5649
Total	**0.1678**	**1.3023**	**1.1422**	**2.0200e-003**		**0.0657**	**0.0657**		**0.0632**	**0.0632**	**0.0000**	**166.7928**	**166.7928**	**0.0309**	**0.0000**	**167.5649**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.8300e-003	0.1134	0.1960	2.0200e-003		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	22.6616	22.6616	7.3300e-003	0.0000	22.8449
Total	**5.8300e-003**	**0.1134**	**0.1960**	**2.0200e-003**		**4.2000e-004**	**4.2000e-004**		**4.2000e-004**	**4.2000e-004**	**0.0000**	**22.6616**	**22.6616**	**7.3300e-003**	**0.0000**	**22.8449**

Mitigated Construction Off-Site

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

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1864	1.4525	1.3751	2.4600e-003		0.0695	0.0695		0.0668	0.0668	0.0000	203.8670	203.8670	0.0369	0.0000	204.7899
Total	**0.1864**	**1.4525**	**1.3751**	**2.4600e-003**		**0.0695**	**0.0695**		**0.0668**	**0.0668**	**0.0000**	**203.8670**	**203.8670**	**0.0369**	**0.0000**	**204.7899**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.1200e-003	0.1386	0.2396	2.4600e-003		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	27.6976	27.6976	8.9600e-003	0.0000	27.9215

Total	**7.1200e-003**	**0.1386**	**0.2396**	**2.4600e-003**		**5.2000e-004**	**5.2000e-004**		**5.2000e-004**	**5.2000e-004**	**0.0000**	**27.6976**	**27.6976**	**8.9600e-003**	**0.0000**	**27.9215**

Mitigated Construction Off-Site

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

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9076					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0618	0.4877	0.7024	1.1300e-003		0.0239	0.0239		0.0237	0.0237	0.0000	97.5920	97.5920	0.0140	0.0000	97.9414
Total	**0.9693**	**0.4877**	**0.7024**	**1.1300e-003**		**0.0239**	**0.0239**		**0.0237**	**0.0237**	**0.0000**	**97.5920**	**97.5920**	**0.0140**	**0.0000**	**97.9414**

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	0.9076					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.2700e-003	0.1888	0.2549	1.1300e-003		7.7200e-003	7.7200e-003		7.7200e-003	7.7200e-003	0.0000	29.5052	29.5052	9.5400e-003	0.0000	29.7438
Total	**0.9159**	**0.1888**	**0.2549**	**1.1300e-003**		**7.7200e-003**	**7.7200e-003**		**7.7200e-003**	**7.7200e-003**	**0.0000**	**29.5052**	**29.5052**	**9.5400e-003**	**0.0000**	**29.7438**

Mitigated Construction Off-Site

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

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

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.4959					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1596	1.2488	1.9288	3.1000e-003		0.0570	0.0570		0.0566	0.0566	0.0000	268.3780	268.3780	0.0374	0.0000	269.3142
Total	**2.6554**	**1.2488**	**1.9288**	**3.1000e-003**		**0.0570**	**0.0570**		**0.0566**	**0.0566**	**0.0000**	**268.3780**	**268.3780**	**0.0374**	**0.0000**	**269.3142**

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	2.4959					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0227	0.5191	0.7010	3.1000e-003		0.0212	0.0212		0.0212	0.0212	0.0000	81.1393	81.1393	0.0262	0.0000	81.7954
Total	**2.5186**	**0.5191**	**0.7010**	**3.1000e-003**		**0.0212**	**0.0212**		**0.0212**	**0.0212**	**0.0000**	**81.1393**	**81.1393**	**0.0262**	**0.0000**	**81.7954**

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 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.0900e-003	0.0106	0.0142	2.0000e-005		5.4000e-004	5.4000e-004		5.0000e-004	5.0000e-004	0.0000	1.9165	1.9165	6.0000e-004	0.0000	1.9317
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**	**0.0142**	**2.0000e-005**		**5.4000e-004**	**5.4000e-004**		**5.0000e-004**	**5.0000e-004**	**0.0000**	**1.9165**	**1.9165**	**6.0000e-004**	**0.0000**	**1.9317**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Off-Road	3.4000e-004	9.2500e-003	0.0160	2.0000e-005		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	1.9165	1.9165	6.0000e-004	0.0000	1.9317
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.4000e-004**	**9.2500e-003**	**0.0160**	**2.0000e-005**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**1.9165**	**1.9165**	**6.0000e-004**	**0.0000**	**1.9317**

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

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	1.1306	1.7950	9.1042	0.0265	2.8427	0.0212	2.8639	0.7605	0.0198	0.7804	0.0000	2,536.1891	2,536.1891	0.1112	0.0000	2,538.9680
Unmitigated	1.1306	1.7950	9.1042	0.0265	2.8427	0.0212	2.8639	0.7605	0.0198	0.7804	0.0000	2,536.1891	2,536.1891	0.1112	0.0000	2,538.9680

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	4,072.68	911.33	389.67	7,396,078	7,396,078
Strip Mall	179.63	170.43	82.80	253,309	253,309
Total	4,252.31	1,081.76	472.47	7,649,387	7,649,387

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.591953	0.053004	0.176619	0.106733	0.020956	0.005303	0.013483	0.022364	0.001589	0.001248	0.005076	0.000920	0.000752
General Office Building	0.591953	0.053004	0.176619	0.106733	0.020956	0.005303	0.013483	0.022364	0.001589	0.001248	0.005076	0.000920	0.000752
Strip Mall	0.591953	0.053004	0.176619	0.106733	0.020956	0.005303	0.013483	0.022364	0.001589	0.001248	0.005076	0.000920	0.000752

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,256.3935	1,256.3935	0.1735	0.0359	1,271.4284
NaturalGas Mitigated	0.0556	0.5057	0.4248	3.0300e-003		0.0384	0.0384		0.0384	0.0384	0.0000	550.4904	550.4904	0.0106	0.0101	553.7617
NaturalGas Unmitigated	0.0556	0.5057	0.4248	3.0300e-003		0.0384	0.0384		0.0384	0.0384	0.0000	550.4904	550.4904	0.0106	0.0101	553.7617

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.02885e+007	0.0555	0.5043	0.4237	3.0300e-003		0.0383	0.0383		0.0383	0.0383	0.0000	549.0359	549.0359	0.0105	0.0101	552.2986
Strip Mall	27255	1.5000e-004	1.3400e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4544	1.4544	3.0000e-005	3.0000e-005	1.4631
Total		**0.0556**	**0.5057**	**0.4248**	**3.0400e-003**		**0.0384**	**0.0384**		**0.0384**	**0.0384**	**0.0000**	**550.4904**	**550.4904**	**0.0106**	**0.0101**	**553.7617**

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					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.02885e+007	0.0555	0.5043	0.4237	3.0300e-003		0.0383	0.0383		0.0383	0.0383	0.0000	549.0359	549.0359	0.0105	0.0101	552.2986
Strip Mall	27255	1.5000e-004	1.3400e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4544	1.4544	3.0000e-005	3.0000e-005	1.4631
Total		**0.0556**	**0.5057**	**0.4248**	**3.0400e-003**		**0.0384**	**0.0384**		**0.0384**	**0.0384**	**0.0000**	**550.4904**	**550.4904**	**0.0106**	**0.0101**	**553.7617**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	1.86078e+006	177.2479	0.0245	5.0600e-003	179.3690
General Office Building	1.12062e+007	1,067.4356	0.1474	0.0305	1,080.2092
Strip Mall	122935	11.7101	1.6200e-003	3.3000e-004	11.8502
Total		**1,256.3936**	**0.1735**	**0.0359**	**1,271.4284**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			

Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.8616	1.1000e-004	0.0126	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0244	0.0244	6.0000e-005	0.0000	0.0260
Unmitigated	2.8616	1.1000e-004	0.0126	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0244	0.0244	6.0000e-005	0.0000	0.0260

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	0.3403					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Consumer Products	2.5201					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1600e-003	1.1000e-004	0.0126	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0244	0.0244	6.0000e-005	0.0000	0.0260
Total	**2.8616**	**1.1000e-004**	**0.0126**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0244**	**0.0244**	**6.0000e-005**	**0.0000**	**0.0260**

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	0.3403					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.5201					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1600e-003	1.1000e-004	0.0126	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0244	0.0244	6.0000e-005	0.0000	0.0260
Total	**2.8616**	**1.1000e-004**	**0.0126**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0244**	**0.0244**	**6.0000e-005**	**0.0000**	**0.0260**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	120.8371	0.1483	0.0889	151.0407
Unmitigated	120.8371	0.1483	0.0889	151.0407

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	111.706 / 68.4648	119.9226	0.1471	0.0882	149.8976
Strip Mall	0.851834 / 0.522092	0.9145	1.1200e-003	6.7000e-004	1.1431
Total		**120.8371**	**0.1483**	**0.0889**	**151.0407**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	111.706 / 68.4648	119.9226	0.1471	0.0882	149.8976
Strip Mall	0.851834 / 0.522092	0.9145	1.1200e-003	6.7000e-004	1.1431
Total		**120.8371**	**0.1483**	**0.0889**	**151.0407**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	121.1004	7.1568	0.0000	300.0210
Unmitigated	121.1004	7.1568	0.0000	300.0210

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	584.5	118.6482	7.0119	0.0000	293.9459
Strip Mall	12.08	2.4521	0.1449	0.0000	6.0751
Total		**121.1004**	**7.1568**	**0.0000**	**300.0210**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	584.5	118.6482	7.0119	0.0000	293.9459
Strip Mall	12.08	2.4521	0.1449	0.0000	6.0751
Total		**121.1004**	**7.1568**	**0.0000**	**300.0210**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0	50	2011	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

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

Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (750 - 9999 HP)	0.0825	0.3690	0.2104	4.0000e-004		0.0121	0.0121		0.0121	0.0121	0.0000	38.2892	38.2892	5.3700e-003	0.0000	38.4234
Total	**0.0825**	**0.3690**	**0.2104**	**4.0000e-004**		**0.0121**	**0.0121**		**0.0121**	**0.0121**	**0.0000**	**38.2892**	**38.2892**	**5.3700e-003**	**0.0000**	**38.4234**

11.0 Vegetation

50 Almaden Office, San Jose - Santa Clara County, Annual

50 Almaden Office, San Jose - 2030

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	628.50	1000sqft	1.00	628,500.00	0
Enclosed Parking with Elevator	728.00	Space	0.00	317,540.00	0
Strip Mall	11.50	1000sqft	0.00	11,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2017 co2 rate = 210

Land Use - Provided land uses

Construction Phase - Provided construction schedule

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Demolition - existing building demo = 43,122sf

Grading - grading = 68,000cy export

Vehicle Trips - w/ reductions, office = 6.48, 1.45, 0.62, retail = 15.62, 14.82, 7.20

Water And Wastewater - WWTP 100% aerobic

Stationary Sources - Emergency Generators and Fire Pumps - one 1500kW, 2011HP emergency diesel powered generator, 50hours/year operation

Trips and VMT - 0 trips EMFAC2017, 2,350 cement truck total round trips, 126cy asphalt = 15 tound trips

Vehicle Emission Factors - EMFAC2017

Energy Mitigation - SJCE 100% carbon free renewable energy

Construction Off-road Equipment Mitigation - BMPs, Tier 4 interim mitigation

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
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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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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	55.00
tblConstructionPhase	NumDays	100.00	400.00
tblConstructionPhase	NumDays	5.00	150.00
tblConstructionPhase	NumDays	5.00	3.00
tblFleetMix	HHD	0.02	0.02
tblFleetMix	HHD	0.02	0.02
tblFleetMix	HHD	0.02	0.02
tblFleetMix	LDA	0.62	0.60
tblFleetMix	LDA	0.62	0.60
tblFleetMix	LDA	0.62	0.60
tblFleetMix	LDT1	0.03	0.05
tblFleetMix	LDT1	0.03	0.05
tblFleetMix	LDT1	0.03	0.05
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17

tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD2	5.0600e-003	5.5563e-003
tblFleetMix	LHD2	5.0600e-003	5.5563e-003
tblFleetMix	LHD2	5.0600e-003	5.5563e-003
tblFleetMix	MCY	5.1220e-003	4.7803e-003
tblFleetMix	MCY	5.1220e-003	4.7803e-003
tblFleetMix	MCY	5.1220e-003	4.7803e-003
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tblFleetMix	MDV	0.10	0.11
tblFleetMix	MDV	0.10	0.11
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tblFleetMix	MH	6.5100e-004	7.2763e-004
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tblFleetMix	MHD	0.01	0.01
tblFleetMix	MHD	0.01	0.01
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tblFleetMix	SBUS	6.4600e-004	9.0041e-004
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tblFleetMix	UBUS	1.4700e-003	1.1782e-003
tblFleetMix	UBUS	1.4700e-003	1.1782e-003
tblFleetMix	UBUS	1.4700e-003	1.1782e-003
tblGrading	MaterialExported	0.00	68,000.00
tblLandUse	LandUseSquareFeet	291,200.00	317,540.00
tblLandUse	LotAcreage	14.43	1.00

tblLandUse	LotAcreage	6.55	0.00
tblLandUse	LotAcreage	0.26	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
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tblOffRoadEquipment	UsageHours	6.00	8.00
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tblOffRoadEquipment	UsageHours	6.00	0.70
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
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tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	2,011.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	196.00	0.00
tblTripsAndVMT	HaulingTripNumber	8,500.00	0.00

tblTripsAndVMT	VendorTripNumber	157.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
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tblTripsAndVMT	WorkerTripNumber	13.00	0.00
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tblVehicleEF	LDT2	0.05	0.17
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tblVehicleEF	LDT2	0.07	0.09
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	7.4390e-003	6.5530e-003
tblVehicleEF	LDT2	0.06	0.34
tblVehicleEF	LDT2	0.04	0.18
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tblVehicleEF	LDT2	6.2800e-004	8.5000e-005
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.07	0.09

tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.01	9.5240e-003
tblVehicleEF	LDT2	0.06	0.34
tblVehicleEF	LDT2	0.05	0.20
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tblVehicleEF	LHD1	0.06	0.05
tblVehicleEF	LHD1	0.53	0.30
tblVehicleEF	LHD1	0.67	0.23
tblVehicleEF	LHD1	7.8900e-004	9.1500e-004
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tblVehicleEF	LHD1	6.6500e-004	2.1000e-004
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tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	1.0210e-003	7.7200e-004
tblVehicleEF	LHD1	0.10	0.07
tblVehicleEF	LHD1	0.26	0.43

tblVehicleEF	LHD1	0.15	0.04
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tblVehicleEF	LHD1	6.2670e-003	6.8120e-003
tblVehicleEF	LHD1	3.0000e-004	1.0000e-004
tblVehicleEF	LHD1	1.8620e-003	1.4030e-003
tblVehicleEF	LHD1	0.08	0.05
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.0210e-003	7.7200e-004
tblVehicleEF	LHD1	0.11	0.09
tblVehicleEF	LHD1	0.26	0.43
tblVehicleEF	LHD1	0.16	0.05
tblVehicleEF	LHD2	2.5430e-003	2.5050e-003
tblVehicleEF	LHD2	5.3180e-003	5.3390e-003
tblVehicleEF	LHD2	3.2330e-003	4.8110e-003
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.45	0.49
tblVehicleEF	LHD2	0.88	0.48
tblVehicleEF	LHD2	13.62	13.00
tblVehicleEF	LHD2	675.95	679.81
tblVehicleEF	LHD2	21.83	6.44
tblVehicleEF	LHD2	0.07	0.07
tblVehicleEF	LHD2	0.22	0.38
tblVehicleEF	LHD2	0.26	0.12
tblVehicleEF	LHD2	1.0460e-003	1.5020e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	9.3120e-003	0.01
tblVehicleEF	LHD2	3.7400e-004	1.0600e-004
tblVehicleEF	LHD2	1.0000e-003	1.4370e-003
tblVehicleEF	LHD2	2.7080e-003	2.7110e-003
tblVehicleEF	LHD2	8.8860e-003	0.01

tblVehicleEF	LHD2	3.4400e-004	9.8000e-005
tblVehicleEF	LHD2	5.1500e-004	6.4200e-004
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.0800e-004	3.7400e-004
tblVehicleEF	LHD2	0.09	0.10
tblVehicleEF	LHD2	0.04	0.14
tblVehicleEF	LHD2	0.04	0.02
tblVehicleEF	LHD2	1.3300e-004	1.2400e-004
tblVehicleEF	LHD2	6.5670e-003	6.5570e-003
tblVehicleEF	LHD2	2.3300e-004	6.4000e-005
tblVehicleEF	LHD2	5.1500e-004	6.4200e-004
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	3.0800e-004	3.7400e-004
tblVehicleEF	LHD2	0.11	0.11
tblVehicleEF	LHD2	0.04	0.14
tblVehicleEF	LHD2	0.05	0.02
tblVehicleEF	MCY	0.46	0.32
tblVehicleEF	MCY	0.16	0.25
tblVehicleEF	MCY	17.52	17.61
tblVehicleEF	MCY	10.34	9.20
tblVehicleEF	MCY	171.38	209.76
tblVehicleEF	MCY	42.85	59.23
tblVehicleEF	MCY	1.14	1.14
tblVehicleEF	MCY	0.32	0.27
tblVehicleEF	MCY	2.1570e-003	2.1380e-003
tblVehicleEF	MCY	3.3210e-003	2.8620e-003
tblVehicleEF	MCY	2.0120e-003	1.9940e-003
tblVehicleEF	MCY	3.1070e-003	2.6760e-003

tblVehicleEF	MCY	0.88	1.79
tblVehicleEF	MCY	0.61	0.63
tblVehicleEF	MCY	0.46	0.95
tblVehicleEF	MCY	2.12	2.13
tblVehicleEF	MCY	0.46	1.49
tblVehicleEF	MCY	2.11	1.88
tblVehicleEF	MCY	2.0640e-003	2.0760e-003
tblVehicleEF	MCY	6.5900e-004	5.8600e-004
tblVehicleEF	MCY	0.88	1.79
tblVehicleEF	MCY	0.61	0.63
tblVehicleEF	MCY	0.46	0.95
tblVehicleEF	MCY	2.66	2.67
tblVehicleEF	MCY	0.46	1.49
tblVehicleEF	MCY	2.30	2.04
tblVehicleEF	MDV	5.1180e-003	1.7720e-003
tblVehicleEF	MDV	7.2260e-003	0.04
tblVehicleEF	MDV	0.68	0.55
tblVehicleEF	MDV	1.51	2.32
tblVehicleEF	MDV	358.67	301.13
tblVehicleEF	MDV	82.28	63.46
tblVehicleEF	MDV	0.07	0.04
tblVehicleEF	MDV	0.11	0.18
tblVehicleEF	MDV	1.3880e-003	1.0340e-003
tblVehicleEF	MDV	2.0820e-003	1.3440e-003
tblVehicleEF	MDV	1.2780e-003	9.5400e-004
tblVehicleEF	MDV	1.9150e-003	1.2360e-003
tblVehicleEF	MDV	0.05	0.06
tblVehicleEF	MDV	0.13	0.10
tblVehicleEF	MDV	0.05	0.06
tblVehicleEF	MDV	0.01	6.8870e-003

tblVehicleEF	MDV	0.09	0.34
tblVehicleEF	MDV	0.10	0.20
tblVehicleEF	MDV	3.5870e-003	2.9760e-003
tblVehicleEF	MDV	8.4800e-004	6.2800e-004
tblVehicleEF	MDV	0.05	0.06
tblVehicleEF	MDV	0.13	0.10
tblVehicleEF	MDV	0.05	0.06
tblVehicleEF	MDV	0.02	9.9830e-003
tblVehicleEF	MDV	0.09	0.34
tblVehicleEF	MDV	0.11	0.22
tblVehicleEF	MH	8.2310e-003	5.0270e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.45	0.31
tblVehicleEF	MH	3.72	1.64
tblVehicleEF	MH	1,184.19	1,350.27
tblVehicleEF	MH	56.79	15.54
tblVehicleEF	MH	0.84	1.06
tblVehicleEF	MH	0.62	0.24
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	8.8300e-004	2.1200e-004
tblVehicleEF	MH	3.2210e-003	3.2970e-003
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	8.1200e-004	1.9500e-004
tblVehicleEF	MH	0.46	0.35
tblVehicleEF	MH	0.04	0.03
tblVehicleEF	MH	0.18	0.14
tblVehicleEF	MH	0.04	0.04
tblVehicleEF	MH	0.01	0.54
tblVehicleEF	MH	0.22	0.07

tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.3200e-004	1.5400e-004
tblVehicleEF	MH	0.46	0.35
tblVehicleEF	MH	0.04	0.03
tblVehicleEF	MH	0.18	0.14
tblVehicleEF	MH	0.05	0.05
tblVehicleEF	MH	0.01	0.54
tblVehicleEF	MH	0.24	0.08
tblVehicleEF	MHD	0.02	3.8320e-003
tblVehicleEF	MHD	2.7470e-003	1.0340e-003
tblVehicleEF	MHD	0.03	8.3830e-003
tblVehicleEF	MHD	0.37	0.41
tblVehicleEF	MHD	0.25	0.15
tblVehicleEF	MHD	3.74	0.87
tblVehicleEF	MHD	131.96	65.10
tblVehicleEF	MHD	1,167.79	993.45
tblVehicleEF	MHD	59.45	8.55
tblVehicleEF	MHD	0.34	0.34
tblVehicleEF	MHD	1.04	1.43
tblVehicleEF	MHD	9.99	1.69
tblVehicleEF	MHD	5.2000e-005	1.6200e-004
tblVehicleEF	MHD	3.0080e-003	7.0060e-003
tblVehicleEF	MHD	8.2100e-004	1.1200e-004
tblVehicleEF	MHD	5.0000e-005	1.5500e-004
tblVehicleEF	MHD	2.8710e-003	6.6960e-003
tblVehicleEF	MHD	7.5400e-004	1.0300e-004
tblVehicleEF	MHD	6.4300e-004	2.8900e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	3.8200e-004	1.6800e-004

tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.02	0.07
tblVehicleEF	MHD	0.23	0.04
tblVehicleEF	MHD	1.2710e-003	6.1800e-004
tblVehicleEF	MHD	0.01	9.4800e-003
tblVehicleEF	MHD	6.6000e-004	8.5000e-005
tblVehicleEF	MHD	6.4300e-004	2.8900e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.03	0.03
tblVehicleEF	MHD	3.8200e-004	1.6800e-004
tblVehicleEF	MHD	0.05	0.01
tblVehicleEF	MHD	0.02	0.07
tblVehicleEF	MHD	0.25	0.05
tblVehicleEF	OBUS	0.01	7.0980e-003
tblVehicleEF	OBUS	4.0840e-003	2.1970e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.24	0.64
tblVehicleEF	OBUS	0.30	0.26
tblVehicleEF	OBUS	4.08	1.58
tblVehicleEF	OBUS	110.55	97.36
tblVehicleEF	OBUS	1,272.30	1,210.85
tblVehicleEF	OBUS	64.94	13.46
tblVehicleEF	OBUS	0.24	0.43
tblVehicleEF	OBUS	0.85	1.45
tblVehicleEF	OBUS	2.74	1.13
tblVehicleEF	OBUS	2.2000e-005	1.4200e-004
tblVehicleEF	OBUS	2.8340e-003	7.8820e-003
tblVehicleEF	OBUS	9.3800e-004	1.5600e-004
tblVehicleEF	OBUS	2.1000e-005	1.3600e-004
tblVehicleEF	OBUS	2.6900e-003	7.5260e-003

tblVehicleEF	OBUS	8.6200e-004	1.4400e-004
tblVehicleEF	OBUS	1.1660e-003	1.0620e-003
tblVehicleEF	OBUS	0.01	0.02
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	5.3200e-004	4.8700e-004
tblVehicleEF	OBUS	0.04	0.02
tblVehicleEF	OBUS	0.03	0.18
tblVehicleEF	OBUS	0.26	0.08
tblVehicleEF	OBUS	1.0660e-003	9.2400e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.2100e-004	1.3300e-004
tblVehicleEF	OBUS	1.1660e-003	1.0620e-003
tblVehicleEF	OBUS	0.01	0.02
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	5.3200e-004	4.8700e-004
tblVehicleEF	OBUS	0.05	0.02
tblVehicleEF	OBUS	0.03	0.18
tblVehicleEF	OBUS	0.28	0.08
tblVehicleEF	SBUS	0.81	0.07
tblVehicleEF	SBUS	7.6490e-003	4.4040e-003
tblVehicleEF	SBUS	0.06	6.3380e-003
tblVehicleEF	SBUS	8.87	2.93
tblVehicleEF	SBUS	0.48	0.37
tblVehicleEF	SBUS	7.57	0.86
tblVehicleEF	SBUS	1,023.58	337.48
tblVehicleEF	SBUS	1,008.60	970.50
tblVehicleEF	SBUS	61.81	5.06
tblVehicleEF	SBUS	4.35	2.71
tblVehicleEF	SBUS	1.72	3.09
tblVehicleEF	SBUS	10.76	1.18

tblVehicleEF	SBUS	2.1870e-003	2.0480e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	8.4940e-003	0.02
tblVehicleEF	SBUS	1.1020e-003	6.8000e-005
tblVehicleEF	SBUS	2.0920e-003	1.9600e-003
tblVehicleEF	SBUS	2.5880e-003	2.6690e-003
tblVehicleEF	SBUS	8.1060e-003	0.02
tblVehicleEF	SBUS	1.0130e-003	6.2000e-005
tblVehicleEF	SBUS	3.7080e-003	8.7000e-004
tblVehicleEF	SBUS	0.03	8.3040e-003
tblVehicleEF	SBUS	1.05	0.32
tblVehicleEF	SBUS	1.7580e-003	4.1400e-004
tblVehicleEF	SBUS	0.07	0.06
tblVehicleEF	SBUS	0.02	0.05
tblVehicleEF	SBUS	0.40	0.04
tblVehicleEF	SBUS	0.01	3.2190e-003
tblVehicleEF	SBUS	9.7440e-003	9.2880e-003
tblVehicleEF	SBUS	7.4900e-004	5.0000e-005
tblVehicleEF	SBUS	3.7080e-003	8.7000e-004
tblVehicleEF	SBUS	0.03	8.3040e-003
tblVehicleEF	SBUS	1.53	0.46
tblVehicleEF	SBUS	1.7580e-003	4.1400e-004
tblVehicleEF	SBUS	0.08	0.07
tblVehicleEF	SBUS	0.02	0.05
tblVehicleEF	SBUS	0.43	0.04
tblVehicleEF	UBUS	0.23	1.86
tblVehicleEF	UBUS	0.05	2.1860e-003
tblVehicleEF	UBUS	3.04	14.11
tblVehicleEF	UBUS	7.59	0.14
tblVehicleEF	UBUS	1,937.16	1,668.67

tblVehicleEF	UBUS	126.43	1.40
tblVehicleEF	UBUS	4.75	0.71
tblVehicleEF	UBUS	13.02	0.02
tblVehicleEF	UBUS	0.54	0.07
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.10	5.1160e-003
tblVehicleEF	UBUS	1.3960e-003	1.5000e-005
tblVehicleEF	UBUS	0.23	0.03
tblVehicleEF	UBUS	3.0000e-003	8.3320e-003
tblVehicleEF	UBUS	0.10	4.8930e-003
tblVehicleEF	UBUS	1.2840e-003	1.4000e-005
tblVehicleEF	UBUS	2.5990e-003	6.1000e-005
tblVehicleEF	UBUS	0.04	8.1400e-004
tblVehicleEF	UBUS	1.5170e-003	3.6000e-005
tblVehicleEF	UBUS	0.23	0.03
tblVehicleEF	UBUS	9.4350e-003	4.9280e-003
tblVehicleEF	UBUS	0.65	9.2610e-003
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	1.4020e-003	1.4000e-005
tblVehicleEF	UBUS	2.5990e-003	6.1000e-005
tblVehicleEF	UBUS	0.04	8.1400e-004
tblVehicleEF	UBUS	1.5170e-003	3.6000e-005
tblVehicleEF	UBUS	0.48	1.90
tblVehicleEF	UBUS	9.4350e-003	4.9280e-003
tblVehicleEF	UBUS	0.71	0.01
tblVehicleTrips	ST_TR	2.46	1.45
tblVehicleTrips	ST_TR	42.04	14.82
tblVehicleTrips	SU_TR	1.05	0.62
tblVehicleTrips	SU_TR	20.43	7.20
tblVehicleTrips	WD_TR	11.03	6.48

tblVehicleTrips	WD_TR	44.32	15.62
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.2 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	2.8615	1.1000e-004	0.0125	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0244	0.0244	6.0000e-005	0.0000	0.0260
Energy	0.0556	0.5057	0.4248	3.0300e-003		0.0384	0.0384		0.0384	0.0384	0.0000	1,806.8839	1,806.8839	0.1841	0.0460	1,825.1901
Mobile	0.8447	1.4812	7.2882	0.0237	2.8433	0.0172	2.8604	0.7607	0.0161	0.7768	0.0000	2,175.8148	2,175.8148	0.0860	0.0000	2,177.9643
Stationary	0.0825	0.3690	0.2104	4.0000e-004		0.0121	0.0121		0.0121	0.0121	0.0000	38.2892	38.2892	5.3700e-003	0.0000	38.4234
Waste						0.0000	0.0000		0.0000	0.0000	121.1004	0.0000	121.1004	7.1568	0.0000	300.0210
Water						0.0000	0.0000		0.0000	0.0000	39.8230	81.0141	120.8371	0.1483	0.0889	151.0407
Total	**3.8444**	**2.3560**	**7.9358**	**0.0271**	**2.8433**	**0.0678**	**2.9110**	**0.7607**	**0.0667**	**0.8274**	**160.9234**	**4,102.0264**	**4,262.9498**	**7.5805**	**0.1349**	**4,492.6654**

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	2.8615	1.1000e-004	0.0125	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0244	0.0244	6.0000e-005	0.0000	0.0260
Energy	0.0556	0.5057	0.4248	3.0300e-003		0.0384	0.0384		0.0384	0.0384	0.0000	550.4904	550.4904	0.0106	0.0101	553.7617
Mobile	0.8447	1.4812	7.2882	0.0237	2.8433	0.0172	2.8604	0.7607	0.0161	0.7768	0.0000	2,175.8148	2,175.8148	0.0860	0.0000	2,177.96
Stationary	0.0825	0.3690	0.2104	4.0000e-004		0.0121	0.0121		0.0121	0.0121	0.0000	38.2892	38.2892	5.3700e-003	0.0000	38.4234
Waste						0.0000	0.0000		0.0000	0.0000	121.1004	0.0000	121.1004	7.1568	0.0000	300.0210
Water						0.0000	0.0000		0.0000	0.0000	39.8230	81.0141	120.8371	0.1483	0.0889	151.0407
Total	**3.8444**	**2.3560**	**7.9358**	**0.0271**	**2.8433**	**0.0678**	**2.9110**	**0.7607**	**0.0667**	**0.8274**	**160.9234**	**2,845.6329**	**3,006.5563**	**7.4070**	**0.0990**	**3,221.2370**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**30.63**	**29.47**	**2.29**	**26.61**	**28.30**

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	0.8447	1.4812	7.2882	0.0237	2.8433	0.0172	2.8604	0.7607	0.0161	0.7768	0.0000	2,175.8148	2,175.8148	0.0860	0.0000	2,177.9643
Unmitigated	0.8447	1.4812	7.2882	0.0237	2.8433	0.0172	2.8604	0.7607	0.0161	0.7768	0.0000	2,175.8148	2,175.8148	0.0860	0.0000	2,177.9643

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	4,072.68	911.33	389.67	7,396,078	7,396,078
Strip Mall	179.63	170.43	82.80	253,309	253,309
Total	4,252.31	1,081.76	472.47	7,649,387	7,649,387

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.595423	0.053963	0.171400	0.106522	0.021043	0.005556	0.013639	0.023425	0.001443	0.001178	0.004780	0.000900	0.000728
General Office Building	0.595423	0.053963	0.171400	0.106522	0.021043	0.005556	0.013639	0.023425	0.001443	0.001178	0.004780	0.000900	0.000728
Strip Mall	0.595423	0.053963	0.171400	0.106522	0.021043	0.005556	0.013639	0.023425	0.001443	0.001178	0.004780	0.000900	0.000728

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,256.3935	1,256.3935	0.1735	0.0359	1,271.4284
NaturalGas Mitigated	0.0556	0.5057	0.4248	3.0300e-003		0.0384	0.0384		0.0384	0.0384	0.0000	550.4904	550.4904	0.0106	0.0101	553.7617
NaturalGas Unmitigated	0.0556	0.5057	0.4248	3.0300e-003		0.0384	0.0384		0.0384	0.0384	0.0000	550.4904	550.4904	0.0106	0.0101	553.7617

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.02885e+007	0.0555	0.5043	0.4237	3.0300e-003		0.0383	0.0383		0.0383	0.0383	0.0000	549.0359	549.0359	0.0105	0.0101	552.2986
Strip Mall	27255	1.5000e-004	1.3400e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4544	1.4544	3.0000e-005	3.0000e-005	1.4631
Total		**0.0556**	**0.5057**	**0.4248**	**3.0400e-003**		**0.0384**	**0.0384**		**0.0384**	**0.0384**	**0.0000**	**550.4904**	**550.4904**	**0.0106**	**0.0101**	**553.7617**

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					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.02885e+007	0.0555	0.5043	0.4237	3.0300e-003		0.0383	0.0383		0.0383	0.0383	0.0000	549.0359	549.0359	0.0105	0.0101	552.2986
Strip Mall	27255	1.5000e-004	1.3400e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4544	1.4544	3.0000e-005	3.0000e-005	1.4631
Total		**0.0556**	**0.5057**	**0.4248**	**3.0400e-003**		**0.0384**	**0.0384**		**0.0384**	**0.0384**	**0.0000**	**550.4904**	**550.4904**	**0.0106**	**0.0101**	**553.7617**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	1.86078e+006	177.2479	0.0245	5.0600e-003	179.3690
General Office Building	1.12062e+007	1,067.4356	0.1474	0.0305	1,080.2092
Strip Mall	122935	11.7101	1.6200e-003	3.3000e-004	11.8502
Total		**1,256.3936**	**0.1735**	**0.0359**	**1,271.4284**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			

Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.8615	1.1000e-004	0.0125	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0244	0.0244	6.0000e-005	0.0000	0.0260
Unmitigated	2.8615	1.1000e-004	0.0125	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0244	0.0244	6.0000e-005	0.0000	0.0260

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	0.3403					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Consumer Products	2.5201					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1400e-003	1.1000e-004	0.0125	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0244	0.0244	6.0000e-005	0.0000	0.0260
Total	**2.8615**	**1.1000e-004**	**0.0125**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0244**	**0.0244**	**6.0000e-005**	**0.0000**	**0.0260**

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	0.3403					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.5201					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1400e-003	1.1000e-004	0.0125	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0244	0.0244	6.0000e-005	0.0000	0.0260
Total	**2.8615**	**1.1000e-004**	**0.0125**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0244**	**0.0244**	**6.0000e-005**	**0.0000**	**0.0260**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	120.8371	0.1483	0.0889	151.0407
Unmitigated	120.8371	0.1483	0.0889	151.0407

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	111.706 / 68.4648	119.9226	0.1471	0.0882	149.8976
Strip Mall	0.851834 / 0.522092	0.9145	1.1200e-003	6.7000e-004	1.1431
Total		**120.8371**	**0.1483**	**0.0889**	**151.0407**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	111.706 / 68.4648	119.9226	0.1471	0.0882	149.8976
Strip Mall	0.851834 / 0.522092	0.9145	1.1200e-003	6.7000e-004	1.1431
Total		**120.8371**	**0.1483**	**0.0889**	**151.0407**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	121.1004	7.1568	0.0000	300.0210
Unmitigated	121.1004	7.1568	0.0000	300.0210

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	584.5	118.6482	7.0119	0.0000	293.9459
Strip Mall	12.08	2.4521	0.1449	0.0000	6.0751
Total		**121.1004**	**7.1568**	**0.0000**	**300.0210**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	584.5	118.6482	7.0119	0.0000	293.9459
Strip Mall	12.08	2.4521	0.1449	0.0000	6.0751
Total		**121.1004**	**7.1568**	**0.0000**	**300.0210**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0	50	2011	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

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

Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (750 - 9999 HP)	0.0825	0.3690	0.2104	4.0000e-004		0.0121	0.0121		0.0121	0.0121	0.0000	38.2892	38.2892	5.3700e-003	0.0000	38.4234
Total	**0.0825**	**0.3690**	**0.2104**	**4.0000e-004**		**0.0121**	**0.0121**		**0.0121**	**0.0121**	**0.0000**	**38.2892**	**38.2892**	**5.3700e-003**	**0.0000**	**38.4234**

11.0 Vegetation

Attachment 3: EMFAC2017 Calculations

CalEEMod Construction Inputs

Phase	CalEEMod WORKER TRIPS	CalEEMod VENDOR TRIPS	Total Worker Trips	Total Vendor Trips	CalEEMod HAULING TRIPS	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	*Worker VMT*	*Vendor VMT*	*Hauling VMT*
Demolition	8	0	40	0	196	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	432	0	3920
Site Preparation	0	0	0	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	0	0	0
Grading	10	0	550	0	8500	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	5940	0	170000
Trenching	10	0	200	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	2160	0	0
Building Construction	338	157	135200	62800	4700	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	1460160	458440	34310
Architectural Coating	68	0	10200	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	110160	0	0
Paving	13	0	39	0	30	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	421.2	0	219

Number of Days Per Year				
2021	1/4/21	12/31/21	362	
2022	1/1/22	12/31/22	365	
2023	1/1/23	6/7/23	158	
			885	**633** ***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	1/4/2021	1/8/2021	5	5
Site Preparation				
Grading	1/9/2021	3/26/2021	5	55
Trenching	3/27/2021	4/23/2021	5	20
Building Construction	4/24/2021	11/4/2022	5	400
Architectural Coating	11/5/2022	6/2/2023	5	150
Paving	6/3/2023	6/7/2023	5	3

Summary of Construction Traffic Emissions (EMFAC2017)

Pollutants YEAR	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2
					Tons						*Metric Tons*
Criteria Pollutants											
2021	0.1204	1.4017	1.0583	0.0062	0.3028	0.0853	0.3881	0.0456	0.0449	0.0904	602.3900
2022	0.0964	1.2104	0.9671	0.0061	0.3053	0.0770	0.3823	0.0459	0.0367	0.0826	591.7582
2023	0.0315	0.4191	0.3840	0.0025	0.1322	0.0313	0.1634	0.0199	0.0139	0.0338	245.7406
Toxic Air Contaminants (1 Mile Trip Length)											
2021	0.0717	0.3517	0.3856	0.0009	0.0300	0.0094	0.0394	0.0045	0.0052	0.0097	88.8339
2022	0.0660	0.3344	0.3800	0.0009	0.0302	0.0084	0.0386	0.0046	0.0041	0.0087	88.1859
2023	0.0261	0.1316	0.1627	0.0004	0.0131	0.0034	0.0164	0.0020	0.0015	0.0035	36.6952

CalEEMod EMFAC2017 Emission Factors Input — Year 2024

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.004988	0.003038	0.003579	0.024725094	0.007064	0	0	0.053967	0
A	CH4_RUNEX	0.00172	0.003601	0.002932	0.0034	0.007858	0.006654	0.001694	0.049109234	0.003624	1.349012	0.325313	0.006018	0.009557
A	CH4_STREX	0.044075	0.05761	0.06177	0.070824	0.013865	0.007729	0.009132	4.43811E-07	0.017163	0.001538	0.253919	0.004972	0.02247
A	CO_IDLEX	0	0	0	0	0.18374	0.137239	0.390727	6.332534788	0.580075	0	0	2.273981	0
A	CO_RUNEX	0.525274	0.854913	0.738224	0.784848	0.708735	0.587734	0.232554	0.401352061	0.42749	10.11873	18.59611	0.493783	0.933761
A	CO_STREX	2.091078	2.265361	2.701442	2.959095	1.045963	0.600453	1.069371	0.005942222	1.839982	0.139137	9.061179	0.715904	2.032378
A	CO2_NBIO_IDLEX	0	0	0	0	8.858719	13.87898	72.07972	1048.877326	92.65691	0	0	346.7845	0
A	CO2_NBIO_RUNEX	234.5944	280.8587	301.7532	364.8671	779.3387	754.9172	1080.76	1413.895929	1326.082	1597.162	210.0772	1049.23	1501.42
A	CO2_NBIO_STREX	49.79417	60.29808	65.35922	77.91596	11.54721	7.594669	9.152658	0.047202677	15.17619	1.392642	60.71341	4.118282	18.13538
A	NOX_IDLEX	0	0	0	0	0.05646	0.093939	0.413905	5.391729563	0.37569	0	0	3.438336	0
A	NOX_RUNEX	0.029391	0.067754	0.059969	0.071504	0.645533	0.773009	1.448062	2.686297103	1.466446	0.729407	1.146289	4.645105	1.307268
A	NOX_STREX	0.165155	0.213522	0.249233	0.292815	0.30476	0.171871	1.698951	2.321261226	1.093896	0.010827	0.270709	0.856319	0.243677
A	PM10_IDLEX	0	0	0	0	0.000842	0.001437	0.000369	0.002582324	0.000122	0	0	0.003612	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060952091	0.13034	0.069383	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009779	0.010769	0.012	0.035531716	0.012	0.033326	0.004	0.010877	0.013117
A	PM10_RUNEX	0.001296	0.001646	0.001347	0.001438	0.009623	0.015204	0.007023	0.024936873	0.007393	0.005328	0.001997	0.029851	0.022656
A	PM10_STREX	0.00168	0.002108	0.001701	0.00181	0.000247	0.000127	0.000115	6.20482E-07	0.000145	1.52E-05	0.00293	4.83E-05	0.000261
A	PM25_IDLEX	0	0	0	0	0.000805	0.001375	0.000353	0.002470614	0.000117	0	0	0.003456	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026122325	0.05586	0.029736	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002445	0.002692	0.003	0.008882929	0.003	0.008332	0.001	0.002719	0.003279
A	PM25_RUNEX	0.001194	0.001514	0.00124	0.001326	0.009159	0.014521	0.006713	0.02385809	0.00706	0.005096	0.001865	0.028546	0.021632
A	PM25_STREX	0.001544	0.001938	0.001564	0.001664	0.000228	0.000117	0.000106	5.7051E-07	0.000133	1.4E-05	0.002752	4.44E-05	0.00024
A	ROG_DIURN	0.035268	0.074886	0.059509	0.0674	0.001912	0.000985	0.000383	2.04804E-06	0.00109	2.11E-05	1.802995	0.000567	0.638647
A	ROG_HTSK	0.084451	0.14553	0.11595	0.128626	0.071617	0.03871	0.018244	9.33924E-05	0.016091	0.000161	0.676373	0.005509	0.054262
A	ROG_IDLEX	0	0	0	0	0.020629	0.015457	0.018226	0.427772974	0.046173	0	0	0.252008	0
A	ROG_RESTL	0.031475	0.061226	0.057117	0.065393	0.000985	0.000514	0.000198	1.14427E-06	0.000485	8.98E-06	0.97629	0.000247	0.227116
A	ROG_RUNEX	0.006416	0.015308	0.011766	0.014114	0.088883	0.108465	0.015787	0.02569783	0.02373	0.019675	2.190481	0.082853	0.063008
A	ROG_RUNLS	0.19586	0.538092	0.408725	0.425225	0.497047	0.248914	0.102215	0.000473173	0.179468	0.000814	1.887358	0.036799	1.296192
A	ROG_STREX	0.192338	0.274731	0.283917	0.344096	0.069832	0.038485	0.048205	2.32277E-06	0.087883	0.006407	1.930344	0.028372	0.092183
A	SO2_IDLEX	0	0	0	0	8.59E-05	0.000133	0.000684	0.009760709	0.00088	0	0	0.003301	0
A	SO2_RUNEX	9.32E-05	0.002619	0.010304	0.003606	0.007608	0.007289	0.010304	0.012940727	0.012763	0.011293	0.002079	0.01002	0.014735
A	SO2_STREX	0	0	9.06E-05	0.000771	0.000114	7.52E-05	9.06E-05	4.67109E-07	0.00015	1.38E-05	0.000601	4.08E-05	0.000179
A	TOG_DIURN	0.035268	0.074886	0.059509	0.0674	0.001912	0.000985	0.000383	2.04804E-06	0.00109	2.11E-05	1.802995	0.000567	0.638647
A	TOG_HTSK	0.084451	0.14553	0.11595	0.128626	0.071617	0.03871	0.018244	9.33924E-05	0.016091	0.000161	0.676373	0.005509	0.054262
A	TOG_IDLEX	0	0	0	0	0.029037	0.020764	0.02476	0.491871395	0.059643	0	0	0.360804	0
A	TOG_RESTL	0.031475	0.061226	0.057117	0.065393	0.000985	0.000514	0.000198	1.14427E-06	0.000485	8.98E-06	0.97629	0.000247	0.227116
A	TOG_RUNEX	0.009328	0.022322	0.017133	0.020501	0.108536	0.126319	0.019853	0.077498474	0.03185	1.377227	2.721006	0.098738	0.082805
A	TOG_RUNLS	0.19586	0.538092	0.408725	0.425225	0.497047	0.248914	0.102215	0.000473173	0.179468	0.000814	1.887358	0.036799	1.296192
A	TOG_STREX	0.210586	0.300795	0.310854	0.376741	0.076457	0.042137	0.052778	2.54314E-06	0.096221	0.007015	2.101179	0.031064	0.100929

CalEEMod EMFAC2017 Fleet Mix Input — Year 2024

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.591953	0.053004	0.176619	0.106733	0.020956	0.005303	0.013483	0.022364	0.001589	0.001248	0.005076	0.00092	0.000752
General Office Building	0.591953	0.053004	0.176619	0.106733	0.020956	0.005303	0.013483	0.022364	0.001589	0.001248	0.005076	0.00092	0.000752
Strip Mall	0.591953	0.053004	0.176619	0.106733	0.020956	0.005303	0.013483	0.022364	0.001589	0.001248	0.005076	0.00092	0.000752

CalEEMod EMFAC2017 Emission Factors Input — Year 2030

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.004148	0.002505	0.003832	0.024231453	0.007098	0	0	0.070082	0
A	CH4_RUNEX	0.000959	0.001671	0.001726	0.001772	0.005195	0.005339	0.001034	0.04518098	0.002197	1.859484	0.319087	0.004404	0.005027
A	CH4_STREX	0.028931	0.035248	0.041821	0.043924	0.009023	0.004811	0.008383	4.34672E-07	0.015222	0.002186	0.24786	0.006338	0.019545
A	CO_IDLEX	0	0	0	0	0.17731	0.131894	0.405402	6.28489984	0.644155	0	0	2.927328	0
A	CO_RUNEX	0.411156	0.540474	0.559142	0.551517	0.468742	0.489111	0.152189	0.405949458	0.262856	14.11073	17.60732	0.374881	0.311691
A	CO_STREX	1.716961	1.849789	2.287973	2.324828	0.890393	0.484256	0.872515	0.006685308	1.577018	0.139137	9.199577	0.858725	1.635194
A	CO2_NBIO_IDLEX	0	0	0	0	8.251826	13.00041	65.09769	930.0496847	97.36242	0	0	337.4754	0
A	CO2_NBIO_RUNEX	199.8584	241.4555	249.7974	301.1272	698.5465	679.813	993.4479	1226.348086	1210.85	1668.671	209.7572	970.5049	1350.267
A	CO2_NBIO_STREX	42.16672	51.55301	53.79124	63.46105	10.09364	6.438033	8.550649	0.051649278	13.46187	1.401901	59.22586	5.059627	15.54123
A	NOX_IDLEX	0	0	0	0	0.045908	0.074209	0.341766	5.199426871	0.431935	0	0	2.710433	0
A	NOX_RUNEX	0.019319	0.033468	0.034489	0.035665	0.299902	0.384329	1.428316	2.517362076	1.448391	0.706433	1.137409	3.086533	1.063099
A	NOX_STREX	0.125333	0.151052	0.168209	0.179169	0.225227	0.124883	1.689216	2.314548745	1.129093	0.015157	0.270173	1.184451	0.23668
A	PM10_IDLEX	0	0	0	0	0.000915	0.001502	0.000162	0.002145897	0.000142	0	0	0.002048	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.061109857	0.13034	0.069383	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009901	0.010844	0.012	0.035621239	0.012	0.033326	0.004	0.010676	0.013189
A	PM10_RUNEX	0.000929	0.00107	0.001025	0.001034	0.007019	0.013839	0.007006	0.023790073	0.007882	0.005116	0.002138	0.021245	0.016043
A	PM10_STREX	0.001275	0.001461	0.00134	0.001344	0.00021	0.000106	0.000112	5.80093E-07	0.000156	1.52E-05	0.002862	6.76E-05	0.000212
A	PM25_IDLEX	0	0	0	0	0.000875	0.001437	0.000155	0.002053066	0.000136	0	0	0.00196	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026189939	0.05586	0.029736	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002475	0.002711	0.003	0.00890531	0.003	0.008332	0.001	0.002669	0.003297
A	PM25_RUNEX	0.000855	0.000984	0.000944	0.000954	0.006671	0.013218	0.006696	0.022760894	0.007526	0.004893	0.001994	0.02031	0.015312
A	PM25_STREX	0.001172	0.001344	0.001232	0.001236	0.000193	9.76E-05	0.000103	5.33374E-07	0.000144	1.4E-05	0.002676	6.22E-05	0.000195
A	ROG_DIURN	0.024903	0.046388	0.048996	0.057349	0.001403	0.000642	0.000289	1.32994E-06	0.001062	6.14E-05	1.786807	0.00087	0.347564
A	ROG_HTSK	0.061657	0.093564	0.089096	0.0981	0.054855	0.024352	0.013852	5.78076E-05	0.015622	0.000814	0.631299	0.008304	0.028392
A	ROG_IDLEX	0	0	0	0	0.01734	0.013466	0.01847	0.422100311	0.050126	0	0	0.322319	0
A	ROG_RESTL	0.022934	0.041206	0.048532	0.056738	0.000772	0.000374	0.000168	7.97633E-07	0.000487	3.58E-05	0.946881	0.000414	0.1401
A	ROG_RUNEX	0.003247	0.0065	0.006553	0.006887	0.072661	0.0982	0.011844	0.024014489	0.016744	0.026969	2.128511	0.060159	0.038911
A	ROG_RUNLS	0.170512	0.364405	0.336782	0.340289	0.429696	0.143744	0.071507	0.000284481	0.181965	0.004928	1.487321	0.053902	0.535482
A	ROG_STREX	0.118715	0.154126	0.182707	0.199251	0.043726	0.022756	0.041407	2.2699E-06	0.076636	0.009261	1.877593	0.036024	0.074231
A	SO2_IDLEX	0	0	0	0	7.99E-05	0.000124	0.000618	0.00865265	0.000924	0	0	0.003219	0
A	SO2_RUNEX	9E-05	0.002567	0.00948	0.002976	0.006812	0.006557	0.00948	0.011212041	0.011649	0.010417	0.002076	0.009288	0.013242
A	SO2_STREX	0	0	8.46E-05	0.000628	9.99E-05	6.37E-05	8.46E-05	5.11111E-07	0.000133	1.39E-05	0.000586	5.01E-05	0.000154
A	TOG_DIURN	0.024903	0.046388	0.048996	0.057349	0.001403	0.000642	0.000289	1.32994E-06	0.001062	6.14E-05	1.786807	0.00087	0.347564
A	TOG_HTSK	0.061657	0.093564	0.089096	0.0981	0.054855	0.024352	0.013852	5.78076E-05	0.015622	0.000814	0.631299	0.008304	0.028392
A	TOG_IDLEX	0	0	0	0	0.02413	0.017772	0.025282	0.485180108	0.063906	0	0	0.463821	0
A	TOG_RESTL	0.022934	0.041206	0.048532	0.056738	0.000772	0.000374	0.000168	7.97633E-07	0.000487	3.58E-05	0.946881	0.000414	0.1401
A	TOG_RUNEX	0.004716	0.009483	0.009524	0.009983	0.08579	0.112949	0.014288	0.071682245	0.021563	1.898202	2.666273	0.071678	0.048331
A	TOG_RUNLS	0.170512	0.364405	0.336782	0.340289	0.429696	0.143744	0.071507	0.000284481	0.181965	0.004928	1.487321	0.053902	0.535482
A	TOG_STREX	0.129977	0.168749	0.200041	0.218155	0.047875	0.024915	0.045336	2.48526E-06	0.083906	0.01014	2.04481	0.039442	0.081274

CalEEMod EMFAC2017 Fleet Mix Input — Year 2030

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.595423	0.053963	0.1714	0.106522	0.021043	0.005556	0.013639	0.023425	0.001443	0.001178	0.00478	0.0009	0.000728
General Office Building	0.595423	0.053963	0.1714	0.106522	0.021043	0.005556	0.013639	0.023425	0.001443	0.001178	0.00478	0.0009	0.000728
Strip Mall	0.595423	0.053963	0.1714	0.106522	0.021043	0.005556	0.013639	0.023425	0.001443	0.001178	0.00478	0.0009	0.000728

Adjustment Factors for EMFAC2017 Gasoline Light Duty Vehicles					
Year	NOx Exhaust	TOG Evaporative	TOG Exhaust	PM Exhaust	CO Exhaust
2020	1	1	1	1	1
2021	1.0002	1.0001	1.0002	1.0009	1.0005
2022	1.0004	1.0003	1.0004	1.0018	1.0014
2023	1.0007	1.0006	1.0007	1.0032	1.0027
2024	1.0012	1.0010	1.0011	1.0051	1.0044
2025	1.0018	1.0016	1.0016	1.0074	1.0065
2026	1.0023	1.0022	1.0020	1.0091	1.0083
2027	1.0028	1.0028	1.0024	1.0105	1.0102
2028	1.0034	1.0035	1.0028	1.0117	1.0120
2029	1.0040	1.0042	1.0032	1.0129	1.0138
2030	1.0047	1.0051	1.0037	1.0142	1.0156
2031	1.0054	1.0061	1.0042	1.0155	1.0173
2032	1.0061	1.0072	1.0047	1.0169	1.0189
2033	1.0068	1.0083	1.0052	1.0182	1.0204
2034	1.0075	1.0095	1.0058	1.0196	1.0218
2035	1.0081	1.0108	1.0063	1.0210	1.0232
2036	1.0088	1.0121	1.0069	1.0223	1.0244
2037	1.0094	1.0134	1.0074	1.0236	1.0255
2038	1.0099	1.0148	1.0079	1.0248	1.0265
2039	1.0104	1.0161	1.0085	1.0259	1.0274
2040	1.0109	1.0174	1.0090	1.0270	1.0281
2041	1.0113	1.0186	1.0095	1.0279	1.0288
2042	1.0116	1.0198	1.0099	1.0286	1.0294
2043	1.0119	1.0207	1.0103	1.0293	1.0299
2044	1.0122	1.0216	1.0106	1.0299	1.0303
2045	1.0124	1.0225	1.0109	1.0303	1.0306
2046	1.0125	1.0233	1.0111	1.0308	1.0309
2047	1.0127	1.0240	1.0113	1.0311	1.0311
2048	1.0128	1.0246	1.0115	1.0314	1.0313
2049	1.0128	1.0252	1.0116	1.0316	1.0315
2050	1.0129	1.0257	1.0117	1.0318	1.0316

*PM Exhaust off model factor is only applied to the PM Exhaust emissions not start/idle

The off-model adjustment factors need to be applied only to emissions from gasoline light duty vehicles (LDA, LDT1, LDT2 and MDV). Please note that the adjustment factors are by calendar year and includes all model years.

Enter NA in the date field if adjustments do not apply

Source: EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX, RESTLOSS and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PMB	PM2.5_PMT	PM10_RUP	PM10_IDLE	PM10_STR	PM10_PMB	PM10_PMT	CO2_RUNE	CO2_IDLEX	CO2_STREX	CH4_RUNE	CH4_IDLEX	CH4_STREX	N2O_RUNE	N2O_IDLEX	N2O_STREX	ROG_RUNI	ROG_IDLEX	ROG_STREX	ROG_HOTS	ROG_RUNI	ROG_RESTL	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STREX	TOG_HOTS	TOG_RUNI	TOG_RESTL	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2021	HHDT	Aggregate	Aggregate	Gasoline	5.162845	484.6824	103.2982	4.062598	0	0.407731	0.001311	0	0.000823	0.005	0.02646	0.001426	0	0.000895	0.02	0.06174	2025.269	0	47.29512	0.112325	0	0.000414	0.149526	0	0.012575	0.585782	0	0.002169	0.156953	0.96912	0.038977	0.070674	0.854771	0	0.002374	0.156953	0.96912	0.038977	0.070674	32.05552	0	5.02137	0.020042	0	0.000468
Santa Clara	2021	HHDT	Aggregate	Aggregate	Diesel	8105.749	988266.7	86260.08	4.147844	63.6365	1.887942	0.058758	0.087222	0	0.008868	0.026073	0.061415	0.091165	0	0.035473	0.060837	1528.481	11606.57	0	0.006422	0.218177	0	0.240256	1.824391	0	0.138263	4.697294	0	0	0	0	0	0.157402	5.347512	0	0	0	0	0	0.5229	60.00634	0	0.01444	0.109653	0
Santa Clara	2021	HHDT	Aggregate	Aggregate	Natural Ga	336.2009	13706.54	1311.183	1.939434	21.5699	0	0.005088	0.034407	0	0.009	0.02646	0.005318	0.035962	0	0.036	0.06174	3233.282	4101.533	0	3.57235	1.261083	0	0.659126	0.836124	0	0.176593	0.0496	0	0	0	0	0	3.788896	1.323011	0	0	0	0	0	10.63714	21.51231	0	0	0	0
Santa Clara	2021	LDA	Aggregate	Aggregate	Gasoline	715693.3	26189161	3369392	0.044609	0	0.21159	0.001358	0	0.001822	0.002	0.01575	0.001477	0	0.001981	0.008	0.03675	266.3197	0	56.92202	0.002711	0	0.058853	0.004863	0	0.027764	0.010662	0	0.269366	0.108645	0.230465	0.191774	0.221801	0.015551	0	0.294921	0.108645	0.230465	0.191774	0.221801	0.690036	0	2.392069	0.002635	0	0.000563
Santa Clara	2021	LDA	Aggregate	Aggregate	Diesel	6670.999	255156.4	31695.34	0.087271	0	0	0.007648	0	0	0.002	0.01575	0.007994	0	0	0.008	0.03675	205.4073	0	0	0.000708	0	0	0.032287	0	0	0.015244	0	0	0	0	0	0	0.017354	0	0	0	0	0	0	0.210705	0	0	0.001942	0	0
Santa Clara	2021	LDA	Aggregate	Aggregate	Electricity	24022.27	869835.7	117842.5	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2021	LDT1	Aggregate	Aggregate	Gasoline	71628.15	2413668	331256	0.105802	0	0.272111	0.001862	0	0.002385	0.002	0.01575	0.002025	0	0.002594	0.008	0.03675	308.1227	0	66.19689	0.005661	0	0.076866	0.008066	0	0.03002	0.024911	0	0.384911	0.189186	0.681609	0.358705	0.461608	0.036311	0	0.421425	0.189186	0.681609	0.358705	0.461608	1.200263	0	2.537143	0.003049	0	0.000655
Santa Clara	2021	LDT1	Aggregate	Aggregate	Diesel	39.89374	725.5582	131.2284	1.268412	0	0	0.168474	0	0	0.002	0.01575	0.176091	0	0	0.008	0.03675	413.9966	0	0	0.010139	0	0	0.065074	0	0	0.218297	0	0	0	0	0	0	0.248517	0	0	0	0	0	0	1.237222	0	0	0.003914	0	0
Santa Clara	2021	LDT1	Aggregate	Aggregate	Electricity	483.8807	18039.76	2391.303	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2021	LDT2	Aggregate	Aggregate	Gasoline	246759.9	8311704	1150425	0.087782	0	0.326789	0.001356	0	0.001737	0.002	0.01575	0.001475	0	0.001889	0.008	0.03675	338.518	0	73.70907	0.004072	0	0.077467	0.007118	0	0.035187	0.01674	0	0.36702	0.133338	0.446757	0.285742	0.307995	0.024414	0	0.40184	0.133338	0.446757	0.285742	0.307995	0.930639	0	3.014399	0.00335	0	0.000729
Santa Clara	2021	LDT2	Aggregate	Aggregate	Diesel	1518.218	59025.65	7458.416	0.041668	0	0	0.004904	0	0	0.002	0.01575	0.005126	0	0	0.008	0.03675	282.8504	0	0	0.000657	0	0	0.04446	0	0	0.01415	0	0	0	0	0	0	0.016109	0	0	0	0	0	0	0.12212	0	0	0.002674	0	0
Santa Clara	2021	LDT2	Aggregate	Aggregate	Electricity	2166.546	67548.49	10876.24	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2021	LHDT1	Aggregate	Aggregate	Gasoline	16540.61	571642.7	246430.4	0.262338	0.03949	0.549198	0.002191	0	0.000401	0.002	0.03276	0.002383	0	0.000436	0.008	0.07644	1017.255	122.0379	19.14342	0.012124	0.123606	0.02716	0.015765	0.003154	0.042297	0.059375	0.45228	0.137987	0.130258	0.89758	0.02599	0.052227	0.08664	0.659966	0.151079	0.130258	0.89758	0.02599	0.052227	1.086844	3.748723	1.811769	0.010067	0.001208	0.000189
Santa Clara	2021	LHDT1	Aggregate	Aggregate	Diesel	10609.08	409397.3	133448.8	1.862203	2.152154	0	0.023297	0.02704	0	0.003	0.03276	0.02435	0.028263	0	0.012	0.07644	552.5074	134.745	0	0.007585	0.005098	0	0.086846	0.02118	0	0.163311	0.10976	0	0	0	0	0	0.185919	0.124954	0	0	0	0	0	0.686231	0.909745	0	0.005223	0.001274	0
Santa Clara	2021	LHDT2	Aggregate	Aggregate	Gasoline	2219.575	77018.29	33068.36	0.272207	0.039035	0.535592	0.002122	0	0.00036	0.002	0.03822	0.002307	0	0.000392	0.008	0.08918	1160.22	140.2323	21.7453	0.010038	0.122897	0.026292	0.016913	0.003077	0.040901	0.045762	0.447168	0.133103	0.127611	0.884759	0.023996	0.048928	0.066776	0.652507	0.145731	0.127611	0.884759	0.023996	0.048928	0.835401	3.750559	1.839341	0.011481	0.001388	0.000215
Santa Clara	2021	LHDT2	Aggregate	Aggregate	Diesel	4214.571	160661.6	53014	1.542154	2.158821	0	0.022944	0.027219	0	0.003	0.03822	0.023981	0.02845	0	0.012	0.08918	621.5562	215.9968	0	0.007204	0.005098	0	0.0977	0.033952	0	0.155094	0.10976	0	0	0	0	0	0.176564	0.124954	0	0	0	0	0	0.650931	0.909745	0	0.005876	0.002042	0
Santa Clara	2021	MCY	Aggregate	Aggregate	Gasoline	32119.63	239436.8	64239.26	1.15497	0	0.270443	0.001772	0	0.00303	0.001	0.00504	0.001893	0	0.003213	0.004	0.01176	210.3906	0	61.75755	0.33122	0	0.25818	0.066438	0	0.015338	2.253066	0	1.967635	0.716612	2.132348	1.002545	1.822873	2.774349	0	2.14098	0.716612	2.132348	1.002545	1.822873	19.56337	0	8.976601	0.002082	0	0.000611
Santa Clara	2021	MDV	Aggregate	Aggregate	Gasoline	149542.9	4865312	690430.3	0.11839	0	0.410054	0.001476	0	0.002019	0.002	0.01575	0.001604	0	0.002194	0.008	0.03675	409.4409	0	89.81723	0.005494	0	0.095775	0.008922	0	0.03884	0.024634	0	0.48393	0.15482	0.49034	0.340146	0.361645	0.034949	0	0.529797	0.15482	0.49034	0.340146	0.361645	1.127252	0	3.59329	0.004052	0	0.000889
Santa Clara	2021	MDV	Aggregate	Aggregate	Diesel	3426.389	128242	16726.03	0.044109	0	0	0.004602	0	0	0.002	0.01575	0.00481	0	0	0.008	0.03675	370.3019	0	0	0.000514	0	0	0.058206	0	0	0.011068	0	0	0	0	0	0	0.0126	0	0	0	0	0	0	0.188966	0	0	0.003501	0	0
Santa Clara	2021	MDV	Aggregate	Aggregate	Electricity	687.5446	22639.78	3509.471	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2021	MH	Aggregate	Aggregate	Gasoline	2931.22	26379	293.2393	0.474084	0	0.332292	0.001724	0	0.000381	0.003	0.05586	0.001875	0	0.000414	0.012	0.13034	1782.907	0	26.40751	0.017557	0	0.033119	0.028008	0	0.03399	0.078746	0	0.143103	0.096257	2.347589	0.039223	0.115979	0.114906	0	0.15668	0.096257	2.347589	0.039223	0.115979	2.065959	0	3.165436	0.017643	0	0.000261
Santa Clara	2021	MH	Aggregate	Aggregate	Diesel	984.446	9504.941	98.4446	4.382014	0	0	0.092722	0	0	0.004	0.05586	0.096914	0	0	0.016	0.13034	1031.304	0	0	0.005198	0	0	0.162107	0	0	0.111901	0	0	0	0	0	0	0.127391	0	0	0	0	0	0	0.400207	0	0	0.00975	0	0
Santa Clara	2021	MHDT	Aggregate	Aggregate	Gasoline	1410.134	72248.39	28213.97	0.591018	0.088168	0.389628	0.001358	0	0.000497	0.003	0.05586	0.001477	0	0.00054	0.012	0.13034	1752.404	539.4334	40.1358	0.018696	0.257865	0.042095	0.027833	0.0072	0.028931	0.092815	1.007884	0.233354	0.09611	0.563096	0.020857	0.043005	0.135436	1.470848	0.255494	0.09611	0.563096	0.020857	0.043005	2.155492	15.06152	5.301778	0.017341	0.005338	0.000397
Santa Clara	2021	MHDT	Aggregate	Aggregate	Diesel	9487.148	545455.1	96101.91	3.194916	8.74953	1.398943	0.080969	0.02675	0	0.003	0.05586	0.08463	0.02796	0	0.012	0.13034	1081.992	930.4887	0	0.009431	0.005843	0	0.170074	0.14626	0	0.203046	0.125806	0	0	0	0	0	0.231153	0.143221	0	0	0	0	0	0.573058	2.609835	0	0.010222	0.008791	0
Santa Clara	2021	OBUS	Aggregate	Aggregate	Gasoline	502.2127	24696.47	10048.27	0.501682	0.065104	0.329488	0.000916	0	0.000212	0.003	0.05586	0.000996	0	0.00023	0.012	0.13034	1793.018	381.4064	26.74037	0.014791	0.200187	0.030949	0.025044	0.005583	0.026445	0.070359	0.746923	0.159737	0.026848	0.294072	0.016083	0.036997	0.102667	1.089908	0.174892	0.026848	0.294072	0.016083	0.036997	1.576822	5.778528	3.351004	0.017743	0.003774	0.000265
Santa Clara	2021	OBUS	Aggregate	Aggregate	Diesel	767.9729	54443.73	7049.223	2.779706	13.63199	1.84	0.044765	0.045778	0	0.003	0.05586	0.046789	0.047848	0	0.012	0.13034	1202.163	1945.083	0	0.005321	0.035079	0	0.188963	0.30574	0	0.114561	0.755235	0	0	0	0	0	0.130419	0.859777	0	0	0	0	0	0.397353	8.822131	0	0.011357	0.018376	0
Santa Clara	2021	SBUS	Aggregate	Aggregate	Gasoline	235.3456	11037.57	941.3825	0.448701	0.923977	0.560273	0.001205	0	0.000494	0.002	0.3192	0.001311	0	0.000537	0.008	0.7448	872.735	2601.946	49.24562	0.012804	2.443216	0.058897	0.025163	0.088108	0.05292	0.063019	10.60409	0.336056	0.060254	0.423958	0.009983	0.025	0.091957	15.47346	0.367939	0.060254	0.423958	0.009983	0.025	1.371308	82.01386	8.8054	0.008636	0.025748	0.000487
Santa Clara	2021	SBUS	Aggregate	Aggregate	Diesel	1013.214	32006.31	11692.35	6.970742	45.79682	0.74176	0.043352	0.053733	0	0.003	0.3192	0.045313	0.056163	0	0.012	0.7448	1153.149	3727.733	0	0.004763	0.013307	0	0.181259	0.585948	0	0.102551	0.286497	0	0	0	0	0	0.116746	0.326154	0	0	0	0	0	0.279558	5.707206	0	0.010894	0.035218	0
Santa Clara	2021	UBUS	Aggregate	Aggregate	Gasoline	8.415569	1059.368	33.66228	0.456042	0	1.173674	0.000327	0	9.66E-05	0.003	0.05586	0.000355	0	0.000105	0.012	0.13034	2351.957	0	104.4673	0.006811	0	0.169572	0.0345	0	0.088962	0.022728	0	0.727258	0.171351	1.189018	0.028073	0.044636	0.033164	0	0.796256	0.171351	1.189018	0.028073	0.044636	0.499495	0	8.852622	0.023275	0	0.001034
Santa Clara	2021	UBUS	Aggregate	Aggregate	Diesel	423.0651	46463.12	1692.26	0.803452	0	0	0.005651	0	0	0.008415	0.029326	0.005907	0	0	0.03366	0.068427	1481.161	0	0	0.077358	0	0	0.232818	0	0	0.001105	0	0	0	0	0	0	0.078949	0	0	0	0	0	0	0.131304	0	0	0.014002	0	0
Santa Clara	2021	UBUS	Aggregate	Aggregate	Natural Ga	103.9599	12318.22	415.8396	0.489341	0	0	0.003183	0	0	0.008475	0.029034	0.003327	0	0	0.033899	0.067745	2016.304	0	0	6.413624	0	0	0.411037	0	0	0.091638	0	0	0	0	0	0	6.545574	0	0	0	0	0	0	49.80412	0	0	0	0	0

Source: EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX, RESTLOSS and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLE	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PMP	PM2.5_PMW	PM10_RUP	PM10_IDL	PM10_STR	PM10_PMP	PM10_PMW	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNE	N2O_IDLE	N2O_STRE	ROG_RUNI	ROG_IDLE	ROG_STRE	ROG_HOTS	ROG_RUNI	ROG_REST	ROG_DIUR	TOG_RUNI	TOG_IDLE	TOG_STRE	TOG_HOTS	TOG_RUNI	TOG_REST	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2022	HHDT	Aggregate	Aggregate	Gasoline	4.973172	516.9338	99.50323	3.654204	0	0.338391	0.001236	0	0.000744	0.005	0.02646	0.001344	0	0.00081	0.02	0.06174	1964.961	0	46.86739	0.097725	0	0.00044	0.140899	0	0.010576	0.494672	0	0.002301	0.136891	0.830556	0.033943	0.061166	0.721824	0	0.00252	0.136891	0.830556	0.033943	0.061166	30.00648	0	5.27737	0.019445	0	0.000464
Santa Clara	2022	HHDT	Aggregate	Aggregate	Diesel	8277.463	1011013	88031.26	3.535499	63.08378	2.080194	0.033949	0.03347	0	0.008873	0.026088	0.035484	0.034983	0	0.035494	0.060872	1486.606	11783.13	0	0.003901	0.215524	0	0.233674	1.852143	0	0.08399	4.640183	0	0	0	0.095616	5.282495	0	0	0	0	0.366847	63.30293	0	0.014045	0.111321	0
Santa Clara	2022	HHDT	Aggregate	Aggregate	Natural Ga	348.7902	14223.14	1360.282	1.755776	21.14752	0	0.004789	0.030991	0	0.009	0.02646	0.005006	0.032392	0	0.036	0.06174	3203.692	4060.116	0	3.511574	1.248503	0	0.653093	0.827681	0	0.161697	0.045805	0	0	0	3.710887	1.306054	0	0	0	0	10.70122	21.55662	0	0	0	0
Santa Clara	2022	LDA	Aggregate	Aggregate	Gasoline	733557.7	26453304	3456649	0.03872	0	0.197227	0.001299	0	0.001748	0.002	0.01575	0.001413	0	0.001902	0.008	0.03675	259.2126	0	55.39361	0.002345	0	0.054199	0.004449	0	0.026685	0.009015	0	0.243726	0.100881	0.22086	0.178182	0.20337	0.013151	0	0.266848	0.100881	0.22086	0.178182	0.20337	0.63218	0	2.325265	0.002565	0	0.000548
Santa Clara	2022	LDA	Aggregate	Aggregate	Diesel	7146.668	268335.1	33963.02	0.071556	0	0	0.006579	0	0	0.002	0.01575	0.006877	0	0	0.008	0.03675	200.3149	0	0	0.000626	0	0	0.031487	0	0	0.013485	0	0	0	0	0.015352	0	0	0	0	0	0.198488	0	0	0.001894	0	0
Santa Clara	2022	LDA	Aggregate	Aggregate	Electricity	25894.61	943282.8	126428	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0
Santa Clara	2022	LDT1	Aggregate	Aggregate	Gasoline	73556.92	2443329	340743.8	0.091156	0	0.251292	0.001724	0	0.002226	0.002	0.01575	0.001875	0	0.002421	0.008	0.03675	300.527	0	64.49485	0.004882	0	0.070027	0.007217	0	0.028775	0.021236	0	0.344801	0.173613	0.628849	0.332831	0.420667	0.030964	0	0.377511	0.173613	0.628849	0.332831	0.420667	1.068397	0	2.450832	0.002974	0	0.000638
Santa Clara	2022	LDT1	Aggregate	Aggregate	Diesel	36.8388	667.9121	121.0603	1.185315	0	0	0.157566	0	0	0.002	0.01575	0.164691	0	0	0.008	0.03675	408.3259	0	0	0.009501	0	0	0.064183	0	0	0.204561	0	0	0	0	0.232879	0	0	0	0	0	1.159574	0	0	0.00386	0	0
Santa Clara	2022	LDT1	Aggregate	Aggregate	Electricity	624.8771	24059.07	3099.469	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0
Santa Clara	2022	LDT2	Aggregate	Aggregate	Gasoline	250455.4	8295824	1167439	0.077278	0	0.299792	0.001307	0	0.001684	0.002	0.01575	0.001421	0	0.001831	0.008	0.03675	327.6413	0	71.42656	0.003665	0	0.072415	0.006473	0	0.033384	0.014906	0	0.339292	0.128171	0.436499	0.281495	0.299507	0.021744	0	0.371482	0.128171	0.436499	0.281495	0.299507	0.860463	0	2.923834	0.003242	0	0.000707
Santa Clara	2022	LDT2	Aggregate	Aggregate	Diesel	1663.513	62652.21	8136.947	0.039252	0	0	0.004754	0	0	0.002	0.01575	0.004969	0	0	0.008	0.03675	275.5741	0	0	0.000647	0	0	0.043316	0	0	0.013935	0	0	0	0	0.015864	0	0	0	0	0	0.123161	0	0	0.002605	0	0
Santa Clara	2022	LDT2	Aggregate	Aggregate	Electricity	2695.96	82111.52	13502.44	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0
Santa Clara	2022	LHDT1	Aggregate	Aggregate	Gasoline	16536.9	566343.8	246375.2	0.235238	0.038471	0.530556	0.002161	0	0.000388	0.002	0.03276	0.00235	0	0.000422	0.008	0.07644	1006.569	121.1222	18.98971	0.01086	0.121305	0.025473	0.014262	0.003125	0.041267	0.052874	0.440699	0.129054	0.125369	0.861898	0.025267	0.050121	0.077153	0.643067	0.141298	0.125369	0.861898	0.025267	0.050121	0.97349	3.751848	1.764958	0.009961	0.001199	0.000188
Santa Clara	2022	LHDT1	Aggregate	Aggregate	Diesel	11104.44	423266.4	139679.8	1.613919	2.033114	0	0.021273	0.026869	0	0.003	0.03276	0.022235	0.028084	0	0.012	0.07644	544.3042	133.047	0	0.007318	0.005098	0	0.085557	0.020913	0	0.157544	0.10976	0	0	0	0.179353	0.124954	0	0	0	0	0.661457	0.909745	0	0.005146	0.001258	0
Santa Clara	2022	LHDT2	Aggregate	Aggregate	Gasoline	2253.3	77523.96	33570.81	0.240034	0.037891	0.516259	0.002078	0	0.000346	0.002	0.03822	0.00226	0	0.000377	0.008	0.08918	1147.291	139.0737	21.54397	0.008737	0.120275	0.024583	0.015135	0.003045	0.039911	0.039365	0.434196	0.123837	0.121118	0.819863	0.023133	0.046225	0.057441	0.633578	0.135586	0.121118	0.819863	0.023133	0.046225	0.722025	3.75488	1.776904	0.011353	0.001376	0.000213
Santa Clara	2022	LHDT2	Aggregate	Aggregate	Diesel	4438.985	166319.5	55836.85	1.346918	2.041795	0	0.021771	0.027131	0	0.003	0.03822	0.022756	0.028358	0	0.012	0.08918	612.5422	213.4891	0	0.007003	0.005098	0	0.096283	0.033558	0	0.150761	0.10976	0	0	0	0.171631	0.124954	0	0	0	0	0.634383	0.909745	0	0.005791	0.002018	0
Santa Clara	2022	MCY	Aggregate	Aggregate	Gasoline	32925.36	241011	65850.71	1.151611	0	0.270649	0.001812	0	0.002978	0.001	0.00504	0.001937	0	0.003161	0.004	0.01176	210.2729	0	61.39967	0.328946	0	0.256691	0.06628	0	0.015352	2.228751	0	1.954835	0.704215	2.060677	0.995009	1.817765	2.753726	0	2.127328	0.704215	2.060677	0.995009	1.817765	19.18808	0	9.0045	0.002081	0	0.000608
Santa Clara	2022	MDV	Aggregate	Aggregate	Gasoline	151961.1	4876240	702265.7	0.099589	0	0.371177	0.001397	0	0.001912	0.002	0.01575	0.001519	0	0.002079	0.008	0.03675	396.236	0	86.90417	0.004621	0	0.087878	0.007887	0	0.036541	0.019446	0	0.437645	0.147462	0.472734	0.331376	0.347901	0.028322	0	0.479161	0.147462	0.472734	0.331376	0.347901	0.980018	0	3.406111	0.003921	0	0.00086
Santa Clara	2022	MDV	Aggregate	Aggregate	Diesel	3721.225	135478.8	18101.22	0.038775	0	0	0.004203	0	0	0.002	0.01575	0.004393	0	0	0.008	0.03675	360.3121	0	0	0.000478	0	0	0.056636	0	0	0.010285	0	0	0	0	0.011709	0	0	0	0	0	0.184421	0	0	0.003406	0	0
Santa Clara	2022	MDV	Aggregate	Aggregate	Electricity	1080.167	34834.41	5508.057	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0
Santa Clara	2022	MH	Aggregate	Aggregate	Gasoline	2891.835	26265.33	289.2991	0.413359	0	0.334516	0.001633	0	0.000362	0.003	0.05586	0.001776	0	0.000394	0.012	0.13034	1756.095	0	25.97914	0.015124	0	0.032419	0.025426	0	0.034963	0.066433	0	0.137518	0.088945	2.156488	0.036513	0.106238	0.096939	0	0.150564	0.088945	2.156488	0.036513	0.106238	1.697423	0	3.037213	0.017378	0	0.000257
Santa Clara	2022	MH	Aggregate	Aggregate	Diesel	1019.353	9712.32	101.9353	4.184918	0	0	0.085576	0	0	0.004	0.05586	0.089445	0	0	0.016	0.13034	1018.587	0	0	0.005027	0	0	0.160108	0	0	0.108225	0	0	0	0	0.123206	0	0	0	0	0	0.382773	0	0	0.009629	0	0
Santa Clara	2022	MHDT	Aggregate	Aggregate	Gasoline	1456.112	75284.48	29133.88	0.474932	0.088412	0.377896	0.001319	0	0.000449	0.003	0.05586	0.001435	0	0.00051	0.012	0.13034	1722.789	532.6547	39.05903	0.014881	0.262553	0.04023	0.023376	0.007484	0.029181	0.072945	1.011617	0.219187	0.087649	0.506692	0.018903	0.038182	0.106442	1.47615	0.239982	0.087649	0.506692	0.018903	0.038182	1.680953	15.10368	4.939745	0.017048	0.005271	0.000287
Santa Clara	2022	MHDT	Aggregate	Aggregate	Diesel	9430.024	551923.8	94917.85	2.277066	7.413096	1.687822	0.039812	0.015538	0	0.003	0.05586	0.041612	0.01624	0	0.012	0.13034	1050.628	914.98	0	0.004378	0.004667	0	0.165144	0.143822	0	0.094265	0.100481	0	0	0	0.107314	0.11439	0	0	0	0	0.32147	2.58681	0	0.009926	0.008644	0
Santa Clara	2022	OBUS	Aggregate	Aggregate	Gasoline	501.9655	24150.25	10043.33	0.443255	0.065137	0.32561	0.000952	0	0.000213	0.003	0.05586	0.001035	0	0.000232	0.012	0.13034	1767.375	377.9272	26.38965	0.013022	0.200837	0.030332	0.022732	0.005646	0.026387	0.061436	0.747416	0.156088	0.026802	0.295531	0.015889	0.036065	0.089647	1.090627	0.170897	0.026802	0.295531	0.015889	0.036065	1.365657	5.781487	3.261978	0.01749	0.00374	0.000261
Santa Clara	2022	OBUS	Aggregate	Aggregate	Diesel	762.3964	53839.19	6991.348	2.314382	10.4182	2.005848	0.021086	0.015288	0	0.003	0.05586	0.02204	0.015979	0	0.012	0.13034	1185.916	1892.098	0	0.002538	0.027964	0	0.18641	0.297411	0	0.054653	0.602048	0	0	0	0.062218	0.685386	0	0	0	0	0.239321	8.657847	0	0.011204	0.017876	0
Santa Clara	2022	SBUS	Aggregate	Aggregate	Gasoline	249.3134	11500.83	997.2534	0.430325	0.924415	0.566946	0.001196	0	0.000498	0.002	0.3192	0.001301	0	0.000541	0.008	0.7448	865.5448	2582.545	48.67377	0.011856	2.442701	0.058309	0.024366	0.088243	0.053528	0.058325	10.61061	0.332747	0.061157	0.415506	0.010413	0.025261	0.085108	15.48298	0.364316	0.061157	0.415506	0.010413	0.025261	1.259002	82.05319	8.624782	0.008565	0.025556	0.000482
Santa Clara	2022	SBUS	Aggregate	Aggregate	Diesel	1014.086	31965.96	11702.42	6.765334	45.00081	0.786274	0.042018	0.05033	0	0.003	0.3192	0.043917	0.052605	0	0.012	0.7448	1145.085	3716.49	0	0.004669	0.013069	0	0.179991	0.584181	0	0.100532	0.281366	0	0	0	0.114448	0.320314	0	0	0	0	0.27746	5.867721	0	0.010818	0.035112	0
Santa Clara	2022	UBUS	Aggregate	Aggregate	Gasoline	8.419396	1059.849	33.67758	0.491737	0	1.236285	0.000328	0	9.7E-05	0.003	0.05586	0.000356	0	0.000105	0.012	0.13034	2351.817	0	104.599	0.006789	0	0.178596	0.036386	0	0.091633	0.022728	0	0.768536	0.190076	1.35875	0.031079	0.049249	0.033164	0	0.84145	0.190076	1.35875	0.031079	0.049249	0.527722	0	8.852622	0.023273	0	0.001035
Santa Clara	2022	UBUS	Aggregate	Aggregate	Diesel	423.2358	46482.16	1692.943	0.803453	0	0	0.005651	0	0	0.008415	0.029326	0.005907	0	0	0.033661	0.068427	1481.178	0	0	0.077358	0	0	0.232821	0	0	0.001105	0	0	0	0	0.078949	0	0	0	0	0	0.131304	0	0	0.014002	0	0
Santa Clara	2022	UBUS	Aggregate	Aggregate	Natural Ga	104.0289	12325.91	416.1154	0.48934	0	0	0.003183	0	0	0.008475	0.029034	0.003327	0	0	0.033899	0.067746	2016.3	0	0	6.413607	0	0	0.411036	0	0	0.091638	0	0	0	0	6.545556	0	0	0	0	0	49.80397	0	0	0	0	0

Source: EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX, RESTLOSS and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLE	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PMB	PM2.5_PMT	PM10_RUP	PM10_IDLE	PM10_STR	PM10_PMB	PM10_PMT	PM10_PMI	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNE	N2O_IDLEX	N2O_STRE	ROG_RUNI	ROG_IDLEX	ROG_STRE	ROG_HOTS	ROG_RUNI	ROG_REST	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_HOTS	TOG_RUNI	TOG_REST	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2023	HHDT	Aggregate	Aggregate	Gasoline	4.815448	553.4124	96.34748	3.178298	0	0.254165	0.001157	0	0.000623	0.005	0.02646	0.001259	0	0.000677	0.02	0.06174	1915.642	0	46.38676	0.084318	0	0.000462	0.130889	0	0.008571	0.409676	0	0.002416	0.109047	0.558691	0.026465	0.047808	0.597798	0	0.002645	0.109047	0.558691	0.026465	0.047808	27.8207	0	5.57125	0.018957	0	0.000459
Santa Clara	2023	HHDT	Aggregate	Aggregate	Diesel	8401.79	1034051	89180.29	2.696198	57.80539	2.360147	0.023887	0.026373	0	0.008879	0.026103	0.024967	0.027565	0	0.035514	0.060907	1411.729	11326.45	0	0.001106	0.214953	0	0.221904	1.78036	0	0.023817	4.627869	0	0	0	0	0	0.027114	5.268477	0	0	0	0	0	0.233741	67.52667	0	0.013337	0.107007	0
Santa Clara	2023	HHDT	Aggregate	Aggregate	Natural Ga	360.3246	14693.25	1405.266	1.588314	20.76108	0	0.004529	0.028055	0	0.009	0.02646	0.004734	0.029323	0	0.036	0.06174	3174.275	4018.428	0	3.456549	1.237751	0	0.647097	0.819183	0	0.148044	0.042416	0	0	0	3.64007	1.291393	0	0	0	0	0	10.76049	21.60789	0	0	0	0
Santa Clara	2023	LDA	Aggregate	Aggregate	Gasoline	751359.6	26739811	3542534	0.034059	0	0.184615	0.001247	0	0.001682	0.002	0.01575	0.001356	0	0.001829	0.008	0.03675	252.091	0	53.87356	0.002048	0	0.050071	0.004113	0	0.025656	0.007696	0	0.221504	0.094205	0.212597	0.166193	0.187545	0.011228	0	0.242518	0.094205	0.212597	0.166193	0.187545	0.586148	0	2.259775	0.002495	0	0.000533
Santa Clara	2023	LDA	Aggregate	Aggregate	Diesel	7591.987	280497.7	36090.42	0.058679	0	0	0.005598	0	0	0.002	0.01575	0.005851	0	0	0.008	0.03675	195.1926	0	0	0.000552	0	0	0.030682	0	0	0.011887	0	0	0	0	0	0	0.013532	0	0	0	0	0	0.188023	0	0	0.001845	0	0
Santa Clara	2023	LDA	Aggregate	Aggregate	Electricity	28074.67	1034348	136585.9	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0	0
Santa Clara	2023	LDT1	Aggregate	Aggregate	Gasoline	75517.84	2475367	350251	0.078745	0	0.232751	0.001604	0	0.002087	0.002	0.01575	0.001745	0	0.00227	0.008	0.03675	292.8794	0	62.80265	0.004214	0	0.063907	0.006493	0	0.02759	0.018087	0	0.309393	0.159698	0.584022	0.309209	0.384203	0.026384	0	0.338746	0.159698	0.584022	0.309209	0.384203	0.955745	0	2.366858	0.002898	0	0.000621
Santa Clara	2023	LDT1	Aggregate	Aggregate	Diesel	34.1777	620.5176	112.4335	1.098891	0	0	0.146297	0	0	0.002	0.01575	0.152912	0	0	0.008	0.03675	401.6268	0	0	0.008837	0	0	0.06313	0	0	0.190256	0	0	0	0	0.216594	0	0	0	0	0	0	1.080107	0	0	0.003797	0	0
Santa Clara	2023	LDT1	Aggregate	Aggregate	Electricity	788.4144	31182.48	3917.01	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0	0
Santa Clara	2023	LDT2	Aggregate	Aggregate	Gasoline	254167.5	8294772	1184412	0.06837	0	0.275999	0.001263	0	0.001639	0.002	0.01575	0.001374	0	0.001783	0.008	0.03675	316.8848	0	69.17216	0.003305	0	0.067695	0.00592	0	0.031692	0.013288	0	0.313842	0.123254	0.427158	0.276975	0.291298	0.019387	0	0.343617	0.123254	0.427158	0.276975	0.291298	0.800025	0	2.837237	0.003136	0	0.000685
Santa Clara	2023	LDT2	Aggregate	Aggregate	Diesel	1802.688	66004.69	8781.203	0.037098	0	0	0.004581	0	0	0.002	0.01575	0.004788	0	0	0.008	0.03675	268.3329	0	0	0.000636	0	0	0.042178	0	0	0.01369	0	0	0	0	0.015585	0	0	0	0	0	0	0.124122	0	0	0.002537	0	0
Santa Clara	2023	LDT2	Aggregate	Aggregate	Electricity	3304.555	98384.64	16510.28	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0	0
Santa Clara	2023	LHDT1	Aggregate	Aggregate	Gasoline	16555.13	562142	246646.7	0.210457	0.037398	0.511224	0.002137	0	0.000377	0.002	0.03276	0.002324	0	0.00041	0.008	0.07644	994.5276	120.0678	18.82225	0.009676	0.118805	0.02387	0.012895	0.003089	0.040194	0.046707	0.428491	0.120584	0.120359	0.829144	0.024473	0.047994	0.068155	0.625253	0.132025	0.120359	0.829144	0.024473	0.047994	0.867722	3.754766	1.724	0.009842	0.001188	0.000186
Santa Clara	2023	LHDT1	Aggregate	Aggregate	Diesel	11594.64	435998.6	145846	1.400562	1.919948	0	0.019496	0.026734	0	0.003	0.03276	0.020378	0.027943	0	0.012	0.07644	535.8142	131.265	0	0.007088	0.005098	0	0.084223	0.020633	0	0.152594	0.10976	0	0	0	0.173718	0.124954	0	0	0	0	0	0.641529	0.909745	0	0.005065	0.001241	0
Santa Clara	2023	LHDT2	Aggregate	Aggregate	Gasoline	2285.018	77947.41	34043.37	0.21093	0.036728	0.496392	0.002042	0	0.000334	0.002	0.03822	0.00222	0	0.000363	0.008	0.08918	1132.921	137.76	21.32176	0.007566	0.117557	0.022949	0.013529	0.00301	0.038884	0.03359	0.420989	0.114958	0.114086	0.752468	0.022171	0.043386	0.049014	0.614306	0.125864	0.114086	0.752468	0.022171	0.043386	0.620201	3.758932	1.718516	0.011211	0.001363	0.000211
Santa Clara	2023	LHDT2	Aggregate	Aggregate	Diesel	4660.728	171541.4	58626.09	1.17888	1.93121	0	0.020832	0.02707	0	0.003	0.03822	0.021774	0.028294	0	0.012	0.08918	603.2432	210.8377	0	0.00683	0.005098	0	0.094821	0.033141	0	0.147052	0.10976	0	0	0	0.167409	0.124954	0	0	0	0	0	0.621451	0.909745	0	0.005703	0.001993	0
Santa Clara	2023	MCY	Aggregate	Aggregate	Gasoline	33683.49	242470.7	67366.97	1.148719	0	0.270672	0.00184	0	0.002859	0.001	0.00504	0.001969	0	0.003039	0.004	0.01176	210.1672	0	61.03922	0.326994	0	0.255241	0.066143	0	0.01536	2.208057	0	1.941958	0.689105	1.969445	0.985054	1.809555	2.736079	0	2.11358	0.689105	1.969445	0.985054	1.809555	18.86893	0	9.034026	0.00208	0	0.000604
Santa Clara	2023	MDV	Aggregate	Aggregate	Gasoline	154431.4	4896063	714241.1	0.085683	0	0.336488	0.001332	0	0.001823	0.002	0.01575	0.001448	0	0.001982	0.008	0.03675	383.1839	0	84.08131	0.004049	0	0.08064	0.007039	0	0.034344	0.016817	0	0.396565	0.140569	0.457303	0.323766	0.336538	0.024505	0	0.434185	0.140569	0.457303	0.323766	0.336538	0.891357	0	3.240031	0.003792	0	0.000832
Santa Clara	2023	MDV	Aggregate	Aggregate	Diesel	4004.429	142223.9	19410.39	0.034292	0	0	0.003829	0	0	0.002	0.01575	0.004002	0	0	0.008	0.03675	350.448	0	0	0.000445	0	0	0.055086	0	0	0.009578	0	0	0	0	0.010904	0	0	0	0	0	0	0.180483	0	0	0.003313	0	0
Santa Clara	2023	MDV	Aggregate	Aggregate	Electricity	1532.638	48234.63	7794.674	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0	0
Santa Clara	2023	MH	Aggregate	Aggregate	Gasoline	2857.04	26157.03	285.8182	0.361451	0	0.336127	0.001555	0	0.000345	0.003	0.05586	0.001691	0	0.000375	0.012	0.13034	1731.827	0	25.56622	0.013045	0	0.031746	0.02323	0	0.035777	0.05596	0	0.132332	0.081683	1.97006	0.033844	0.096831	0.081657	0	0.144887	0.081683	1.97006	0.033844	0.096831	1.390474	0	2.91812	0.017138	0	0.000253
Santa Clara	2023	MH	Aggregate	Aggregate	Diesel	1053.778	9907.819	105.3778	4.0099	0	0	0.079211	0	0	0.004	0.05586	0.082793	0	0	0.016	0.13034	1007.175	0	0	0.004873	0	0	0.158314	0	0	0.104917	0	0	0	0	0.119441	0	0	0	0	0	0	0.367033	0	0	0.009521	0	0
Santa Clara	2023	MHDT	Aggregate	Aggregate	Gasoline	1507.68	78317.15	30165.67	0.385258	0.088623	0.367592	0.001293	0	0.000446	0.003	0.05586	0.001406	0	0.000485	0.012	0.13034	1697.438	526.34	38.16999	0.011942	0.266499	0.038604	0.019927	0.007724	0.029367	0.057622	1.014767	0.206928	0.080059	0.455824	0.017154	0.033931	0.084081	1.480746	0.22656	0.080059	0.455824	0.017154	0.033931	1.316681	15.14023	4.623501	0.016798	0.005209	0.000378
Santa Clara	2023	MHDT	Aggregate	Aggregate	Diesel	9262.822	558718.8	92583.75	1.59247	5.703996	2.12952	0.007398	0.005414	0	0.003	0.05586	0.007733	0.005658	0	0.012	0.13034	1010.629	886.4048	0	0.000529	0.003602	0	0.158857	0.13933	0	0.011387	0.077551	0	0	0	0.012963	0.088286	0	0	0	0	0	0.113094	2.687765	0	0.009548	0.008374	0
Santa Clara	2023	OBUS	Aggregate	Aggregate	Gasoline	503.4572	23697.77	10073.17	0.401971	0.065148	0.321785	0.000992	0	0.000219	0.003	0.05586	0.001079	0	0.000239	0.012	0.13034	1743.614	374.6133	26.08015	0.011771	0.201157	0.029667	0.020963	0.005691	0.026276	0.05538	0.74759	0.152323	0.027045	0.299878	0.01619	0.03654	0.080811	1.090882	0.166775	0.027045	0.299878	0.01619	0.03654	1.211154	5.782545	3.193149	0.017254	0.003707	0.000258
Santa Clara	2023	OBUS	Aggregate	Aggregate	Diesel	753.4001	53354.33	6899.877	1.902854	8.28017	2.210652	0.009253	0.002588	0	0.003	0.05586	0.009671	0.002705	0	0.012	0.13034	1163.247	1820.683	0	0.000567	0.024706	0	0.182846	0.286186	0	0.012205	0.533913	0	0	0	0.013895	0.605542	0	0	0	0	0	0.141032	9.053135	0	0.01099	0.017201	0
Santa Clara	2023	SBUS	Aggregate	Aggregate	Gasoline	263.5229	11968.77	1054.092	0.420713	0.924728	0.578334	0.001201	0	0.000506	0.002	0.3192	0.001307	0	0.00055	0.008	0.7448	859.0893	2565.057	48.16666	0.011122	2.441451	0.057864	0.023879	0.088232	0.054355	0.054742	10.61517	0.330464	0.063152	0.426847	0.010977	0.026004	0.07988	15.48964	0.361817	0.063152	0.426847	0.010977	0.026004	1.167899	82.08092	8.465591	0.008501	0.025383	0.000477
Santa Clara	2023	SBUS	Aggregate	Aggregate	Diesel	1013.614	31894.7	11696.96	6.544978	44.13946	0.832887	0.040645	0.046993	0	0.003	0.3192	0.042483	0.049118	0	0.012	0.7448	1136.76	3703.284	0	0.004568	0.012858	0	0.178683	0.582105	0	0.098352	0.27682	0	0	0	0.111967	0.315138	0	0	0	0	0	0.275014	6.038953	0	0.01074	0.034987	0
Santa Clara	2023	UBUS	Aggregate	Aggregate	Gasoline	8.423223	1060.331	33.69289	0.150806	0	0.638272	0.002209	0	0.000888	0.003	0.05586	0.002402	0	0.000966	0.012	0.13034	1956.542	0	88.49758	0.007038	0	0.09018	0.015696	0	0.066738	0.022728	0	0.374288	0.008476	0.037646	0.001991	0.00493	0.033164	0	0.409798	0.008476	0.037646	0.001991	0.00493	0.258128	0	8.852622	0.019362	0	0.000876
Santa Clara	2023	UBUS	Aggregate	Aggregate	Diesel	430.5287	46874.38	1722.115	0.802545	0	0	0.005646	0	0	0.008399	0.029403	0.005901	0	0	0.033598	0.068607	1480.062	0	0	0.077245	0	0	0.232645	0	0	0.001104	0	0	0	0	0.078834	0	0	0	0	0	0	0.131094	0	0	0.013992	0	0
Santa Clara	2023	UBUS	Aggregate	Aggregate	Natural Ga	96.97562	11960.41	387.9025	0.491564	0	0	0.003197	0	0	0.008538	0.028723	0.003341	0	0	0.034153	0.06702	2024.074	0	0	6.451045	0	0	0.412621	0	0	0.092173	0	0	0	0	6.583765	0	0	0	0	0	0	50.12464	0	0	0	0	0

Source: EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX, RESTLOSS and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLE	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PMB	PM2.5_PMT	PM10_RUP	PM10_IDLE	PM10_STR	PM10_PMB	PM10_PMT	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNE	N2O_IDLEX	N2O_STRE	ROG_RUNI	ROG_IDLEX	ROG_STRE	ROG_HOTS	ROG_RUNI	ROG_REST	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_HOTS	TOG_RUNI	TOG_REST	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2024	HHDT	Aggregate	Aggregate	Gasoline	4.841478	594.9439	96.86829	3.020299	0	0.189099	0.00112	0	0.000551	0.005	0.02646	0.001219	0	0.0006	0.02	0.06174	1864.547	0	45.62595	0.076898	0	0.000429	0.12764	0	0.006341	0.362275	0	0.002245	0.090273	0.457367	0.02213	0.039608	0.528631	0	0.002458	0.090273	0.457367	0.02213	0.039608	27.06461	0	5.743732	0.018451	0	0.000452
Santa Clara	2024	HHDT	Aggregate	Aggregate	Diesel	8656.54	1058418	92089.71	2.703911	57.44438	2.359952	0.02415	0.025633	0	0.008883	0.026117	0.025242	0.026792	0	0.035534	0.06094	1388.989	11174.98	0	0.001112	0.214832	0	0.21833	1.756551	0	0.023933	4.625274	0	0	0	0	0	0.027246	5.265522	0	0	0	0	0	0.237639	67.56762	0	0.013122	0.105576	0
Santa Clara	2024	HHDT	Aggregate	Aggregate	Natural Ga	370.7651	15119.11	1445.984	1.4401	20.42228	0	0.004303	0.025442	0	0.009	0.02646	0.004498	0.026593	0	0.036	0.06174	3139.748	3971.23	0	3.408101	1.228196	0	0.640058	0.809561	0	0.135992	0.039404	0	0	0	0	0	3.577682	1.278365	0	0	0	0	0	10.81294	21.6569	0	0	0	0
Santa Clara	2024	LDA	Aggregate	Aggregate	Gasoline	768835.9	26997720	3625782	0.030395	0	0.173438	0.0012	0	0.001624	0.002	0.01575	0.001305	0	0.001766	0.008	0.03675	244.9997	0	52.35424	0.001806	0	0.046341	0.003843	0	0.024653	0.006637	0	0.202005	0.088504	0.205724	0.155728	0.174002	0.54881	0	0.22117	0.088504	0.205724	0.155728	0.174002	0.54881	0	2.188955	0.002424	0	0.000518
Santa Clara	2024	LDA	Aggregate	Aggregate	Diesel	8011.408	291515.9	38101.09	0.048102	0	0	0	0.004683	0	0	0.002	0.01575	0.004895	0	0	0.008	0.03675	190.0661	0	0	0.000484	0	0	0.029876	0	0	0.010417	0	0	0	0	0.011859	0	0	0	0	0	0	0.179098	0	0	0.001797	0	0
Santa Clara	2024	LDA	Aggregate	Aggregate	Electricity	30564.28	1142137	148311.4	0	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0
Santa Clara	2024	LDT1	Aggregate	Aggregate	Gasoline	77491.49	2505905	359687.4	0.068518	0	0.216191	0.0015	0	0.001965	0.002	0.01575	0.001632	0	0.002137	0.008	0.03675	285.2357	0	61.12483	0.003656	0	0.0584	0.005889	0	0.026446	0.015495	0	0.278192	0.147313	0.544925	0.287739	0.351787	0.022607	0	0.304585	0.147313	0.544925	0.287739	0.351787	0.864479	0	2.286362	0.002823	0	0.000605
Santa Clara	2024	LDT1	Aggregate	Aggregate	Diesel	31.54053	577.7803	104.3445	1.003934	0	0	0.132094	0	0	0.002	0.01575	0.138066	0	0	0.008	0.03675	393.8059	0	0	0.007979	0	0	0.061901	0	0	0.171786	0	0	0	0	0	0	0.195567	0	0	0	0	0	0	0.993473	0	0	0.003723	0	0
Santa Clara	2024	LDT1	Aggregate	Aggregate	Electricity	971.3075	39285.07	4827.402	0	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0
Santa Clara	2024	LDT2	Aggregate	Aggregate	Gasoline	257922.1	8298132	1201453	0.060942	0	0.254985	0.001226	0	0.001602	0.002	0.01575	0.001333	0	0.001742	0.008	0.03675	306.3042	0	66.94798	0.002992	0	0.063272	0.005453	0	0.030095	0.011904	0	0.290499	0.118569	0.418242	0.272186	0.28339	0.017369	0	0.31806	0.118569	0.418242	0.272186	0.28339	0.750324	0	2.754987	0.003031	0	0.000663
Santa Clara	2024	LDT2	Aggregate	Aggregate	Diesel	1933.864	68985.44	9385.607	0.034803	0	0	0.004306	0	0	0.002	0.01575	0.004501	0	0	0.008	0.03675	261.017	0	0	0.000618	0	0	0.041028	0	0	0.013297	0	0	0	0	0	0	0.015138	0	0	0	0	0	0	0.124646	0	0	0.002468	0	0
Santa Clara	2024	LDT2	Aggregate	Aggregate	Electricity	3976.567	115838.7	19819.4	0	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0
Santa Clara	2024	LHDT1	Aggregate	Aggregate	Gasoline	16595.29	558796.3	247245.2	0.188441	0.036329	0.492017	0.002119	0	0.000367	0.002	0.03276	0.002304	0	0.0004	0.008	0.07644	981.413	118.8928	18.64229	0.008635	0.116255	0.022385	0.011684	0.00305	0.039132	0.041266	0.416309	0.11274	0.115621	0.802453	0.023685	0.04598	0.060215	0.607477	0.123436	0.115621	0.802453	0.023685	0.04598	0.775411	3.757388	1.688646	0.009712	0.001177	0.000184
Santa Clara	2024	LHDT1	Aggregate	Aggregate	Diesel	12077.34	447738.5	151917.7	1.216004	1.816109	0	0.017946	0.026621	0	0.003	0.03276	0.018757	0.027824	0	0.012	0.07644	527.1415	129.4169	0	0.006889	0.005098	0	0.082859	0.020343	0	0.148312	0.10976	0	0	0	0	0	0.168843	0.124954	0	0	0	0	0	0.625521	0.909745	0	0.004983	0.001223	0
Santa Clara	2024	LHDT2	Aggregate	Aggregate	Gasoline	2318.351	78374.99	34539.98	0.186009	0.035621	0.477152	0.002016	0	0.000324	0.002	0.03822	0.002192	0	0.000352	0.008	0.08918	1117.473	136.319	21.08444	0.006588	0.114918	0.021458	0.012162	0.002973	0.037878	0.028759	0.40841	0.106844	0.107467	0.691039	0.021248	0.040757	0.041965	0.595951	0.11698	0.107467	0.691039	0.021248	0.040757	0.534699	3.762482	1.666987	0.011058	0.001349	0.000209
Santa Clara	2024	LHDT2	Aggregate	Aggregate	Diesel	4877.312	176304.8	61350.45	1.033956	1.829953	0	0.02008	0.027033	0	0.003	0.03822	0.020988	0.028255	0	0.012	0.08918	593.7458	208.0708	0	0.006684	0.005098	0	0.093329	0.032706	0	0.143898	0.10976	0	0	0	0	0	0.163818	0.124954	0	0	0	0	0	0.61131	0.909745	0	0.005613	0.001967	0
Santa Clara	2024	MCY	Aggregate	Aggregate	Gasoline	34431.37	243797	68862.74	1.146289	0	0.270709	0.001865	0	0.002752	0.001	0.00504	0.001997	0	0.00293	0.004	0.01176	210.0772	0	60.71341	0.325313	0	0.253919	0.066025	0	0.015366	2.190481	0	1.930344	0.676373	1.887358	0.97629	1.802995	2.721006	0	2.101179	0.676373	1.887358	0.97629	1.802995	18.59611	0	9.061179	0.002079	0	0.000601
Santa Clara	2024	MDV	Aggregate	Aggregate	Gasoline	156824.5	4915330	725874.3	0.073555	0	0.30496	0.001269	0	0.001735	0.002	0.01575	0.00138	0	0.001887	0.008	0.03675	370.2473	0	81.24522	0.003533	0	0.07385	0.006301	0	0.032254	0.014431	0	0.358405	0.133918	0.442951	0.315236	0.324744	0.021047	0	0.392407	0.133918	0.442951	0.315236	0.324744	0.809607	0	3.072017	0.003664	0	0.000804
Santa Clara	2024	MDV	Aggregate	Aggregate	Diesel	4279.344	148384.4	20665.8	0.030793	0	0	0.003552	0	0	0.002	0.01575	0.003712	0	0	0.008	0.03675	340.7089	0	0	0.00042	0	0	0.053555	0	0	0.009041	0	0	0	0	0	0	0.010293	0	0	0	0	0	0	0.1773	0	0	0.003221	0	0
Santa Clara	2024	MDV	Aggregate	Aggregate	Electricity	2041.893	62655.19	10349.93	0	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0
Santa Clara	2024	MH	Aggregate	Aggregate	Gasoline	2827.424	26048.95	282.8555	0.319474	0	0.337369	0.001496	0	0.000332	0.003	0.05586	0.001627	0	0.000361	0.012	0.13034	1698.665	0	25.10838	0.011423	0	0.03111	0.021443	0	0.036462	0.047898	0	0.127627	0.075126	1.794574	0.031457	0.088456	0.069892	0	0.139736	0.075126	1.794574	0.031457	0.088456	1.158649	0	2.813821	0.01681	0	0.000248
Santa Clara	2024	MH	Aggregate	Aggregate	Diesel	1087.572	10089.67	108.7572	3.8575	0	0	0.073619	0	0	0.004	0.05586	0.076948	0	0	0.016	0.13034	992.182	0	0	0.004739	0	0	0.155957	0	0	0.102018	0	0	0	0	0	0	0.116141	0	0	0	0	0	0	0.353157	0	0	0.00938	0	0
Santa Clara	2024	MHDT	Aggregate	Aggregate	Gasoline	1564.857	81219.94	31309.66	0.31759	0.088787	0.357983	0.00128	0	0.000432	0.003	0.05586	0.001392	0	0.000469	0.012	0.13034	1664.466	518.4053	37.21256	0.009834	0.269491	0.03713	0.017321	0.007911	0.029454	0.046731	1.017203	0.195989	0.074177	0.415581	0.016077	0.031122	0.06819	1.484301	0.214584	0.074177	0.415581	0.016077	0.031122	1.055715	15.16855	4.34781	0.016471	0.00513	0.000368
Santa Clara	2024	MHDT	Aggregate	Aggregate	Diesel	9624.848	566389.2	95988.07	1.610171	5.459844	2.136352	0.007492	0.004673	0	0.003	0.05586	0.00783	0.004884	0	0.012	0.13034	997.0565	869.0377	0	0.000527	0.003515	0	0.156723	0.136601	0	0.01135	0.075674	0	0	0	0	0	0.012921	0.086149	0	0	0	0	0	0.114514	2.701556	0	0.00942	0.00821	0
Santa Clara	2024	OBUS	Aggregate	Aggregate	Gasoline	504.7356	23300.26	10098.75	0.360432	0.065159	0.318556	0.00103	0	0.000226	0.003	0.05586	0.00112	0	0.000245	0.012	0.13034	1712.694	370.3334	25.70448	0.010554	0.201432	0.02907	0.019268	0.00573	0.026194	0.04937	0.747749	0.148852	0.027254	0.303972	0.016446	0.036927	0.07204	1.091114	0.162974	0.027254	0.303972	0.016446	0.036927	1.073358	5.783505	3.116445	0.016948	0.003665	0.000254
Santa Clara	2024	OBUS	Aggregate	Aggregate	Diesel	763.9429	53010.14	7005.878	1.952588	8.368625	2.211523	0.009711	0.002619	0	0.003	0.05586	0.01015	0.002738	0	0.012	0.13034	1156.149	1829.903	0	0.000579	0.025071	0	0.181731	0.287635	0	0.01246	0.539782	0	0	0	0	0	0.014185	0.6145	0	0	0	0	0	0.143603	9.166694	0	0.010923	0.017288	0
Santa Clara	2024	SBUS	Aggregate	Aggregate	Gasoline	277.2219	12408.76	1108.888	0.391846	0.925198	0.582393	0.001195	0	0.000512	0.002	0.3192	0.0013	0	0.000557	0.008	0.7448	849.9257	2540.147	47.46214	0.010004	2.441578	0.057304	0.022787	0.088525	0.054796	0.049026	10.62205	0.32698	0.063489	0.424105	0.011364	0.026144	0.071538	15.49967	0.358002	0.063489	0.424105	0.011364	0.026144	1.061031	82.12266	8.250612	0.008411	0.025137	0.00047
Santa Clara	2024	SBUS	Aggregate	Aggregate	Diesel	1011.343	31782.11	11670.76	6.305713	43.19427	0.882346	0.039225	0.043673	0	0.003	0.3192	0.040998	0.045648	0	0.012	0.7448	1127.045	3685.79	0	0.004462	0.012671	0	0.177156	0.579355	0	0.09606	0.272808	0	0	0	0	0	0.109357	0.310572	0	0	0	0	0	0.272311	6.223874	0	0.010648	0.034822	0
Santa Clara	2024	UBUS	Aggregate	Aggregate	Gasoline	8.427049	1060.813	33.7082	0.179651	0	0.688867	0.002209	0	0.000888	0.003	0.05586	0.002402	0	0.000966	0.012	0.13034	1956.507	0	88.60685	0.007013	0	0.097882	0.017812	0	0.068509	0.022728	0	0.407643	0.01024	0.051815	0.002284	0.005364	0.033164	0	0.446318	0.01024	0.051815	0.002284	0.005364	0.280937	0	8.852622	0.019361	0	0.000877
Santa Clara	2024	UBUS	Aggregate	Aggregate	Diesel	430.6994	46893.42	1722.798	0.802546	0	0	0.005646	0	0	0.008399	0.029403	0.005901	0	0	0	0.033598	0.068607	1480.079	0	0	0.077245	0	0	0.232648	0	0	0.001104	0	0	0	0	0	0.078834	0	0	0	0	0	0	0.131094	0	0	0.013992	0	0
Santa Clara	2024	UBUS	Aggregate	Aggregate	Natural Ga	97.04458	11968.1	388.1783	0.491562	0	0	0.003197	0	0	0.008538	0.028723	0.003341	0	0	0	0.034153	0.06702	2024.066	0	0	6.451003	0	0	0.412619	0	0	0.092172	0	0	0	0	0	6.583722	0	0	0	0	0	0	50.12428	0	0	0	0	0

Source: EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2030
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX, RESTLOSS and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLE	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PMB	PM2.5_PMT	PM10_RUP	PM10_IDLE	PM10_STR	PM10_PMB	PM10_PMT	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNE	N2O_IDLEX	N2O_STRE	ROG_RUNI	ROG_IDLEX	ROG_STRE	ROG_HOTS	ROG_RUNI	ROG_REST	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_HOTS	TOG_RUNI	TOG_REST	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2030	HHDT	Aggregate	Aggregate	Gasoline	6.644908	846.0095	132.9513	2.895279	0	0.044486	0.001084	0	0.000414	0.005	0.02646	0.001179	0	0.00045	0.02	0.06174	1677.599	0	40.07141	0.06849	0	0.000337	0.127319	0	0.001575	0.302922	0	0.001761	0.044849	0.220711	0.012382	0.020645	0.442024	0	0.001928	0.044849	0.220711	0.012382	0.020645	28.21474	0	5.186707	0.016601	0	0.000397
Santa Clara	2030	HHDT	Aggregate	Aggregate	Diesel	9431.66	1177485	101453.9	2.539781	56.05241	2.353151	0.023044	0.021785	0	0.008907	0.026186	0.024086	0.02277	0	0.035627	0.061101	1202.821	10016.29	0	0.001063	0.214358	0	0.189067	1.574421	0	0.022896	4.615071	0	0	0	0.026066	5.253907	0	0	0	0	0	0	0.238872	67.80499	0	0.011364	0.094629	0
Santa Clara	2030	HHDT	Aggregate	Aggregate	Natural Ga	400.4237	16329.01	1561.653	0.881174	19.09434	0	0.003462	0.015749	0	0.009	0.02646	0.003619	0.016461	0	0.036	0.06174	2899.524	3653.632	0	3.225286	1.19295	0	0.591087	0.744817	0	0.090199	0.028054	0	0	0	3.341906	1.230036	0	0	0	0	0	0	11.01311	21.88788	0	0	0	0
Santa Clara	2030	LDA	Aggregate	Aggregate	Gasoline	869969.1	28403709	4092414	0.020358	0	0.132956	0.000879	0	0.001249	0.002	0.01575	0.000956	0	0.001359	0.008	0.03675	211.6944	0	44.94162	0.001023	0	0.030835	0.003085	0	0.020493	0.003388	0	0.12606	0.065117	0.180811	0.11416	0.123291	0.43107	0	1.801842	0.002095	0	0.000445
Santa Clara	2030	LDA	Aggregate	Aggregate	Diesel	10023.63	337674.2	47693.27	0.01676	0	0	0.001829	0	0	0.002	0.01575	0.001912	0	0	0.008	0.03675	166.1368	0	0	0.000273	0	0	0.026114	0	0	0.005885	0	0	0	0	0.006699	0	0	0	0	0	0	0.146966	0	0.001571	0	0	0
Santa Clara	2030	LDA	Aggregate	Aggregate	Electricity	46172.96	1625146	221619.4	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2030	LDT1	Aggregate	Aggregate	Gasoline	88972.38	2670256	412660.2	0.034308	0	0.154254	0.000998	0	0.001379	0.002	0.01575	0.001085	0	0.001499	0.008	0.03675	248.8135	0	52.89319	0.001722	0	0.036164	0.003879	0	0.021779	0.00667	0	0.15755	0.095382	0.371981	0.194977	0.219194	0.548445	0	1.868724	0.002462	0	0.000523
Santa Clara	2030	LDT1	Aggregate	Aggregate	Diesel	12.41764	352.1646	54.72798	0.189506	0	0	0.017188	0	0	0.002	0.01575	0.017965	0	0	0.008	0.03675	322.0531	0	0	0.001569	0	0	0.050622	0	0	0.033785	0	0	0	0	0.038462	0	0	0	0	0	0	0.286183	0	0.003045	0	0	0
Santa Clara	2030	LDT1	Aggregate	Aggregate	Electricity	2180.044	81488.93	10672.84	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2030	LDT2	Aggregate	Aggregate	Gasoline	281546.9	8446247	1307139	0.035247	0	0.174198	0.000925	0	0.001282	0.002	0.01575	0.001006	0	0.001394	0.008	0.03675	256.344	0	55.96845	0.00178	0	0.043514	0.003847	0	0.023481	0.006634	0	0.189401	0.09208	0.348635	0.233116	0.234964	0.908968	0	2.344012	0.002537	0	0.000554
Santa Clara	2030	LDT2	Aggregate	Aggregate	Diesel	2576.298	81354.46	12261.45	0.02908	0	0	0.003937	0	0	0.002	0.01575	0.004115	0	0	0.008	0.03675	226.4921	0	0	0.000595	0	0	0.035601	0	0	0.01282	0	0	0	0	0.014595	0	0	0	0	0	0	0.129762	0	0.002141	0	0	0
Santa Clara	2030	LDT2	Aggregate	Aggregate	Electricity	8320.478	213767.2	40645.17	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2030	LHDT1	Aggregate	Aggregate	Gasoline	17444.25	563109.1	259893.3	0.098098	0.030587	0.387515	0.002081	0	0.000333	0.002	0.03276	0.002264	0	0.000362	0.008	0.07644	897.5407	110.5325	17.36665	0.004317	0.101968	0.015524	0.006844	0.002802	0.033538	0.018245	0.350811	0.075233	0.094381	0.739315	0.019801	0.035959	0.026623	0.511903	0.082371	0.094381	0.739315	0.019801	0.035959	0.368714	3.768698	1.531971	0.008882	0.001094	0.000172
Santa Clara	2030	LHDT1	Aggregate	Aggregate	Diesel	14887.61	510107.2	187267.4	0.522674	1.343027	0	0.011738	0.026289	0	0.003	0.03276	0.012269	0.027477	0	0.012	0.07644	478.8761	118.3357	0	0.006165	0.005098	0	0.075273	0.018601	0	0.13273	0.10976	0	0	0	0.155104	0.124954	0	0	0	0	0	0	0.579164	0.909745	0	0.004527	0.001119	0
Santa Clara	2030	LHDT2	Aggregate	Aggregate	Gasoline	2535.293	81915.35	37772.09	0.091162	0.030032	0.379653	0.001975	0	0.000297	0.002	0.03822	0.002148	0	0.000323	0.008	0.08918	1021.816	126.3902	19.57212	0.00327	0.10112	0.014626	0.00699	0.00275	0.032936	0.012455	0.344716	0.06918	0.074032	0.436992	0.016932	0.02908	0.018175	0.503009	0.075743	0.074032	0.436992	0.016932	0.02908	0.249204	3.775612	1.472175	0.010112	0.001251	0.000194
Santa Clara	2030	LHDT2	Aggregate	Aggregate	Diesel	6126.051	201454.9	77058.01	0.503536	1.378592	0	0.017789	0.026933	0	0.003	0.03822	0.018593	0.028151	0	0.012	0.08918	540.7481	191.3797	0	0.006181	0.005098	0	0.084998	0.030082	0	0.133066	0.10976	0	0	0	0.151486	0.124954	0	0	0	0	0	0	0.586662	0.909745	0	0.005112	0.001809	0
Santa Clara	2030	MCY	Aggregate	Aggregate	Gasoline	38839.87	253703.2	77679.74	1.137409	0	0.270173	0.001994	0	0.002676	0.001	0.00504	0.002138	0	0.002862	0.004	0.01176	209.7572	0	59.22586	0.319087	0	0.24786	0.065566	0	0.015364	2.128511	0	1.877593	0.631299	1.487321	0.946881	1.786807	2.666273	0	2.04481	0.631299	1.487321	0.946881	1.786807	17.60732	0	9.199577	0.002076	0	0.000586
Santa Clara	2030	MDV	Aggregate	Aggregate	Gasoline	173606	5113918	803848	0.03715	0	0.190209	0.00093	0	0.001318	0.002	0.01575	0.001012	0	0.001433	0.008	0.03675	309.7804	0	67.68816	0.001872	0	0.04685	0.004005	0	0.024192	0.007071	0	0.21174	0.103941	0.361114	0.278651	0.281249	0.010317	0	0.231829	0.103941	0.361114	0.278651	0.281249	0.571385	0	2.441594	0.003066	0	0.00067
Santa Clara	2030	MDV	Aggregate	Aggregate	Diesel	5652.323	175214.3	26820.46	0.016338	0	0	0.001999	0	0	0.002	0.01575	0.00209	0	0	0.008	0.03675	295.1303	0	0	0.000296	0	0	0.04639	0	0	0.006382	0	0	0	0	0.007265	0	0	0	0	0	0	0.160558	0	0.00279	0	0	0
Santa Clara	2030	MDV	Aggregate	Aggregate	Electricity	5412.776	143464.5	26723.4	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0	0	0	0	0	0	0
Santa Clara	2030	MH	Aggregate	Aggregate	Gasoline	2781.183	26082.35	278.2296	0.161957	0	0.344848	0.001294	0	0.000284	0.003	0.05586	0.001408	0	0.000309	0.012	0.13034	1534.746	0	22.64387	0.005412	0	0.028477	0.014768	0	0.039513	0.01789	0	0.108156	0.041368	0.780207	0.020421	0.050661	0.026105	0	0.118417	0.041368	0.780207	0.020421	0.050661	0.321425	0	2.382509	0.015188	0	0.000224
Santa Clara	2030	MH	Aggregate	Aggregate	Diesel	1271.562	11026.54	127.1562	3.194675	0	0	0.048471	0	0	0.004	0.05586	0.050662	0	0	0.016	0.13034	913.8987	0	0	0.004117	0	0	0.143652	0	0	0.088635	0	0	0	0	0.100905	0	0	0	0	0	0	0.288665	0	0.00864	0	0	0
Santa Clara	2030	MHDT	Aggregate	Aggregate	Gasoline	1942.274	96462.8	38861.02	0.137179	0.089333	0.328382	0.001276	0	0.000397	0.003	0.05586	0.001388	0	0.000432	0.012	0.13034	1512.526	477.0555	33.02741	0.004329	0.277482	0.032379	0.010371	0.008413	0.029895	0.018098	1.025296	0.159937	0.053505	0.276198	0.013009	0.02236	0.026409	1.49611	0.175111	0.053505	0.276198	0.013009	0.02236	0.365535	15.26266	3.370143	0.014968	0.004721	0.000327
Santa Clara	2030	MHDT	Aggregate	Aggregate	Diesel	11245.42	599136.6	111242.1	1.636194	4.546441	2.164606	0.007568	0.002068	0	0.003	0.05586	0.00791	0.002162	0	0.012	0.13034	909.8747	786.5238	0	0.000503	0.003226	0	0.14302	0.123631	0	0.010837	0.069445	0	0	0	0.012337	0.079058	0	0	0	0	0	0	0.11784	2.775159	0	0.008596	0.007431	0
Santa Clara	2030	OBUS	Aggregate	Aggregate	Gasoline	521.2442	22324.56	10429.05	0.201397	0.065222	0.308429	0.001191	0	0.000252	0.003	0.05586	0.001295	0	0.000274	0.012	0.13034	1542.791	344.1269	23.61734	0.005871	0.202191	0.026706	0.012891	0.005853	0.026143	0.025703	0.748687	0.134449	0.027407	0.319238	0.017082	0.037276	0.037506	1.092483	0.147204	0.027407	0.319238	0.017082	0.037276	0.529537	5.789149	2.766701	0.015267	0.003405	0.000234
Santa Clara	2030	OBUS	Aggregate	Aggregate	Diesel	845.8557	51263.29	7867.551	1.991442	9.302951	2.216948	0.010285	0.002947	0	0.003	0.05586	0.01075	0.003081	0	0.012	0.13034	1066.293	1893.973	0	0.000596	0.028932	0	0.167606	0.297706	0	0.012842	0.6229	0	0	0	0.01462	0.709124	0	0	0	0	0	0	0.14672	10.36618	0	0.010074	0.017893	0
Santa Clara	2030	SBUS	Aggregate	Aggregate	Gasoline	362.3014	15198.78	1449.205	0.285961	0.92653	0.616868	0.001215	0	0.000547	0.002	0.3192	0.001322	0	0.000595	0.008	0.7448	803.9675	2414.339	44.56576	0.00626	2.435971	0.055823	0.018735	0.089714	0.057177	0.030067	10.64152	0.317303	0.073145	0.474779	0.014584	0.030637	0.043873	15.52808	0.347407	0.073145	0.474779	0.014584	0.030637	0.649967	82.24088	7.563743	0.007956	0.023892	0.000441
Santa Clara	2030	SBUS	Aggregate	Aggregate	Diesel	980.5629	30722.11	11315.56	4.472027	34.94152	1.257143	0.029756	0.025511	0	0.003	0.3192	0.031102	0.026664	0	0.012	0.7448	1052.894	3501.127	0	0.003486	0.012263	0	0.1655	0.550328	0	0.075046	0.264022	0	0	0	0.085434	0.300569	0	0	0	0	0	0	0.238791	7.720739	0	0.009947	0.033077	0
Santa Clara	2030	UBUS	Aggregate	Aggregate	Gasoline	8.45001	1063.703	33.80004	0.336097	0	0.964336	0.002209	0	0.000888	0.003	0.05586	0.002402	0	0.000966	0.012	0.13034	1956.157	0	89.19596	0.006892	0	0.139066	0.027885	0	0.079916	0.022728	0	0.589249	0.05182	0.313542	0.009109	0.015639	0.033164	0	0.645153	0.05182	0.313542	0.009109	0.015639	0.405122	0	8.852622	0.019358	0	0.000883
Santa Clara	2030	UBUS	Aggregate	Aggregate	Diesel	376.8943	42036.62	1507.577	0.804174	0	0	0.005656	0	0	0.008428	0.029265	0.005912	0	0	0.03371	0.068284	1523.264	0	0	0.077448	0	0	0.239436	0	0	0.001107	0	0	0	0	0.079041	0	0	0	0	0	0	0.131472	0	0	0.0144	0	0
Santa Clara	2030	UBUS	Aggregate	Aggregate	Natural Ga	152.2876	16985.28	609.1502	0.487691	0	0	0.003174	0	0	0.008428	0.029265	0.003317	0	0	0.03371	0.068284	2010.534	0	0	6.385838	0	0	0.40986	0	0	0.091241	0	0	0	0	6.517216	0	0	0	0	0	0	49.56612	0	0	0	0	0

Attachment 4: Health Risk Calculations for Construction and Operation

Construction Calculations

50 Almaden Blvd Offices, San Jose, CA

DPM Construction Emissions and Modeling Emission Rates

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Emissions per Point Source (g/s)
2021	Construction	0.0975	Point	176	195.1	0.05939	7.48E-03	4.25E-05
2022	Construction	0.1017	Point	176	203.3	0.06189	7.80E-03	4.43E-05
2023	Construction	0.0609	Point	176	121.7	0.03705	4.67E-03	2.65E-05
Total		***0.2601***			***520.1***	***0.1583***	***0.0200***	

Emissions assumed to be evenly distributed over each construction areas

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

50 Almaden Blvd Offices, San Jose, CA

PM2.5 Fugitive Dust Construction Emissions for Modeling

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2021	Construction	CON_FUG	0.0995	199.0	0.06059	7.63E-03	4129.423	1.85E-06
2022	Construction	CON_FUG	0.0046	9.1	0.00277	3.49E-04	4129.423	8.45E-08
2023	Construction	CON_FUG	0.0020	3.9	0.00120	1.51E-04	4129.423	3.66E-08
Total			***0.1060***	***212.1***	***0.0646***	***0.0081***		

Emissions assumed to be evenly distributed over each construction areas

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

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Emissions per Point Source (g/s)
2021	Construction	0.0107	Point	176	21.5	0.00654	8.24E-04	4.68E-06
2022	Construction	0.0166	Point	176	33.2	0.01010	1.27E-03	7.23E-06
2023	Construction	0.0247	Point	176	49.3	0.01501	1.89E-03	1.07E-05
Total		***0.0520***			***104.0***	***0.0317***	***0.0040***	

Emissions assumed to be evenly distributed over each construction areas

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

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

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2021	Construction	CON_FUG	0.0259	51.8	0.01578	1.99E-03	4129.423	4.81E-07
2022	Construction	CON_FUG	0.0046	9.1	0.00277	3.49E-04	4129.423	8.45E-08
2023	Construction	CON_FUG	0.0020	3.9	0.00120	1.51E-04	4129.423	3.66E-08
Total			***0.0324***	***64.9***	***0.0197***	***0.0025***		

Emissions assumed to be evenly distributed over each construction areas

hr/day = 9 (7am - 4pm)

days/yr = 365

hours/year = 3285

50 Almaden Blvd Offices, San Jose, CA - Construction Health Impact Summary

Maximum Impacts at MEI Location - Without Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Infant/Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2021	0.1407	0.3639	25.02	0.40	0.03	0.51
2022	0.1466	0.0166	24.08	0.42	0.03	0.18
2023	0.0878	0.0072	2.27	0.25	0.02	0.10
Total	-	-	**51.4**	**1.1**	-	-
Maximum	0.1466	0.3639	**-**	**-**	**0.03**	**0.51**

Maximum Impacts at MEI Location - With Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Infant/Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2021	0.0155	0.0946	2.75	0.04	0.003	0.11
2022	0.0239	0.0166	3.93	0.07	0.005	0.04
2023	0.0356	0.0072	0.92	0.10	0.01	0.05
Total	-	-	**7.6**	**0.2**	-	-
Maximum	0.0356	0.0946	**-**	**-**	**0.01**	**0.11**

- Tier 4 Interim Mitigation, Electric Cranes, Compressors, Generators, Welders

50 Almaden Blvd Offices, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1st Res Level receptor height = 9.1 meter cancer risk, 1.5 meter PM2.5 concentration

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	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2021	0.1407	10	1.91	2021	0.1407	-	-		
1	1	0 - 1	2021	0.1407	10	23.11	2021	0.1407	1	0.40	0.3639	0.5130
2	1	1 - 2	2022	0.1466	10	24.08	2022	0.1466	1	0.42	0.0166	0.1765
3	1	2 - 3	2023	0.0878	3	2.27	2023	0.0878	1	0.25	0.0072	0.1031
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk						**51.4**				**1.08**		

* Third trimester of pregnancy

50 Almaden Blvd Offices, San Jose, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 2nd Res Level receptor height = 12.2 meter cancer risk, 4.5 meter PM2.5 concentration

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum	
				DPM Conc (ug/m3)	Age	Infant/Child		Modeled DPM Conc (ug/m3)	Age	Adult		
Exposure Year	Exposure Duration (years)	Age	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2021	0.1223	10	1.66	2021	0.1223	-	-		
1	1	0 - 1	2021	0.1223	10	20.09	2021	0.1223	1	0.35	0.3018	0.4526
2	1	1 - 2	2022	0.1275	10	20.93	2022	0.1275	1	0.37	0.0138	0.1722
3	1	2 - 3	2023	0.0763	3	1.97	2023	0.0763	1	0.22	0.0060	0.1009
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk						**44.7**				**0.94**		

* Third trimester of pregnancy

50 Almaden Blvd Offices, San Jose, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1st Res Level receptor height = 9.1 meter cancer risk, 1.5 meter PM2.5 concentration

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

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

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

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

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum	
				DPM Conc (ug/m3)	Age	Infant/Child		Modeled DPM Conc (ug/m3)	Age	Adult		
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	2021	0.0155	10	0.21	2021	0.0155	-	-		
1	1	0 - 1	2021	0.0155	10	2.54	2021	0.0155	1	0.04	0.0946	0.1110
2	1	1 - 2	2022	0.0239	10	3.93	2022	0.0239	1	0.07	0.0166	0.0420
3	1	2 - 3	2023	0.0356	3	0.92	2023	0.0356	1	0.10	0.0072	0.0458
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk						**7.6**				**0.22**		

* Third trimester of pregnancy

Operational Calculations

Project Roadways Emissions and Health Risk Calculations

File Name:	50 Almaden Offices - Santa Clara (SF) - 2024 - Annual.EF
CT-EMFAC2017 Version:	1.0.2.27401
Run Date:	6/30/2020 15:02
Area:	Santa Clara (SF)
Analysis Year:	2024
Season:	Annual

Vehicle Category	VMT Fraction	Diesel VMT Fraction	Gas VMT Fraction
	Across Category	Within Category	Within Category
Truck 1	0.026	0.495	0.505
Truck 2	0.036	0.937	0.048
Non-Truck	0.938	0.014	0.955

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	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph
PM2.5	0.005937	0.004059	0.002926	0.002242	0.001833	0.001603	0.001499
TOG	0.123609	0.082483	0.057954	0.043756	0.034879	0.029177	0.025607
Diesel PM	0.001022	0.000793	0.000637	0.00055	0.000516	0.000522	0.000565

Fleet Average Fuel Consumption (gallons/veh-mile)

Fuel Type	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph
Gasoline	0.059126	0.04838	0.040247	0.034406	0.030539	0.028284	0.027365
Diesel	0.010562	0.008188	0.00703	0.006152	0.005433	0.004931	0.004563

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

Pollutant Name	Emission Factor
TOG	1.314612

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

Pollutant Name	Emission Factor
PM2.5	0.002189

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

Pollutant Name	Emission Factor
PM2.5	0.017344

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

Pollutant Name	Emission Factor
PM2.5	0.016811

END

50 Almaden Offices - Offsite Residential
Project Operation - Alamden Blvd
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2024

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_ALBL	Almaden Boulevard Northbound	NB	2	666.5	0.41	13.3	43.7	3.4	20	1,400
DPM_SB_ALBL	Almaden Boulevard Southbound	SB	2	660.4	0.41	13.3	43.7	3.4	20	1,400
									Total	2,800

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.00064			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and DPM Emissions - DPM_NB_ALBL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.90%	55	4.00E-06	9	6.42%	90	6.59E-06	17	5.62%	79	5.77E-06
2	2.58%	36	2.65E-06	10	7.34%	103	7.53E-06	18	3.27%	46	3.35E-06
3	2.87%	40	2.94E-06	11	6.42%	90	6.59E-06	19	2.35%	33	2.41E-06
4	3.32%	46	3.41E-06	12	6.88%	96	7.06E-06	20	0.86%	12	8.82E-07
5	2.18%	31	2.24E-06	13	6.25%	88	6.41E-06	21	3.09%	43	3.17E-06
6	3.38%	47	3.47E-06	14	6.19%	87	6.35E-06	22	4.13%	58	4.24E-06
7	6.02%	84	6.18E-06	15	5.10%	71	5.23E-06	23	2.52%	35	2.59E-06
8	4.64%	65	4.76E-06	16	3.78%	53	3.88E-06	24	0.92%	13	9.44E-07
								Total		1,400	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_ALBL

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.90%	55	3.96E-06	9	6.42%	90	6.53E-06	17	5.62%	79	5.71E-06
2	2.58%	36	2.62E-06	10	7.34%	103	7.46E-06	18	3.27%	46	3.32E-06
3	2.87%	40	2.92E-06	11	6.42%	90	6.53E-06	19	2.35%	33	2.39E-06
4	3.32%	46	3.37E-06	12	6.88%	96	6.99E-06	20	0.86%	12	8.74E-07
5	2.18%	31	2.22E-06	13	6.25%	88	6.35E-06	21	3.09%	43	3.14E-06
6	3.38%	47	3.44E-06	14	6.19%	87	6.29E-06	22	4.13%	58	4.20E-06
7	6.02%	84	6.12E-06	15	5.10%	71	5.18E-06	23	2.52%	35	2.56E-06
8	4.64%	65	4.72E-06	16	3.78%	53	3.84E-06	24	0.92%	13	9.35E-07
								Total		1,400	

50 Almaden Offices - Offsite Residential
Project Operation - Alamden Blvd
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2024

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_ALBL	Almaden Boulevard Northbound	NB	2	666.5	0.41	13.3	44	1.3	20	1,400
PM2.5_SB_ALBL	Almaden Boulevard Southbound	SB	2	660.4	0.41	13.3	44	1.3	20	1,400
									Total	2,800

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.002926			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_ALBL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	16	5.42E-06	9	7.11%	100	3.35E-05	17	7.39%	103	3.48E-05
2	0.42%	6	1.98E-06	10	4.39%	61	2.07E-05	18	8.18%	115	3.85E-05
3	0.41%	6	1.93E-06	11	4.66%	65	2.20E-05	19	5.70%	80	2.69E-05
4	0.26%	4	1.23E-06	12	5.89%	82	2.78E-05	20	4.27%	60	2.01E-05
5	0.50%	7	2.36E-06	13	6.15%	86	2.90E-05	21	3.26%	46	1.54E-05
6	0.90%	13	4.24E-06	14	6.04%	85	2.85E-05	22	3.30%	46	1.56E-05
7	3.79%	53	1.79E-05	15	7.01%	98	3.30E-05	23	2.46%	34	1.16E-05
8	7.76%	109	3.66E-05	16	7.14%	100	3.36E-05	24	1.87%	26	8.81E-06
								Total		1,400	

2024 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_SB_ALBL

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	16	5.37E-06	9	7.11%	100	3.32E-05	17	7.39%	103	3.45E-05
2	0.42%	6	1.96E-06	10	4.39%	61	2.05E-05	18	8.18%	115	3.82E-05
3	0.41%	6	1.91E-06	11	4.66%	65	2.18E-05	19	5.70%	80	2.66E-05
4	0.26%	4	1.21E-06	12	5.89%	82	2.75E-05	20	4.27%	60	1.99E-05
5	0.50%	7	2.33E-06	13	6.15%	86	2.87E-05	21	3.26%	46	1.52E-05
6	0.90%	13	4.20E-06	14	6.04%	85	2.82E-05	22	3.30%	46	1.54E-05
7	3.79%	53	1.77E-05	15	7.01%	98	3.27E-05	23	2.46%	34	1.15E-05
8	7.76%	109	3.62E-05	16	7.14%	100	3.33E-05	24	1.87%	26	8.73E-06
								Total		1,400	

50 Almaden Offices - Offsite Residential
Project Operation - Alamden Blvd
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2024

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_ALBL	Almaden Boulevard Northbound	NB	2	666.5	0.41	13.3	44	1.3	20	1,400
TEXH_SB_ALBL	Almaden Boulevard Southbound	SB	2	660.4	0.41	13.3	44	1.3	20	1,400
									Total	2,800

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.05795			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_ALBL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	16	1.07E-04	9	7.11%	100	6.64E-04	17	7.39%	103	6.90E-04
2	0.42%	6	3.92E-05	10	4.39%	61	4.10E-04	18	8.18%	115	7.64E-04
3	0.41%	6	3.83E-05	11	4.66%	65	4.35E-04	19	5.70%	80	5.32E-04
4	0.26%	4	2.43E-05	12	5.89%	82	5.50E-04	20	4.27%	60	3.99E-04
5	0.50%	7	4.67E-05	13	6.15%	86	5.74E-04	21	3.26%	46	3.04E-04
6	0.90%	13	8.40E-05	14	6.04%	85	5.64E-04	22	3.30%	46	3.08E-04
7	3.79%	53	3.54E-04	15	7.01%	98	6.54E-04	23	2.46%	34	2.30E-04
8	7.76%	109	7.24E-04	16	7.14%	100	6.66E-04	24	1.87%	26	1.75E-04
								Total		1,400	

2024 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_ALBL

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	16	1.06E-04	9	7.11%	100	6.58E-04	17	7.39%	103	6.83E-04
2	0.42%	6	3.88E-05	10	4.39%	61	4.06E-04	18	8.18%	115	7.57E-04
3	0.41%	6	3.79E-05	11	4.66%	65	4.31E-04	19	5.70%	80	5.27E-04
4	0.26%	4	2.40E-05	12	5.89%	82	5.45E-04	20	4.27%	60	3.95E-04
5	0.50%	7	4.62E-05	13	6.15%	86	5.69E-04	21	3.26%	46	3.01E-04
6	0.90%	13	8.32E-05	14	6.04%	85	5.59E-04	22	3.30%	46	3.05E-04
7	3.79%	53	3.51E-04	15	7.01%	98	6.48E-04	23	2.46%	34	2.28E-04
8	7.76%	109	7.18E-04	16	7.14%	100	6.60E-04	24	1.87%	26	1.73E-04
								Total		1,400	

50 Almaden Offices - Offsite Residential
Project Operation - Alamden Blvd
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2024

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_ALBL	Almaden Boulevard Northbound	NB	2	666.5	0.41	13.3	44	1.3	20	1,400
TEVAP_SB_ALBL	Almaden Boulevard Southbound	SB	2	660.4	0.41	13.3	44	1.3	20	1,400
									Total	2,800

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle per Hour (g/hour)	1.31461			
Emissions per Vehicle per Mile (g/VMT)	0.06573			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_ALBL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	16	1.22E-04	9	7.11%	100	7.53E-04	17	7.39%	103	7.82E-04
2	0.42%	6	4.45E-05	10	4.39%	61	4.65E-04	18	8.18%	115	8.66E-04
3	0.41%	6	4.34E-05	11	4.66%	65	4.93E-04	19	5.70%	80	6.03E-04
4	0.26%	4	2.75E-05	12	5.89%	82	6.24E-04	20	4.27%	60	4.52E-04
5	0.50%	7	5.29E-05	13	6.15%	86	6.51E-04	21	3.26%	46	3.45E-04
6	0.90%	13	9.53E-05	14	6.04%	85	6.39E-04	22	3.30%	46	3.49E-04
7	3.79%	53	4.01E-04	15	7.01%	98	7.42E-04	23	2.46%	34	2.60E-04
8	7.76%	109	8.21E-04	16	7.14%	100	7.56E-04	24	1.87%	26	1.98E-04
								Total		1,400	

2024 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_ALBL

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	16	1.21E-04	9	7.11%	100	7.46E-04	17	7.39%	103	7.75E-04
2	0.42%	6	4.41E-05	10	4.39%	61	4.60E-04	18	8.18%	115	8.58E-04
3	0.41%	6	4.30E-05	11	4.66%	65	4.89E-04	19	5.70%	80	5.98E-04
4	0.26%	4	2.73E-05	12	5.89%	82	6.18E-04	20	4.27%	60	4.48E-04
5	0.50%	7	5.24E-05	13	6.15%	86	6.45E-04	21	3.26%	46	3.42E-04
6	0.90%	13	9.44E-05	14	6.04%	85	6.34E-04	22	3.30%	46	3.46E-04
7	3.79%	53	3.98E-04	15	7.01%	98	7.35E-04	23	2.46%	34	2.58E-04
8	7.76%	109	8.14E-04	16	7.14%	100	7.49E-04	24	1.87%	26	1.96E-04
								Total		1,400	

50 Almaden Offices - Offsite Residential
Project Operation - Alamden Blvd
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2024

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_ALBL	Almaden Boulevard Northbound	NB	2	666.5	0.41	13.3	44	1.3	20	1,400
FUG_SB_ALBL	Almaden Boulevard Southbound	SB	2	660.4	0.41	13.3	44	1.3	20	1,400
									Total	2,800

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00219			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01734			
Road Dust - Emissions per Vehicle (g/VMT)	0.01681			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03634			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_ALBL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	16	6.73E-05	9	7.11%	100	4.16E-04	17	7.39%	103	4.33E-04
2	0.42%	6	2.46E-05	10	4.39%	61	2.57E-04	18	8.18%	115	4.79E-04
3	0.41%	6	2.40E-05	11	4.66%	65	2.73E-04	19	5.70%	80	3.34E-04
4	0.26%	4	1.52E-05	12	5.89%	82	3.45E-04	20	4.27%	60	2.50E-04
5	0.50%	7	2.93E-05	13	6.15%	86	3.60E-04	21	3.26%	46	1.91E-04
6	0.90%	13	5.27E-05	14	6.04%	85	3.54E-04	22	3.30%	46	1.93E-04
7	3.79%	53	2.22E-04	15	7.01%	98	4.10E-04	23	2.46%	34	1.44E-04
8	7.76%	109	4.54E-04	16	7.14%	100	4.18E-04	24	1.87%	26	1.09E-04
								Total		1,400	

2024 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_ALBL

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	16	6.67E-05	9	7.11%	100	4.12E-04	17	7.39%	103	4.29E-04
2	0.42%	6	2.44E-05	10	4.39%	61	2.55E-04	18	8.18%	115	4.74E-04
3	0.41%	6	2.38E-05	11	4.66%	65	2.70E-04	19	5.70%	80	3.31E-04
4	0.26%	4	1.51E-05	12	5.89%	82	3.42E-04	20	4.27%	60	2.48E-04
5	0.50%	7	2.90E-05	13	6.15%	86	3.57E-04	21	3.26%	46	1.89E-04
6	0.90%	13	5.22E-05	14	6.04%	85	3.50E-04	22	3.30%	46	1.91E-04
7	3.79%	53	2.20E-04	15	7.01%	98	4.07E-04	23	2.46%	34	1.43E-04
8	7.76%	109	4.50E-04	16	7.14%	100	4.14E-04	24	1.87%	26	1.08E-04
								Total		1,400	

50 Almaden Offices - Offsite Residential
Project Operation - Alamden Ave
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2024

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_ALAV	Almaden Avenue Northbound	NB	1	412.8	0.26	9.7	31.7	3.4	20	1,055
DPM_SB_ALAV	Almaden Avenue Southbound	SB	1	413.5	0.26	9.7	31.7	3.4	20	1,055
									Total	2,110

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.00064			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and DPM Emissions - DPM_NB_ALAV

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.90%	41	1.87E-06	9	6.42%	68	3.07E-06	17	5.62%	59	2.69E-06
2	2.58%	27	1.24E-06	10	7.34%	77	3.51E-06	18	3.27%	34	1.57E-06
3	2.87%	30	1.37E-06	11	6.42%	68	3.07E-06	19	2.35%	25	1.13E-06
4	3.32%	35	1.59E-06	12	6.88%	73	3.29E-06	20	0.86%	9	4.12E-07
5	2.18%	23	1.04E-06	13	6.25%	66	2.99E-06	21	3.09%	33	1.48E-06
6	3.38%	36	1.62E-06	14	6.19%	65	2.96E-06	22	4.13%	44	1.98E-06
7	6.02%	64	2.88E-06	15	5.10%	54	2.44E-06	23	2.52%	27	1.21E-06
8	4.64%	49	2.22E-06	16	3.78%	40	1.81E-06	24	0.92%	10	4.41E-07
								Total		1,055	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_ALAV

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.90%	41	1.87E-06	9	6.42%	68	3.08E-06	17	5.62%	59	2.70E-06
2	2.58%	27	1.24E-06	10	7.34%	77	3.52E-06	18	3.27%	34	1.57E-06
3	2.87%	30	1.38E-06	11	6.42%	68	3.08E-06	19	2.35%	25	1.13E-06
4	3.32%	35	1.59E-06	12	6.88%	73	3.30E-06	20	0.86%	9	4.12E-07
5	2.18%	23	1.05E-06	13	6.25%	66	3.00E-06	21	3.09%	33	1.48E-06
6	3.38%	36	1.62E-06	14	6.19%	65	2.97E-06	22	4.13%	44	1.98E-06
7	6.02%	64	2.89E-06	15	5.10%	54	2.45E-06	23	2.52%	27	1.21E-06
8	4.64%	49	2.23E-06	16	3.78%	40	1.81E-06	24	0.92%	10	4.41E-07
								Total		1,055	

50 Almaden Offices - Offsite Residential
Project Operation - Alamden Ave
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2024

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_ALAV	Almaden Avenue Northbound	NB	1	412.8	0.26	9.7	32	1.3	20	1,055
PM2.5_SB_ALAV	Almaden Avenue Southbound	SB	1	413.5	0.26	9.7	32	1.3	20	1,055
									Total	2,110

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.002926			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_ALAV

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	12	2.53E-06	9	7.11%	75	1.56E-05	17	7.39%	78	1.63E-05
2	0.42%	4	9.24E-07	10	4.39%	46	9.66E-06	18	8.18%	86	1.80E-05
3	0.41%	4	9.02E-07	11	4.66%	49	1.02E-05	19	5.70%	60	1.25E-05
4	0.26%	3	5.72E-07	12	5.89%	62	1.30E-05	20	4.27%	45	9.39E-06
5	0.50%	5	1.10E-06	13	6.15%	65	1.35E-05	21	3.26%	34	7.17E-06
6	0.90%	9	1.98E-06	14	6.04%	64	1.33E-05	22	3.30%	35	7.26E-06
7	3.79%	40	8.34E-06	15	7.01%	74	1.54E-05	23	2.46%	26	5.41E-06
8	7.76%	82	1.71E-05	16	7.14%	75	1.57E-05	24	1.87%	20	4.11E-06
								Total		1,055	

2024 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_SB_ALAV

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	12	2.53E-06	9	7.11%	75	1.57E-05	17	7.39%	78	1.63E-05
2	0.42%	4	9.25E-07	10	4.39%	46	9.67E-06	18	8.18%	86	1.80E-05
3	0.41%	4	9.03E-07	11	4.66%	49	1.03E-05	19	5.70%	60	1.26E-05
4	0.26%	3	5.73E-07	12	5.89%	62	1.30E-05	20	4.27%	45	9.41E-06
5	0.50%	5	1.10E-06	13	6.15%	65	1.35E-05	21	3.26%	34	7.18E-06
6	0.90%	9	1.98E-06	14	6.04%	64	1.33E-05	22	3.30%	35	7.27E-06
7	3.79%	40	8.35E-06	15	7.01%	74	1.54E-05	23	2.46%	26	5.42E-06
8	7.76%	82	1.71E-05	16	7.14%	75	1.57E-05	24	1.87%	20	4.12E-06
								Total		1,055	

50 Almaden Offices - Offsite Residential
Project Operation - Alamden Ave
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2024

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_ALAV	Almaden Avenue Northbound	NB	1	412.8	0.26	9.7	32	1.3	20	1,055
TEXH_SB_ALAV	Almaden Avenue Southbound	SB	1	413.5	0.26	9.7	32	1.3	20	1,055
									Total	2,110

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.05795			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_ALAV

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	12	5.01E-05	9	7.11%	75	3.10E-04	17	7.39%	78	3.22E-04
2	0.42%	4	1.83E-05	10	4.39%	46	1.91E-04	18	8.18%	86	3.56E-04
3	0.41%	4	1.79E-05	11	4.66%	49	2.03E-04	19	5.70%	60	2.48E-04
4	0.26%	3	1.13E-05	12	5.89%	62	2.57E-04	20	4.27%	45	1.86E-04
5	0.50%	5	2.18E-05	13	6.15%	65	2.68E-04	21	3.26%	34	1.42E-04
6	0.90%	9	3.92E-05	14	6.04%	64	2.63E-04	22	3.30%	35	1.44E-04
7	3.79%	40	1.65E-04	15	7.01%	74	3.05E-04	23	2.46%	26	1.07E-04
8	7.76%	82	3.38E-04	16	7.14%	75	3.11E-04	24	1.87%	20	8.15E-05
								Total		1,055	

2024 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_ALAV

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	12	5.02E-05	9	7.11%	75	3.10E-04	17	7.39%	78	3.22E-04
2	0.42%	4	1.83E-05	10	4.39%	46	1.92E-04	18	8.18%	86	3.57E-04
3	0.41%	4	1.79E-05	11	4.66%	49	2.03E-04	19	5.70%	60	2.49E-04
4	0.26%	3	1.13E-05	12	5.89%	62	2.57E-04	20	4.27%	45	1.86E-04
5	0.50%	5	2.18E-05	13	6.15%	65	2.68E-04	21	3.26%	34	1.42E-04
6	0.90%	9	3.93E-05	14	6.04%	64	2.64E-04	22	3.30%	35	1.44E-04
7	3.79%	40	1.65E-04	15	7.01%	74	3.06E-04	23	2.46%	26	1.07E-04
8	7.76%	82	3.39E-04	16	7.14%	75	3.12E-04	24	1.87%	20	8.16E-05
								Total		1,055	

50 Almaden Offices - Offsite Residential
Project Operation - Alamden Ave
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2024

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_ALAV	Almaden Avenue Northbound	NB	1	412.8	0.26	9.7	32	1.3	20	1,055
TEVAP_SB_ALAV	Almaden Avenue Southbound	SB	1	413.5	0.26	9.7	32	1.3	20	1,055
									Total	2,110

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle per Hour (g/hour)	1.31461			
Emissions per Vehicle per Mile (g/VMT)	0.06573			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_ALAV

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	12	5.68E-05	9	7.11%	75	3.51E-04	17	7.39%	78	3.65E-04
2	0.42%	4	2.08E-05	10	4.39%	46	2.17E-04	18	8.18%	86	4.04E-04
3	0.41%	4	2.03E-05	11	4.66%	49	2.30E-04	19	5.70%	60	2.82E-04
4	0.26%	3	1.28E-05	12	5.89%	62	2.91E-04	20	4.27%	45	2.11E-04
5	0.50%	5	2.47E-05	13	6.15%	65	3.04E-04	21	3.26%	34	1.61E-04
6	0.90%	9	4.45E-05	14	6.04%	64	2.98E-04	22	3.30%	35	1.63E-04
7	3.79%	40	1.87E-04	15	7.01%	74	3.46E-04	23	2.46%	26	1.22E-04
8	7.76%	82	3.83E-04	16	7.14%	75	3.53E-04	24	1.87%	20	9.24E-05
								Total		1,055	

2024 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_ALAV

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	12	5.69E-05	9	7.11%	75	3.52E-04	17	7.39%	78	3.66E-04
2	0.42%	4	2.08E-05	10	4.39%	46	2.17E-04	18	8.18%	86	4.05E-04
3	0.41%	4	2.03E-05	11	4.66%	49	2.31E-04	19	5.70%	60	2.82E-04
4	0.26%	3	1.29E-05	12	5.89%	62	2.92E-04	20	4.27%	45	2.11E-04
5	0.50%	5	2.47E-05	13	6.15%	65	3.04E-04	21	3.26%	34	1.61E-04
6	0.90%	9	4.45E-05	14	6.04%	64	2.99E-04	22	3.30%	35	1.63E-04
7	3.79%	40	1.88E-04	15	7.01%	74	3.47E-04	23	2.46%	26	1.22E-04
8	7.76%	82	3.84E-04	16	7.14%	75	3.53E-04	24	1.87%	20	9.26E-05
								Total		1,055	

50 Almaden Offices - Offsite Residential
Project Operation - Alamden Ave
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2024

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_ALAV	Almaden Avenue Northbound	NB	1	412.8	0.26	9.7	32	1.3	20	1,055
FUG_SB_ALAV	Almaden Avenue Southbound	SB	1	413.5	0.26	9.7	32	1.3	20	1,055
									Total	2,110

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00219			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01734			
Road Dust - Emissions per Vehicle (g/VMT)	0.01681			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03634			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_ALAV

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	12	3.14E-05	9	7.11%	75	1.94E-04	17	7.39%	78	2.02E-04
2	0.42%	4	1.15E-05	10	4.39%	46	1.20E-04	18	8.18%	86	2.23E-04
3	0.41%	4	1.12E-05	11	4.66%	49	1.27E-04	19	5.70%	60	1.56E-04
4	0.26%	3	7.10E-06	12	5.89%	62	1.61E-04	20	4.27%	45	1.17E-04
5	0.50%	5	1.37E-05	13	6.15%	65	1.68E-04	21	3.26%	34	8.91E-05
6	0.90%	9	2.46E-05	14	6.04%	64	1.65E-04	22	3.30%	35	9.02E-05
7	3.79%	40	1.04E-04	15	7.01%	74	1.92E-04	23	2.46%	26	6.72E-05
8	7.76%	82	2.12E-04	16	7.14%	75	1.95E-04	24	1.87%	20	5.11E-05
								Total		1,055	

2024 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_ALAV

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	12	3.15E-05	9	7.11%	75	1.95E-04	17	7.39%	78	2.02E-04
2	0.42%	4	1.15E-05	10	4.39%	46	1.20E-04	18	8.18%	86	2.24E-04
3	0.41%	4	1.12E-05	11	4.66%	49	1.28E-04	19	5.70%	60	1.56E-04
4	0.26%	3	7.12E-06	12	5.89%	62	1.61E-04	20	4.27%	45	1.17E-04
5	0.50%	5	1.37E-05	13	6.15%	65	1.68E-04	21	3.26%	34	8.92E-05
6	0.90%	9	2.46E-05	14	6.04%	64	1.65E-04	22	3.30%	35	9.03E-05
7	3.79%	40	1.04E-04	15	7.01%	74	1.92E-04	23	2.46%	26	6.73E-05
8	7.76%	82	2.12E-04	16	7.14%	75	1.95E-04	24	1.87%	20	5.12E-05
								Total		1,055	

50 Almaden Offices, San Jose, CA - Project Traffic TACs & PM2.5
AERMOD Risk Modeling Parameters and Meximum Concentrations
at Construction Cancer Risk and PM2.5 MEI Receptors

Emission Year	2024
Receptor Information	
Number of Receptors	2 at construction MEI locations
Receptor Height	9.1 meters for cancer risk & 1.5 meters for PM2.5
Receptor Distances	Construction MEI locations
Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Winf Direction	Variable

Almaden Boulevard

Construction Cancer Risk MEI - Maximum Concentrations

Meteorological Data Years	2024 Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.00012	0.0114	0.01292

* Concentrations at construction cancer risk MEI receptor

Construction PM2.5 Concentration MEI - Maximum Concentrations

Meteorological Data Years	2024 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.01158	0.01072	0.00086

* Concentrations at construction PM2.5 MEI receptor

Almaden Avenue

Construction Cancer Risk MEI - Maximum Concentrations

Meteorological Data Years	2024 Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.00021	0.01143	0.01293

* Concentrations at construction cancer risk MEI receptor

Construction PM2.5 Concentration MEI - Maximum Concentrations

Meteorological Data Years	2024 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.05384	0.04984	0.004

* Concentrations at construction PM2.5 MEI receptor

Combined Project Traffic Concentrations

Construction Cancer Risk MEI - Maximum Concentrations

Meteorological Data Years	2024 Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.00033	0.02283	0.02585

* Concentrations at construction cancer risk MEI receptor

Construction PM2.5 Concentration MEI - Maximum Concentrations

Meteorological Data Years	2024 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.06542	0.06056	0.00486

* Concentrations at construction PM2.5 MEI receptor

50 Almaden Offices, San Jose, CA
Maximum DPM Cancer Risk Calculations From - Project Traffic Emissions
Impacts at MEI - 9.1m Cancer Risk MEI, 1.5m PM2.5 MEI Receptor Heights

Cancer Risk Calculation Method

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

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

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

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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2021	10	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.000
1	1	0 - 1	2021	10	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.000
2	1	1 - 2	2022	10	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.000
3	1	2 - 3	2023	3	0.0000	0.0000	0.0000	0.000	0.000	0.0000	0.000
4	1	3 - 4	2024	3	0.0003	0.0228	0.0259	0.009	0.003	0.0002	0.012
5	1	4 - 5	2025	3	0.0003	0.0228	0.0259	0.009	0.003	0.0002	0.012
6	1	5 - 6	2026	3	0.0003	0.0228	0.0259	0.009	0.003	0.0002	0.012
7	1	6 - 7	2027	3	0.0003	0.0228	0.0259	0.009	0.003	0.0002	0.012
8	1	7 - 8	2028	3	0.0003	0.0228	0.0259	0.009	0.003	0.0002	0.012
9	1	8 - 9	2029	3	0.0003	0.0228	0.0259	0.009	0.003	0.0002	0.012
10	1	9 - 10	2030	3	0.0003	0.0228	0.0259	0.009	0.003	0.0002	0.012
11	1	10 - 11	2031	3	0.0003	0.0228	0.0259	0.009	0.003	0.0002	0.012
12	1	11 - 12	2032	3	0.0003	0.0228	0.0259	0.009	0.003	0.0002	0.012
13	1	12 - 13	2033	3	0.0003	0.0228	0.0259	0.009	0.003	0.0002	0.012
14	1	13 - 14	2034	3	0.0003	0.0228	0.0259	0.009	0.003	0.0002	0.012
15	1	14 - 15	2035	3	0.0003	0.0228	0.0259	0.009	0.003	0.0002	0.012
16	1	15 - 16	2036	3	0.0003	0.0228	0.0259	0.009	0.003	0.0002	0.012
17	1	16-17	2037	1	0.0003	0.0228	0.0259	0.001	0.000	0.0000	0.001
18	1	17-18	2038	1	0.0003	0.0228	0.0259	0.001	0.000	0.0000	0.001
19	1	18-19	2039	1	0.0003	0.0228	0.0259	0.001	0.000	0.0000	0.001
20	1	19-20	2040	1	0.0003	0.0228	0.0259	0.001	0.000	0.0000	0.001
21	1	20-21	2041	1	0.0003	0.0228	0.0259	0.001	0.000	0.0000	0.001
22	1	21-22	2042	1	0.0003	0.0228	0.0259	0.001	0.000	0.0000	0.001
23	1	22-23	2043	1	0.0003	0.0228	0.0259	0.001	0.000	0.0000	0.001
24	1	23-24	2044	1	0.0003	0.0228	0.0259	0.001	0.000	0.0000	0.001
25	1	24-25	2045	1	0.0003	0.0228	0.0259	0.001	0.000	0.0000	0.001
26	1	25-26	2046	1	0.0003	0.0228	0.0259	0.001	0.000	0.0000	0.001
27	1	26-27	2047	1	0.0003	0.0228	0.0259	0.001	0.000	0.0000	0.001
28	1	27-28	2048	1	0.0003	0.0228	0.0259	0.001	0.000	0.0000	0.001
29	1	28-29	2049	1	0.0003	0.0228	0.0259	0.001	0.000	0.0000	0.001
30	1	29-30	2050	1	0.0003	0.0228	0.0259	0.001	0.000	0.0000	0.001
Total Increased Cancer Risk								0.12	0.049	0.003	**0.2**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0001	0.06	0.07

* Third trimester of pregnancy

Project Generator Emissions and Health Risk Calculations

50 Almaden Offices, San Jose, CA

Standby Emergency Generator Impacts

Off-site Sensitive Receptors

1st Res Level receptor height = 9.1 meter cancer risk, 1.5 meter PM2.5 concentration

DPM Emission Rates			
	DPM Emissions per Generator		
	Max Daily	Annual	
Source Type	(lb/day)	(lb/year)	
1500-kW 2011- hp Generator	0.066	24.20	
CalEEMod DPM Emissions	0.0121	tons/year	

Modeling Information		
Model	AERMOD	
Source	Diesel Generator Engine	
Source Type	Point	
Meteorological Data	2013-2017 San Jose Airport Meterological Data	
Point Source Stack Parameters		
Generator Engine Size (hp)	2011	
Stack Height (ft)	12.00	near ground level release
Stack Diameter (ft)**	0.60	
Exhaust Gas Flowrate (CFM)*	2527.73	
Stack Exit Velocity (ft/sec)**	149.00	
Exhaust Temperature (˚F)**	872.00	
Emissions Rate (lb/hr)	0.002763	

* AERMOD default

**BAAQMD default generator parameters

50 Almaden Offices, San Jose, CA - Cancer Risks from Project Operation
Project Emergency Generator
Impacts at Off-Site Receptors- 9.1m Cancer Risk MEI, 1.5m PM2.5 MEI Receptor Heights
Impact at Project MEI (27-year Exposure)

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

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

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

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

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information						
			DPM Conc (ug/m3)				Hazard	Fugitive	Total
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**Index**	**PM2.5**	**PM2.5**
0	0.25	-0.25 - 0*	2021	0.0000	10	0.00			
1	1	0 - 1	2021	0.0000	10	0.00			
2	1	1 - 2	2022	0.0000	10	0.00	0.0000	0.0000	0.0000
3	1	2 - 3	2023	0.0000	3	0.00	0.0000	0.0000	0.0000
4	1	3 - 4	2024	0.0104	3	0.27	0.0021	0.0104	0.0208
5	1	4 - 5	2025	0.0104	3	0.27	0.0021	0.0104	0.0208
6	1	5 - 6	2026	0.0104	3	0.27	0.0021	0.0104	0.0208
7	1	6 - 7	2027	0.0104	3	0.27	0.0021	0.0104	0.0208
8	1	7 - 8	2028	0.0104	3	0.27	0.0021	0.0104	0.0208
9	1	8 - 9	2029	0.0104	3	0.27	0.0021	0.0104	0.0208
10	1	9 - 10	2030	0.0104	3	0.27	0.0021	0.0104	0.0208
11	1	10 - 11	2031	0.0104	3	0.27	0.0021	0.0104	0.0208
12	1	11 - 12	2032	0.0104	3	0.27	0.0021	0.0104	0.0208
13	1	12 - 13	2033	0.0104	3	0.27	0.0021	0.0104	0.0208
14	1	13 - 14	2034	0.0104	3	0.27	0.0021	0.0104	0.0208
15	1	14 - 15	2035	0.0104	3	0.27	0.0021	0.0104	0.0208
16	1	15 - 16	2036	0.0104	3	0.27	0.0021	0.0104	0.0208
17	1	16-17	2037	0.0104	1	0.03	0.0021	0.0104	0.0208
18	1	17-18	2038	0.0104	1	0.03	0.0021	0.0104	0.0208
19	1	18-19	2039	0.0104	1	0.03	0.0021	0.0104	0.0208
20	1	19-20	2040	0.0104	1	0.03	0.0021	0.0104	0.0208
21	1	20-21	2041	0.0104	1	0.03	0.0021	0.0104	0.0208
22	1	21-22	2042	0.0104	1	0.03	0.0021	0.0104	0.0208
23	1	22-23	2043	0.0104	1	0.03	0.0021	0.0104	0.0208
24	1	23-24	2044	0.0104	1	0.03	0.0021	0.0104	0.0208
25	1	24-25	2045	0.0104	1	0.03	0.0021	0.0104	0.0208
26	1	25-26	2046	0.0104	1	0.03	0.0021	0.0104	0.0208
27	1	26-27	2047	0.0104	1	0.03	0.0021	0.0104	0.0208
28	1	27-28	2048	0.0104	1	0.03	0.0021	0.0104	0.0208
29	1	28-29	2049	0.0104	1	0.03	0.0021	0.0104	0.0208
30	1	29-30	2050	0.0104	1	0.03	0.0021	0.0104	0.0208
Total Increased Cancer Risk						**3.9**	**Max**	**0.0021**	**0.010**	**0.021**

* Third trimester of pregnancy

Attachment 5: Community Risk Screening and Health Risk Calculations

S.R. 87 Emissions and Health Risk Calculations

```
           File Name:   50 Almden Blvd Santa Clara (SF) - 2024 - SR 87 Annual.EF
CT-EMFAC2017 Version:   1.0.2.27401
            Run Date:   6/30/2020 1:20:10 AM
                Area:   Santa Clara (SF)
       Analysis Year:   2024
              Season:   Annual

=============================================================================

Vehicle Category        VMT Fraction            Diesel VMT Fraction     Gas VMT Fraction
                        Across Category         Within Category         Within Category
         Truck 1              0.027                   0.495                   0.505
         Truck 2              0.010                   0.937                   0.048
       Non-Truck              0.963                   0.014                   0.955

=============================================================================

              Road Type:                Freeway
     Silt Loading Factor:                  CARB          0.015 g/m2
Precipitation Correction:                  CARB          P = 64 days     N = 365 days

=============================================================================

Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

       Pollutant Name     10 mph     15 mph     20 mph     30 mph     40 mph     50 mph     60 mph     65 mph
                PM2.5   0.005857   0.003984   0.002852   0.001732   0.001319   0.001248   0.001432   0.001631
                  TOG   0.121802   0.081457   0.057279   0.034532   0.025500   0.022832   0.024828   0.027897
            Diesel PM   0.000811   0.000629   0.000500   0.000376   0.000353   0.000399   0.000501   0.000564
                 DEOG   0.011489   0.006109   0.003010   0.001648   0.001185   0.001009   0.001016   0.001052

=============================================================================

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

       Pollutant Name   Emission Factor
                  TOG          1.346234

=============================================================================

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

       Pollutant Name   Emission Factor
                PM2.5          0.002067

=============================================================================

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

       Pollutant Name   Emission Factor
                PM2.5          0.016803

=============================================================================

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

       Pollutant Name   Emission Factor
                PM2.5          0.007011

============================END==============================================
```

50 Almaden Blvd Office Tower -Roadway Emissions
SR 87
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2024

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
NB87_DPM	Northbound SR-87	N	3	470.6	0.29	17.0	55.7	3.4	Variable	67,098
SB87_DPM	Southbound SR-87	S	3	470.6	0.29	17.0	55.7	3.4	Variable	67,098
									Total	134,196

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	65	60	30	15
Emissions per Vehicle (g/VMT)	0.00056	0.000501	0.000376	0.000629

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and DPM Emissions - NB87_DPM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.90%	2615	1.20E-04	9	6.42%	4307	2.20E-04	17	5.62%	3768	1.53E-04
2	2.58%	1730	7.93E-05	10	7.34%	4922	2.25E-04	18	3.27%	2192	8.92E-05
3	2.87%	1923	8.81E-05	11	6.42%	4307	1.97E-04	19	2.35%	1577	7.22E-05
4	3.32%	2230	1.02E-04	12	6.88%	4614	2.11E-04	20	0.86%	577	2.64E-05
5	2.18%	1461	6.69E-05	13	6.25%	4191	1.92E-04	21	3.09%	2076	9.51E-05
6	3.38%	2269	1.04E-04	14	6.19%	4153	1.90E-04	22	4.13%	2769	1.27E-04
7	6.02%	4037	1.85E-04	15	5.10%	3422	1.57E-04	23	2.52%	1692	7.75E-05
8	4.64%	3115	1.59E-04	16	3.78%	2538	1.16E-04	24	0.92%	615	2.82E-05
								Total		67,098	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - SB87_DPM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.90%	2615	1.20E-04	9	6.42%	4307	1.75E-04	17	5.62%	3768	1.15E-04
2	2.58%	1730	7.93E-05	10	7.34%	4922	2.25E-04	18	3.27%	2192	6.69E-05
3	2.87%	1923	8.81E-05	11	6.42%	4307	1.97E-04	19	2.35%	1577	7.22E-05
4	3.32%	2230	1.02E-04	12	6.88%	4614	2.11E-04	20	0.86%	577	2.64E-05
5	2.18%	1461	6.69E-05	13	6.25%	4191	1.92E-04	21	3.09%	2076	9.51E-05
6	3.38%	2269	1.04E-04	14	6.19%	4153	1.90E-04	22	4.13%	2769	1.27E-04
7	6.02%	4037	1.85E-04	15	5.10%	3422	1.57E-04	23	2.52%	1692	7.75E-05
8	4.64%	3115	1.27E-04	16	3.78%	2538	1.16E-04	24	0.92%	615	2.82E-05
								Total		67,098	

Analysis Year = ***2024***

Vehicle Type	2018 Caltrans Vehicles (veh/day)	2024 Vehicles (veh/day)
Truck 1 (MDT)	3,363	3,565
Truck 2 (HDT)	1,321	1,400
Non-Truck	121,916	129,231
Total	**126,600**	**134,196**

Increase From 2018 1.06
Vehicles/Direction **67,098**
Avg Vehicles/Hour/Direction 2,796

Traffic Data Year = ***2018***

Caltrans AASTs & Truck %s (2018)	AADT Total	Total Truck	Trucks by Axle 2	3	4	5
RTE 87, A - San Jose, Park Avenue	126,600	4,684	3,363	609	159	553
Rte 101, A Shiloh Road			71.80%	13.00%	3.40%	11.80%
Percent of Total Vehicles		3.70%	2.66%	0.48%	0.13%	0.44%

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

50 Almaden Blvd Office Tower -Roadway Emissions
SR 87
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2024

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
NB87_PM25	Northbound SR-87	N	3	470.6	0.29	17.0	56	1.3	Variable	67,098
SB87_PM25	Southbound SR-87	S	3	470.6	0.29	17.0	56	1.3	Variable	67,098
									Total	134,196

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	65	60	30	15
Emissions per Vehicle (g/VMT)	0.001631	0.00143	0.001732	0.003984

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and PM2.5 Emissions - NB87_PM25

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	773	1.02E-04	9	7.11%	4772	1.54E-03	17	7.39%	4956	5.76E-04
2	0.42%	280	3.71E-05	10	4.39%	2943	3.90E-04	18	8.18%	5486	6.38E-04
3	0.41%	272	3.61E-05	11	4.66%	3130	4.15E-04	19	5.70%	3821	5.06E-04
4	0.26%	175	2.32E-05	12	5.89%	3951	5.23E-04	20	4.27%	2868	3.80E-04
5	0.50%	335	4.44E-05	13	6.15%	4128	5.47E-04	21	3.26%	2186	2.90E-04
6	0.90%	606	8.03E-05	14	6.04%	4051	5.37E-04	22	3.30%	2212	2.93E-04
7	3.79%	2543	3.37E-04	15	7.01%	4707	6.24E-04	23	2.46%	1651	2.19E-04
8	7.76%	5210	1.69E-03	16	7.14%	4789	6.34E-04	24	1.87%	1252	1.66E-04
								Total		67,098	

2024 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - SB87_PM25

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	773	1.02E-04	9	7.11%	4772	5.55E-04	17	7.39%	4956	6.97E-04
2	0.42%	280	3.71E-05	10	4.39%	2943	3.90E-04	18	8.18%	5486	7.72E-04
3	0.41%	272	3.61E-05	11	4.66%	3130	4.15E-04	19	5.70%	3821	5.06E-04
4	0.26%	175	2.32E-05	12	5.89%	3951	5.23E-04	20	4.27%	2868	3.80E-04
5	0.50%	335	4.44E-05	13	6.15%	4128	5.47E-04	21	3.26%	2186	2.90E-04
6	0.90%	606	8.03E-05	14	6.04%	4051	5.37E-04	22	3.30%	2212	2.93E-04
7	3.79%	2543	3.37E-04	15	7.01%	4707	6.24E-04	23	2.46%	1651	2.19E-04
8	7.76%	5210	6.06E-04	16	7.14%	4789	6.34E-04	24	1.87%	1252	1.66E-04
								Total		67,098	

50 Almaden Blvd Office Tower -Roadway Emissions
SR 87
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2024

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
NB87_TEXH	Northbound SR-87	N	3	470.6	0.29	17.0	56	1.3	Variable	67,098
SB87_TEXH	Southbound SR-87	S	3	470.6	0.29	17.0	56	1.3	Variable	67,098
									Total	134,196

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	65	60	30	15
All Vehicles TOG Emissions per Vehicle (g/VMT)	0.027897	0.024828	0.03453	0.08146
Diesel Veghicles TOG Emissions per Vehicle (g/VMT)	0.001052	0.001016	0.00165	0.00611
Gasoline Vehicles Emissions per Vehicle (g/VMT)	0.02685	0.02381	0.03288	0.07535

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - NB87_TEXH

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	773	1.68E-03	9	7.11%	4772	2.92E-02	17	7.39%	4956	9.58E-03
2	0.42%	280	6.11E-04	10	4.39%	2943	6.42E-03	18	8.18%	5486	1.06E-02
3	0.41%	272	5.94E-04	11	4.66%	3130	6.83E-03	19	5.70%	3821	8.33E-03
4	0.26%	175	3.83E-04	12	5.89%	3951	8.62E-03	20	4.27%	2868	6.25E-03
5	0.50%	335	7.31E-04	13	6.15%	4128	9.00E-03	21	3.26%	2186	4.77E-03
6	0.90%	606	1.32E-03	14	6.04%	4051	8.83E-03	22	3.30%	2212	4.82E-03
7	3.79%	2543	5.55E-03	15	7.01%	4707	1.03E-02	23	2.46%	1651	3.60E-03
8	7.76%	5210	3.19E-02	16	7.14%	4789	1.04E-02	24	1.87%	1252	2.73E-03
								Total		67,098	

2024 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - SB87_TEXH

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	773	1.68E-03	9	7.11%	4772	9.23E-03	17	7.39%	4956	1.32E-02
2	0.42%	280	6.11E-04	10	4.39%	2943	6.42E-03	18	8.18%	5486	1.47E-02
3	0.41%	272	5.94E-04	11	4.66%	3130	6.83E-03	19	5.70%	3821	8.33E-03
4	0.26%	175	3.83E-04	12	5.89%	3951	8.62E-03	20	4.27%	2868	6.25E-03
5	0.50%	335	7.31E-04	13	6.15%	4128	9.00E-03	21	3.26%	2186	4.77E-03
6	0.90%	606	1.32E-03	14	6.04%	4051	8.83E-03	22	3.30%	2212	4.82E-03
7	3.79%	2543	5.55E-03	15	7.01%	4707	1.03E-02	23	2.46%	1651	3.60E-03
8	7.76%	5210	1.01E-02	16	7.14%	4789	1.04E-02	24	1.87%	1252	2.73E-03
								Total		67,098	

50 Almaden Blvd Office Tower -Roadway Emissions
SR 87
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2024

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
NB87_TEVAP	Northbound SR-87	N	3	470.6	0.29	17.0	56	1.3	Variable	67,098
SB87_TEVAP	Southbound SR-87	S	3	470.6	0.29	17.0	56	1.3	Variable	67,098
									Total	134,196

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	65	60	30	15
Emissions per Vehicle per Hour (g/hour)	1.34623	1.34623	1.34623	1.34623
Emissions per Vehicle per Mile (g/VMT)	0.02071	0.02244	0.04487	0.08975

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - NB87_TEVAP

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	773	1.30E-03	9	7.11%	4772	3.48E-02	17	7.39%	4956	9.03E-03
2	0.42%	280	4.71E-04	10	4.39%	2943	4.95E-03	18	8.18%	5486	1.00E-02
3	0.41%	272	4.58E-04	11	4.66%	3130	5.27E-03	19	5.70%	3821	6.43E-03
4	0.26%	175	2.95E-04	12	5.89%	3951	6.65E-03	20	4.27%	2868	4.82E-03
5	0.50%	335	5.64E-04	13	6.15%	4128	6.94E-03	21	3.26%	2186	3.68E-03
6	0.90%	606	1.02E-03	14	6.04%	4051	6.81E-03	22	3.30%	2212	3.72E-03
7	3.79%	2543	4.28E-03	15	7.01%	4707	7.92E-03	23	2.46%	1651	2.78E-03
8	7.76%	5210	3.80E-02	16	7.14%	4789	8.06E-03	24	1.87%	1252	2.11E-03
								Total		67,098	

2024 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - SB87_TEVAP

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	773	1.30E-03	9	7.11%	4772	8.70E-03	17	7.39%	4956	1.81E-02
2	0.42%	280	4.71E-04	10	4.39%	2943	4.95E-03	18	8.18%	5486	2.00E-02
3	0.41%	272	4.58E-04	11	4.66%	3130	5.27E-03	19	5.70%	3821	6.43E-03
4	0.26%	175	2.95E-04	12	5.89%	3951	6.65E-03	20	4.27%	2868	4.82E-03
5	0.50%	335	5.64E-04	13	6.15%	4128	6.94E-03	21	3.26%	2186	3.68E-03
6	0.90%	606	1.02E-03	14	6.04%	4051	6.81E-03	22	3.30%	2212	3.72E-03
7	3.79%	2543	4.28E-03	15	7.01%	4707	7.92E-03	23	2.46%	1651	2.78E-03
8	7.76%	5210	9.49E-03	16	7.14%	4789	8.06E-03	24	1.87%	1252	2.11E-03
								Total		67,098	

50 Almaden Blvd Office Tower -Roadway Emissions
SR 87
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2024

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
NB87_FUG	Northbound SR-87	N	3	470.6	0.29	17.0	56	1.3	Variable	67,098
SB87_FUG	Southbound SR-87	S	3	470.6	0.29	17.0	56	1.3	Variable	67,098
									Total	134,196

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	65	60	30	15
Tire Wear - Emissions per Vehicle (g/VMT)	0.00207	0.00207	0.00207	0.00207
Brake Wear - Emissions per Vehicle (g/VMT)	0.01680	0.01680	0.01680	0.01680
Road Dust - Emissions per Vehicle (g/VMT)	0.00701	0.00701	0.00701	0.00701
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02588	0.02588	0.02588	0.02588

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - NB87_FUG

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	773	1.62E-03	9	7.11%	4772	1.00E-02	17	7.39%	4956	1.04E-02
2	0.42%	280	5.89E-04	10	4.39%	2943	6.19E-03	18	8.18%	5486	1.15E-02
3	0.41%	272	5.73E-04	11	4.66%	3130	6.58E-03	19	5.70%	3821	8.03E-03
4	0.26%	175	3.69E-04	12	5.89%	3951	8.31E-03	20	4.27%	2868	6.03E-03
5	0.50%	335	7.05E-04	13	6.15%	4128	8.68E-03	21	3.26%	2186	4.59E-03
6	0.90%	606	1.27E-03	14	6.04%	4051	8.52E-03	22	3.30%	2212	4.65E-03
7	3.79%	2543	5.35E-03	15	7.01%	4707	9.89E-03	23	2.46%	1651	3.47E-03
8	7.76%	5210	1.10E-02	16	7.14%	4789	1.01E-02	24	1.87%	1252	2.63E-03
								Total		67,098	

2024 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - SB87_FUG

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	773	1.62E-03	9	7.11%	4772	1.00E-02	17	7.39%	4956	1.04E-02
2	0.42%	280	5.89E-04	10	4.39%	2943	6.19E-03	18	8.18%	5486	1.15E-02
3	0.41%	272	5.73E-04	11	4.66%	3130	6.58E-03	19	5.70%	3821	8.03E-03
4	0.26%	175	3.69E-04	12	5.89%	3951	8.31E-03	20	4.27%	2868	6.03E-03
5	0.50%	335	7.05E-04	13	6.15%	4128	8.68E-03	21	3.26%	2186	4.59E-03
6	0.90%	606	1.27E-03	14	6.04%	4051	8.52E-03	22	3.30%	2212	4.65E-03
7	3.79%	2543	5.35E-03	15	7.01%	4707	9.89E-03	23	2.46%	1651	3.47E-03
8	7.76%	5210	1.10E-02	16	7.14%	4789	1.01E-02	24	1.87%	1252	2.63E-03
								Total		67,098	

50 Almaden Offices, San Jose, CA - State Route 87 Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Meximum Concentrations
at Construction Cancer Risk and PM2.5 MEI Receptors

Emission Year	2024
Receptor Information	
Number of Receptors	2 at construction MEI locations
Receptor Height	9.1 meters for cancer risk & 1.5 meters for PM2.5
Receptor Distances	Construction MEI locations
Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Winf Direction	Variable

Construction Cancer Risk MEI - Maximum Concentrations

Meteorological Data Years	2023 Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0014	0.07054	0.065

* Concentrations at construction cancer risk MEI receptor

Construction PM2.5 Concentration MEI - Maximum Concentrations

Meteorological Data Years	2023 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.07226	0.06781	0.00445

* Concentrations at construction PM2.5 MEI receptor

50 Almaden Offices, San Jose, CA
Maximum DPM Cancer Risk Calculations From - Traffic Emissions on State Route 87
Impacts at MEI - 9.1m Cancer Risk MEI, 1.5m PM2.5 Receptor Heights

Cancer Risk Calculation Method

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

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

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

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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2023	10	0.0014	0.0705	0.0650	0.019	0.005	0.0003	0.02
1	1	0 - 1	2023	10	0.0014	0.0705	0.0650	0.230	0.066	0.0036	0.30
2	1	1 - 2	2024	10	0.0014	0.0705	0.0650	0.230	0.066	0.0036	0.30
3	1	2 - 3	2025	3	0.0014	0.0705	0.0650	0.036	0.010	0.0006	0.05
4	1	3 - 4	2026	3	0.0014	0.0705	0.0650	0.036	0.010	0.0006	0.05
5	1	4 - 5	2027	3	0.0014	0.0705	0.0650	0.036	0.010	0.0006	0.05
6	1	5 - 6	2028	3	0.0014	0.0705	0.0650	0.036	0.010	0.0006	0.05
7	1	6 - 7	2029	3	0.0014	0.0705	0.0650	0.036	0.010	0.0006	0.05
8	1	7 - 8	2030	3	0.0014	0.0705	0.0650	0.036	0.010	0.0006	0.05
9	1	8 - 9	2031	3	0.0014	0.0705	0.0650	0.036	0.010	0.0006	0.05
10	1	9 - 10	2032	3	0.0014	0.0705	0.0650	0.036	0.010	0.0006	0.05
11	1	10 - 11	2033	3	0.0014	0.0705	0.0650	0.036	0.010	0.0006	0.05
12	1	11 - 12	2034	3	0.0014	0.0705	0.0650	0.036	0.010	0.0006	0.05
13	1	12 - 13	2035	3	0.0014	0.0705	0.0650	0.036	0.010	0.0006	0.05
14	1	13 - 14	2036	3	0.0014	0.0705	0.0650	0.036	0.010	0.0006	0.05
15	1	14 - 15	2037	3	0.0014	0.0705	0.0650	0.036	0.010	0.0006	0.05
16	1	15 - 16	2038	3	0.0014	0.0705	0.0650	0.036	0.010	0.0006	0.05
17	1	16-17	2039	1	0.0014	0.0705	0.0650	0.004	0.001	0.0001	0.005
18	1	17-18	2040	1	0.0014	0.0705	0.0650	0.004	0.001	0.0001	0.005
19	1	18-19	2041	1	0.0014	0.0705	0.0650	0.004	0.001	0.0001	0.005
20	1	19-20	2042	1	0.0014	0.0705	0.0650	0.004	0.001	0.0001	0.005
21	1	20-21	2043	1	0.0014	0.0705	0.0650	0.004	0.001	0.0001	0.005
22	1	21-22	2044	1	0.0014	0.0705	0.0650	0.004	0.001	0.0001	0.005
23	1	22-23	2045	1	0.0014	0.0705	0.0650	0.004	0.001	0.0001	0.005
24	1	23-24	2046	1	0.0014	0.0705	0.0650	0.004	0.001	0.0001	0.005
25	1	24-25	2047	1	0.0014	0.0705	0.0650	0.004	0.001	0.0001	0.005
26	1	25-26	2048	1	0.0014	0.0705	0.0650	0.004	0.001	0.0001	0.005
27	1	26-27	2049	1	0.0014	0.0705	0.0650	0.004	0.001	0.0001	0.005
28	1	27-28	2050	1	0.0014	0.0705	0.0650	0.004	0.001	0.0001	0.005
29	1	28-29	2051	1	0.0014	0.0705	0.0650	0.004	0.001	0.0001	0.005
30	1	29-30	2052	1	0.0014	0.0705	0.0650	0.004	0.001	0.0001	0.005
Total Increased Cancer Risk								1.04	0.300	0.016	**1.4**

* Third trimester of pregnancy

Maximum Hazard Index	Fugitive PM2.5	Total PM2.5
0.0003	0.07	0.07

Almaden Boulevard Traffic Emissions and Health Risk Calculations

50 Almaden Offices - Offsite Residential
Cumulative Operation - Alamden Blvd
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2024

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_ALBL	Almaden Boulevard Northbound	NB	2	666.5	0.41	13.3	43.7	3.4	20	6,825
DPM_SB_ALBL	Almaden Boulevard Southbound	SB	2	660.4	0.41	13.3	43.7	3.4	20	6,825
									Total	13,650

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.00064			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and DPM Emissions - DPM_NB_ALBL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.90%	266	1.95E-05	9	6.42%	438	3.21E-05	17	5.62%	384	2.81E-05
2	2.58%	176	1.29E-05	10	7.34%	501	3.67E-05	18	3.27%	223	1.64E-05
3	2.87%	196	1.44E-05	11	6.42%	438	3.21E-05	19	2.35%	160	1.18E-05
4	3.32%	227	1.66E-05	12	6.88%	470	3.44E-05	20	0.86%	59	4.30E-06
5	2.18%	149	1.09E-05	13	6.25%	427	3.13E-05	21	3.09%	211	1.55E-05
6	3.38%	231	1.69E-05	14	6.19%	422	3.10E-05	22	4.13%	282	2.07E-05
7	6.02%	411	3.01E-05	15	5.10%	348	2.55E-05	23	2.52%	172	1.26E-05
8	4.64%	317	2.32E-05	16	3.78%	258	1.89E-05	24	0.92%	63	4.60E-06
								Total		6,827	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_ALBL

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.90%	266	1.93E-05	9	6.42%	438	3.18E-05	17	5.62%	384	2.79E-05
2	2.58%	176	1.28E-05	10	7.34%	501	3.64E-05	18	3.27%	223	1.62E-05
3	2.87%	196	1.42E-05	11	6.42%	438	3.18E-05	19	2.35%	160	1.16E-05
4	3.32%	227	1.65E-05	12	6.88%	470	3.41E-05	20	0.86%	59	4.26E-06
5	2.18%	149	1.08E-05	13	6.25%	427	3.10E-05	21	3.09%	211	1.53E-05
6	3.38%	231	1.67E-05	14	6.19%	422	3.07E-05	22	4.13%	282	2.05E-05
7	6.02%	411	2.98E-05	15	5.10%	348	2.53E-05	23	2.52%	172	1.25E-05
8	4.64%	317	2.30E-05	16	3.78%	258	1.87E-05	24	0.92%	63	4.56E-06
								Total		6,827	

50 Almaden Offices - Offsite Residential
Cumulative Operation - Alamden Blvd
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2024

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_ALBL	Almaden Boulevard Northbound	NB	2	666.5	0.41	13.3	44	1.3	20	6,825
PM2.5_SB_ALBL	Almaden Boulevard Southbound	SB	2	660.4	0.41	13.3	44	1.3	20	6,825
									Total	13,650

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.002926			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_ALBL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	78	2.64E-05	9	7.11%	485	1.63E-04	17	7.39%	504	1.70E-04
2	0.42%	29	9.65E-06	10	4.39%	300	1.01E-04	18	8.18%	558	1.88E-04
3	0.41%	28	9.42E-06	11	4.66%	318	1.07E-04	19	5.70%	389	1.31E-04
4	0.26%	18	5.97E-06	12	5.89%	402	1.35E-04	20	4.27%	291	9.81E-05
5	0.50%	34	1.15E-05	13	6.15%	420	1.41E-04	21	3.26%	222	7.49E-05
6	0.90%	61	2.07E-05	14	6.04%	412	1.39E-04	22	3.30%	225	7.58E-05
7	3.79%	259	8.71E-05	15	7.01%	478	1.61E-04	23	2.46%	168	5.65E-05
8	7.76%	530	1.78E-04	16	7.14%	487	1.64E-04	24	1.87%	128	4.30E-05
								Total		6,826	

2024 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_SB_ALBL

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	78	2.62E-05	9	7.11%	485	1.62E-04	17	7.39%	504	1.68E-04
2	0.42%	29	9.56E-06	10	4.39%	300	9.99E-05	18	8.18%	558	1.86E-04
3	0.41%	28	9.33E-06	11	4.66%	318	1.06E-04	19	5.70%	389	1.30E-04
4	0.26%	18	5.92E-06	12	5.89%	402	1.34E-04	20	4.27%	291	9.72E-05
5	0.50%	34	1.14E-05	13	6.15%	420	1.40E-04	21	3.26%	222	7.42E-05
6	0.90%	61	2.05E-05	14	6.04%	412	1.37E-04	22	3.30%	225	7.51E-05
7	3.79%	259	8.63E-05	15	7.01%	478	1.60E-04	23	2.46%	168	5.60E-05
8	7.76%	530	1.77E-04	16	7.14%	487	1.63E-04	24	1.87%	128	4.26E-05
								Total		6,826	

50 Almaden Offices - Offsite Residential
Cumulative Operation - Alamden Blvd
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2024

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_ALBL	Almaden Boulevard Northbound	NB	2	666.5	0.41	13.3	44	1.3	20	6,825
TEXH_SB_ALBL	Almaden Boulevard Southbound	SB	2	660.4	0.41	13.3	44	1.3	20	6,825
									Total	13,650

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.05795			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_ALBL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	78	5.23E-04	9	7.11%	485	3.24E-03	17	7.39%	504	3.36E-03
2	0.42%	29	1.91E-04	10	4.39%	300	2.00E-03	18	8.18%	558	3.72E-03
3	0.41%	28	1.87E-04	11	4.66%	318	2.12E-03	19	5.70%	389	2.59E-03
4	0.26%	18	1.18E-04	12	5.89%	402	2.68E-03	20	4.27%	291	1.94E-03
5	0.50%	34	2.28E-04	13	6.15%	420	2.80E-03	21	3.26%	222	1.48E-03
6	0.90%	61	4.10E-04	14	6.04%	412	2.75E-03	22	3.30%	225	1.50E-03
7	3.79%	259	1.72E-03	15	7.01%	478	3.19E-03	23	2.46%	168	1.12E-03
8	7.76%	530	3.53E-03	16	7.14%	487	3.25E-03	24	1.87%	128	8.51E-04
								Total		6,826	

2024 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_ALBL

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	78	5.18E-04	9	7.11%	485	3.21E-03	17	7.39%	504	3.33E-03
2	0.42%	29	1.89E-04	10	4.39%	300	1.98E-03	18	8.18%	558	3.69E-03
3	0.41%	28	1.85E-04	11	4.66%	318	2.10E-03	19	5.70%	389	2.57E-03
4	0.26%	18	1.17E-04	12	5.89%	402	2.66E-03	20	4.27%	291	1.93E-03
5	0.50%	34	2.25E-04	13	6.15%	420	2.77E-03	21	3.26%	222	1.47E-03
6	0.90%	61	4.06E-04	14	6.04%	412	2.72E-03	22	3.30%	225	1.49E-03
7	3.79%	259	1.71E-03	15	7.01%	478	3.16E-03	23	2.46%	168	1.11E-03
8	7.76%	530	3.50E-03	16	7.14%	487	3.22E-03	24	1.87%	128	8.43E-04
								Total		6,826	

50 Almaden Offices - Offsite Residential
Cumulative Operation - Alamden Blvd
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2024

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_ALBL	Almaden Boulevard Northbound	NB	2	666.5	0.41	13.3	44	1.3	20	6,825
TEVAP_SB_ALBL	Almaden Boulevard Southbound	SB	2	660.4	0.41	13.3	44	1.3	20	6,825
									Total	13,650

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle per Hour (g/hour)	1.31461			
Emissions per Vehicle per Mile (g/VMT)	0.06573			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_ALBL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	78	5.93E-04	9	7.11%	485	3.67E-03	17	7.39%	504	3.81E-03
2	0.42%	29	2.17E-04	10	4.39%	300	2.27E-03	18	8.18%	558	4.22E-03
3	0.41%	28	2.12E-04	11	4.66%	318	2.40E-03	19	5.70%	389	2.94E-03
4	0.26%	18	1.34E-04	12	5.89%	402	3.04E-03	20	4.27%	291	2.20E-03
5	0.50%	34	2.58E-04	13	6.15%	420	3.17E-03	21	3.26%	222	1.68E-03
6	0.90%	61	4.64E-04	14	6.04%	412	3.12E-03	22	3.30%	225	1.70E-03
7	3.79%	259	1.96E-03	15	7.01%	478	3.62E-03	23	2.46%	168	1.27E-03
8	7.76%	530	4.00E-03	16	7.14%	487	3.68E-03	24	1.87%	128	9.65E-04
								Total		6,826	

2024 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_ALBL

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	78	5.88E-04	9	7.11%	485	3.64E-03	17	7.39%	504	3.78E-03
2	0.42%	29	2.15E-04	10	4.39%	300	2.24E-03	18	8.18%	558	4.18E-03
3	0.41%	28	2.10E-04	11	4.66%	318	2.38E-03	19	5.70%	389	2.91E-03
4	0.26%	18	1.33E-04	12	5.89%	402	3.01E-03	20	4.27%	291	2.18E-03
5	0.50%	34	2.56E-04	13	6.15%	420	3.14E-03	21	3.26%	222	1.67E-03
6	0.90%	61	4.60E-04	14	6.04%	412	3.09E-03	22	3.30%	225	1.69E-03
7	3.79%	259	1.94E-03	15	7.01%	478	3.58E-03	23	2.46%	168	1.26E-03
8	7.76%	530	3.97E-03	16	7.14%	487	3.65E-03	24	1.87%	128	9.56E-04
								Total		6,826	

50 Almaden Offices - Offsite Residential
Cumulative Operation - Alamden Blvd
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2024

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_ALBL	Almaden Boulevard Northbound	NB	2	666.5	0.41	13.3	44	1.3	20	6,825
FUG_SB_ALBL	Almaden Boulevard Southbound	SB	2	660.4	0.41	13.3	44	1.3	20	6,825
									Total	13,650

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00219			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01734			
Road Dust - Emissions per Vehicle (g/VMT)	0.01681			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03634			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_ALBL

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	78	3.28E-04	9	7.11%	485	2.03E-03	17	7.39%	504	2.11E-03
2	0.42%	29	1.20E-04	10	4.39%	300	1.25E-03	18	8.18%	558	2.33E-03
3	0.41%	28	1.17E-04	11	4.66%	318	1.33E-03	19	5.70%	389	1.63E-03
4	0.26%	18	7.42E-05	12	5.89%	402	1.68E-03	20	4.27%	291	1.22E-03
5	0.50%	34	1.43E-04	13	6.15%	420	1.75E-03	21	3.26%	222	9.30E-04
6	0.90%	61	2.57E-04	14	6.04%	412	1.72E-03	22	3.30%	225	9.42E-04
7	3.79%	259	1.08E-03	15	7.01%	478	2.00E-03	23	2.46%	168	7.02E-04
8	7.76%	530	2.21E-03	16	7.14%	487	2.04E-03	24	1.87%	128	5.34E-04
								Total		6,826	

2024 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_ALBL

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	78	3.25E-04	9	7.11%	485	2.01E-03	17	7.39%	504	2.09E-03
2	0.42%	29	1.19E-04	10	4.39%	300	1.24E-03	18	8.18%	558	2.31E-03
3	0.41%	28	1.16E-04	11	4.66%	318	1.32E-03	19	5.70%	389	1.61E-03
4	0.26%	18	7.35E-05	12	5.89%	402	1.67E-03	20	4.27%	291	1.21E-03
5	0.50%	34	1.41E-04	13	6.15%	420	1.74E-03	21	3.26%	222	9.22E-04
6	0.90%	61	2.54E-04	14	6.04%	412	1.71E-03	22	3.30%	225	9.33E-04
7	3.79%	259	1.07E-03	15	7.01%	478	1.98E-03	23	2.46%	168	6.96E-04
8	7.76%	530	2.19E-03	16	7.14%	487	2.02E-03	24	1.87%	128	5.29E-04
								Total		6,826	

50 Almaden Offices, San Jose, CA - Almaden Blvd Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Meximum Concentrations
at Construction Cancer Risk and PM2.5 MEI Receptors

Emission Year	2024
Receptor Information	
Number of Receptors	2 at construction MEI locations
Receptor Height	9.1 meters for cancer risk & 1.5 meters for PM2.5
Receptor Distances	Construction MEI locations
Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Winf Direction	Variable

Construction Cancer Risk MEI - Maximum Concentrations

Meteorological Data Years	2023 Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0006	0.05568	0.06301

* Concentrations at construction cancer risk MEI receptor

Construction PM2.5 Concentration MEI - Maximum Concentrations

Meteorological Data Years	2023 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0565	0.05229	0.00421

* Concentrations at construction PM2.5 MEI receptor

50 Almaden Offices, San Jose, CA
Maximum DPM Cancer Risk Calculations From - Traffic Emissions on Almaden Blvd
Impacts at MEI - 9.1m Cancer Risk MEI, 1.5m PM2.5 Receptor Heights

Cancer Risk Calculation Method

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

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

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

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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2023	10	0.0006	0.0557	0.0630	0.008	0.004	0.0003	0.01
1	1	0 - 1	2023	10	0.0006	0.0557	0.0630	0.099	0.052	0.0035	0.15
2	1	1 - 2	2024	10	0.0006	0.0557	0.0630	0.099	0.052	0.0035	0.15
3	1	2 - 3	2025	3	0.0006	0.0557	0.0630	0.016	0.008	0.0005	0.02
4	1	3 - 4	2026	3	0.0006	0.0557	0.0630	0.016	0.008	0.0005	0.02
5	1	4 - 5	2027	3	0.0006	0.0557	0.0630	0.016	0.008	0.0005	0.02
6	1	5 - 6	2028	3	0.0006	0.0557	0.0630	0.016	0.008	0.0005	0.02
7	1	6 - 7	2029	3	0.0006	0.0557	0.0630	0.016	0.008	0.0005	0.02
8	1	7 - 8	2030	3	0.0006	0.0557	0.0630	0.016	0.008	0.0005	0.02
9	1	8 - 9	2031	3	0.0006	0.0557	0.0630	0.016	0.008	0.0005	0.02
10	1	9 - 10	2032	3	0.0006	0.0557	0.0630	0.016	0.008	0.0005	0.02
11	1	10 - 11	2033	3	0.0006	0.0557	0.0630	0.016	0.008	0.0005	0.02
12	1	11 - 12	2034	3	0.0006	0.0557	0.0630	0.016	0.008	0.0005	0.02
13	1	12 - 13	2035	3	0.0006	0.0557	0.0630	0.016	0.008	0.0005	0.02
14	1	13 - 14	2036	3	0.0006	0.0557	0.0630	0.016	0.008	0.0005	0.02
15	1	14 - 15	2037	3	0.0006	0.0557	0.0630	0.016	0.008	0.0005	0.02
16	1	15 - 16	2038	3	0.0006	0.0557	0.0630	0.016	0.008	0.0005	0.02
17	1	16-17	2039	1	0.0006	0.0557	0.0630	0.002	0.001	0.0001	0.003
18	1	17-18	2040	1	0.0006	0.0557	0.0630	0.002	0.001	0.0001	0.003
19	1	18-19	2041	1	0.0006	0.0557	0.0630	0.002	0.001	0.0001	0.003
20	1	19-20	2042	1	0.0006	0.0557	0.0630	0.002	0.001	0.0001	0.003
21	1	20-21	2043	1	0.0006	0.0557	0.0630	0.002	0.001	0.0001	0.003
22	1	21-22	2044	1	0.0006	0.0557	0.0630	0.002	0.001	0.0001	0.003
23	1	22-23	2045	1	0.0006	0.0557	0.0630	0.002	0.001	0.0001	0.003
24	1	23-24	2046	1	0.0006	0.0557	0.0630	0.002	0.001	0.0001	0.003
25	1	24-25	2047	1	0.0006	0.0557	0.0630	0.002	0.001	0.0001	0.003
26	1	25-26	2048	1	0.0006	0.0557	0.0630	0.002	0.001	0.0001	0.003
27	1	26-27	2049	1	0.0006	0.0557	0.0630	0.002	0.001	0.0001	0.003
28	1	27-28	2050	1	0.0006	0.0557	0.0630	0.002	0.001	0.0001	0.003
29	1	28-29	2051	1	0.0006	0.0557	0.0630	0.002	0.001	0.0001	0.003
30	1	29-30	2052	1	0.0006	0.0557	0.0630	0.002	0.001	0.0001	0.003
Total Increased Cancer Risk								0.45	0.237	0.016	**0.7**

Maximum Hazard Index	Fugitive PM2.5	Total PM2.5
0.0001	0.05	0.06

* Third trimester of pregnancy

W. Santa Clara Street Traffic Emissions and Health Risk Calculations

50 Almaden Offices - Offsite Residential
Cumulative Operation - W Santa Clara Street
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2024

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_WSC	W Santa Clara Street Eastbound	EB	2	642.2	0.40	13.3	43.7	3.4	20	10,198
DPM_WB_WSC	W Santa Clara Street Westbound	WB	2	634.3	0.39	13.3	43.7	3.4	20	10,198
									Total	20,396

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.00064			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and DPM Emissions - DPM_EB_WSC

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.90%	398	2.81E-05	9	6.42%	655	4.62E-05	17	5.62%	573	4.05E-05
2	2.58%	263	1.86E-05	10	7.34%	749	5.29E-05	18	3.27%	333	2.35E-05
3	2.87%	293	2.07E-05	11	6.42%	655	4.62E-05	19	2.35%	240	1.69E-05
4	3.32%	339	2.39E-05	12	6.88%	702	4.95E-05	20	0.86%	88	6.19E-06
5	2.18%	222	1.57E-05	13	6.25%	637	4.50E-05	21	3.09%	315	2.23E-05
6	3.38%	345	2.43E-05	14	6.19%	631	4.46E-05	22	4.13%	421	2.97E-05
7	6.02%	614	4.33E-05	15	5.10%	520	3.67E-05	23	2.52%	257	1.81E-05
8	4.64%	473	3.34E-05	16	3.78%	385	2.72E-05	24	0.92%	94	6.62E-06
								Total		10,201	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_WB_WSC

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.90%	398	2.77E-05	9	6.42%	655	4.57E-05	17	5.62%	573	4.00E-05
2	2.58%	263	1.83E-05	10	7.34%	749	5.22E-05	18	3.27%	333	2.33E-05
3	2.87%	293	2.04E-05	11	6.42%	655	4.57E-05	19	2.35%	240	1.67E-05
4	3.32%	339	2.36E-05	12	6.88%	702	4.89E-05	20	0.86%	88	6.12E-06
5	2.18%	222	1.55E-05	13	6.25%	637	4.45E-05	21	3.09%	315	2.20E-05
6	3.38%	345	2.40E-05	14	6.19%	631	4.40E-05	22	4.13%	421	2.94E-05
7	6.02%	614	4.28E-05	15	5.10%	520	3.63E-05	23	2.52%	257	1.79E-05
8	4.64%	473	3.30E-05	16	3.78%	385	2.69E-05	24	0.92%	94	6.54E-06
								Total		10,201	

50 Almaden Offices - Offsite Residential
Cumulative Operation - W Santa Clara Street
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2024

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_WSC	W Santa Clara Street Eastbound	EB	2	642.2	0.40	13.3	44	1.3	20	10,198
PM2.5_WB_WSC	W Santa Clara Street Westbound	WB	2	634.3	0.39	13.3	44	1.3	20	10,198
									Total	20,396

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.002926			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_EB_WSC

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	117	3.80E-05	9	7.11%	725	2.35E-04	17	7.39%	754	2.44E-04
2	0.42%	43	1.39E-05	10	4.39%	448	1.45E-04	18	8.18%	834	2.71E-04
3	0.41%	42	1.36E-05	11	4.66%	475	1.54E-04	19	5.70%	581	1.89E-04
4	0.26%	27	8.60E-06	12	5.89%	601	1.95E-04	20	4.27%	435	1.41E-04
5	0.50%	51	1.65E-05	13	6.15%	627	2.03E-04	21	3.26%	332	1.08E-04
6	0.90%	92	2.98E-05	14	6.04%	616	2.00E-04	22	3.30%	337	1.09E-04
7	3.79%	387	1.25E-04	15	7.01%	715	2.32E-04	23	2.46%	251	8.14E-05
8	7.76%	791	2.57E-04	16	7.14%	728	2.36E-04	24	1.87%	191	6.19E-05
								Total		10,199	

2024 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_WB_WSC

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	117	3.76E-05	9	7.11%	725	2.32E-04	17	7.39%	754	2.41E-04
2	0.42%	43	1.37E-05	10	4.39%	448	1.43E-04	18	8.18%	834	2.67E-04
3	0.41%	42	1.34E-05	11	4.66%	475	1.52E-04	19	5.70%	581	1.86E-04
4	0.26%	27	8.49E-06	12	5.89%	601	1.92E-04	20	4.27%	435	1.39E-04
5	0.50%	51	1.63E-05	13	6.15%	627	2.01E-04	21	3.26%	332	1.07E-04
6	0.90%	92	2.94E-05	14	6.04%	616	1.97E-04	22	3.30%	337	1.08E-04
7	3.79%	387	1.24E-04	15	7.01%	715	2.29E-04	23	2.46%	251	8.04E-05
8	7.76%	791	2.54E-04	16	7.14%	728	2.33E-04	24	1.87%	191	6.11E-05
								Total		10,199	

50 Almaden Offices - Offsite Residential
Cumulative Operation - W Santa Clara Street
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2024

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_WSC	W Santa Clara Street Eastbound	EB	2	642.2	0.40	13.3	44	1.3	20	10,198
TEXH_WB_WSC	W Santa Clara Street Westbound	WB	2	634.3	0.39	13.3	44	1.3	20	10,198
									Total	20,396

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.05795			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_EB_WSC

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	117	7.53E-04	9	7.11%	725	4.66E-03	17	7.39%	754	4.84E-03
2	0.42%	43	2.75E-04	10	4.39%	448	2.88E-03	18	8.18%	834	5.36E-03
3	0.41%	42	2.69E-04	11	4.66%	475	3.05E-03	19	5.70%	581	3.73E-03
4	0.26%	27	1.70E-04	12	5.89%	601	3.86E-03	20	4.27%	435	2.80E-03
5	0.50%	51	3.28E-04	13	6.15%	627	4.03E-03	21	3.26%	332	2.14E-03
6	0.90%	92	5.90E-04	14	6.04%	616	3.96E-03	22	3.30%	337	2.16E-03
7	3.79%	387	2.48E-03	15	7.01%	715	4.59E-03	23	2.46%	251	1.61E-03
8	7.76%	791	5.08E-03	16	7.14%	728	4.68E-03	24	1.87%	191	1.23E-03
								Total		10,199	

2024 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_WB_WSC

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	117	7.44E-04	9	7.11%	725	4.60E-03	17	7.39%	754	4.78E-03
2	0.42%	43	2.72E-04	10	4.39%	448	2.84E-03	18	8.18%	834	5.29E-03
3	0.41%	42	2.65E-04	11	4.66%	475	3.02E-03	19	5.70%	581	3.69E-03
4	0.26%	27	1.68E-04	12	5.89%	601	3.81E-03	20	4.27%	435	2.76E-03
5	0.50%	51	3.24E-04	13	6.15%	627	3.98E-03	21	3.26%	332	2.11E-03
6	0.90%	92	5.82E-04	14	6.04%	616	3.91E-03	22	3.30%	337	2.14E-03
7	3.79%	387	2.45E-03	15	7.01%	715	4.54E-03	23	2.46%	251	1.59E-03
8	7.76%	791	5.02E-03	16	7.14%	728	4.62E-03	24	1.87%	191	1.21E-03
								Total		10,199	

50 Almaden Offices - Offsite Residential
Cumulative Operation - W Santa Clara Street
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2024

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_WSC	W Santa Clara Street Eastbound	EB	2	642.2	0.40	13.3	44	1.3	20	10,198
TEVAP_WB_WSC	W Santa Clara Street Westbound	WB	2	634.3	0.39	13.3	44	1.3	20	10,198
									Total	20,396

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle per Hour (g/hour)	1.31461			
Emissions per Vehicle per Mile (g/VMT)	0.06573			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_EB_WSC

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	117	8.54E-04	9	7.11%	725	5.28E-03	17	7.39%	754	5.49E-03
2	0.42%	43	3.12E-04	10	4.39%	448	3.26E-03	18	8.18%	834	6.08E-03
3	0.41%	42	3.05E-04	11	4.66%	475	3.46E-03	19	5.70%	581	4.24E-03
4	0.26%	27	1.93E-04	12	5.89%	601	4.38E-03	20	4.27%	435	3.17E-03
5	0.50%	51	3.72E-04	13	6.15%	627	4.57E-03	21	3.26%	332	2.42E-03
6	0.90%	92	6.69E-04	14	6.04%	616	4.49E-03	22	3.30%	337	2.45E-03
7	3.79%	387	2.82E-03	15	7.01%	715	5.21E-03	23	2.46%	251	1.83E-03
8	7.76%	791	5.77E-03	16	7.14%	728	5.31E-03	24	1.87%	191	1.39E-03
								Total		10,199	

2024 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_WB_WSC

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	117	8.44E-04	9	7.11%	725	5.22E-03	17	7.39%	754	5.42E-03
2	0.42%	43	3.08E-04	10	4.39%	448	3.22E-03	18	8.18%	834	6.00E-03
3	0.41%	42	3.01E-04	11	4.66%	475	3.42E-03	19	5.70%	581	4.18E-03
4	0.26%	27	1.91E-04	12	5.89%	601	4.32E-03	20	4.27%	435	3.13E-03
5	0.50%	51	3.67E-04	13	6.15%	627	4.51E-03	21	3.26%	332	2.39E-03
6	0.90%	92	6.60E-04	14	6.04%	616	4.43E-03	22	3.30%	337	2.42E-03
7	3.79%	387	2.78E-03	15	7.01%	715	5.14E-03	23	2.46%	251	1.81E-03
8	7.76%	791	5.69E-03	16	7.14%	728	5.24E-03	24	1.87%	191	1.37E-03
								Total		10,199	

50 Almaden Offices - Offsite Residential
Cumulative Operation - W Santa Clara Street
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2024

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_WSC	W Santa Clara Street Eastbound	EB	2	642.2	0.40	13.3	44	1.3	20	10,198
FUG_WB_WSC	W Santa Clara Street Westbound	WB	2	634.3	0.39	13.3	44	1.3	20	10,198
									Total	20,396

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00219			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01734			
Road Dust - Emissions per Vehicle (g/VMT)	0.01681			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03634			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_EB_WSC

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	117	4.72E-04	9	7.11%	725	2.92E-03	17	7.39%	754	3.04E-03
2	0.42%	43	1.73E-04	10	4.39%	448	1.80E-03	18	8.18%	834	3.36E-03
3	0.41%	42	1.68E-04	11	4.66%	475	1.91E-03	19	5.70%	581	2.34E-03
4	0.26%	27	1.07E-04	12	5.89%	601	2.42E-03	20	4.27%	435	1.75E-03
5	0.50%	51	2.05E-04	13	6.15%	627	2.53E-03	21	3.26%	332	1.34E-03
6	0.90%	92	3.70E-04	14	6.04%	616	2.48E-03	22	3.30%	337	1.36E-03
7	3.79%	387	1.56E-03	15	7.01%	715	2.88E-03	23	2.46%	251	1.01E-03
8	7.76%	791	3.19E-03	16	7.14%	728	2.93E-03	24	1.87%	191	7.68E-04
								Total		10,199	

2024 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_WB_WSC

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	117	4.67E-04	9	7.11%	725	2.89E-03	17	7.39%	754	3.00E-03
2	0.42%	43	1.70E-04	10	4.39%	448	1.78E-03	18	8.18%	834	3.32E-03
3	0.41%	42	1.66E-04	11	4.66%	475	1.89E-03	19	5.70%	581	2.31E-03
4	0.26%	27	1.06E-04	12	5.89%	601	2.39E-03	20	4.27%	435	1.73E-03
5	0.50%	51	2.03E-04	13	6.15%	627	2.50E-03	21	3.26%	332	1.32E-03
6	0.90%	92	3.65E-04	14	6.04%	616	2.45E-03	22	3.30%	337	1.34E-03
7	3.79%	387	1.54E-03	15	7.01%	715	2.84E-03	23	2.46%	251	9.98E-04
8	7.76%	791	3.15E-03	16	7.14%	728	2.90E-03	24	1.87%	191	7.59E-04
								Total		10,199	

50 Almaden Offices, San Jose, CA - W. Santa Clara Street Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Meximum Concentrations
at Construction Cancer Risk and PM2.5 MEI Receptors

Emission Year	2024
Receptor Information	
Number of Receptors	2 at construction MEI locations
Receptor Height	9.1 meters for cancer risk & 1.5 meters for PM2.5
Receptor Distances	Construction MEI locations
Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Winf Direction	Variable

Construction Cancer Risk MEI - Maximum Concentrations

Meteorological Data Years	2023 Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.00067	0.06412	0.07281

* Concentrations at construction cancer risk MEI receptor

Construction PM2.5 Concentration MEI - Maximum Concentrations

Meteorological Data Years	2023 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.05958	0.05513	0.00445

* Concentrations at construction PM2.5 MEI receptor

50 Almaden Offices, San Jose, CA
Maximum DPM Cancer Risk Calculations From - Traffic Emissions on W. Santa Clara Street
Impacts at MEI - 9.1m Cancer Risk MEI, 1.5m PM2.5 Receptor Heights

Cancer Risk Calculation Method

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

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

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

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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2023	10	0.0007	0.0641	0.0728	0.009	0.005	0.0003	0.01
1	1	0 - 1	2023	10	0.0007	0.0641	0.0728	0.110	0.060	0.0040	0.17
2	1	1 - 2	2024	10	0.0007	0.0641	0.0728	0.110	0.060	0.0040	0.17
3	1	2 - 3	2025	3	0.0007	0.0641	0.0728	0.017	0.009	0.0006	0.03
4	1	3 - 4	2026	3	0.0007	0.0641	0.0728	0.017	0.009	0.0006	0.03
5	1	4 - 5	2027	3	0.0007	0.0641	0.0728	0.017	0.009	0.0006	0.03
6	1	5 - 6	2028	3	0.0007	0.0641	0.0728	0.017	0.009	0.0006	0.03
7	1	6 - 7	2029	3	0.0007	0.0641	0.0728	0.017	0.009	0.0006	0.03
8	1	7 - 8	2030	3	0.0007	0.0641	0.0728	0.017	0.009	0.0006	0.03
9	1	8 - 9	2031	3	0.0007	0.0641	0.0728	0.017	0.009	0.0006	0.03
10	1	9 - 10	2032	3	0.0007	0.0641	0.0728	0.017	0.009	0.0006	0.03
11	1	10 - 11	2033	3	0.0007	0.0641	0.0728	0.017	0.009	0.0006	0.03
12	1	11 - 12	2034	3	0.0007	0.0641	0.0728	0.017	0.009	0.0006	0.03
13	1	12 - 13	2035	3	0.0007	0.0641	0.0728	0.017	0.009	0.0006	0.03
14	1	13 - 14	2036	3	0.0007	0.0641	0.0728	0.017	0.009	0.0006	0.03
15	1	14 - 15	2037	3	0.0007	0.0641	0.0728	0.017	0.009	0.0006	0.03
16	1	15 - 16	2038	3	0.0007	0.0641	0.0728	0.017	0.009	0.0006	0.03
17	1	16-17	2039	1	0.0007	0.0641	0.0728	0.002	0.001	0.0001	0.003
18	1	17-18	2040	1	0.0007	0.0641	0.0728	0.002	0.001	0.0001	0.003
19	1	18-19	2041	1	0.0007	0.0641	0.0728	0.002	0.001	0.0001	0.003
20	1	19-20	2042	1	0.0007	0.0641	0.0728	0.002	0.001	0.0001	0.003
21	1	20-21	2043	1	0.0007	0.0641	0.0728	0.002	0.001	0.0001	0.003
22	1	21-22	2044	1	0.0007	0.0641	0.0728	0.002	0.001	0.0001	0.003
23	1	22-23	2045	1	0.0007	0.0641	0.0728	0.002	0.001	0.0001	0.003
24	1	23-24	2046	1	0.0007	0.0641	0.0728	0.002	0.001	0.0001	0.003
25	1	24-25	2047	1	0.0007	0.0641	0.0728	0.002	0.001	0.0001	0.003
26	1	25-26	2048	1	0.0007	0.0641	0.0728	0.002	0.001	0.0001	0.003
27	1	26-27	2049	1	0.0007	0.0641	0.0728	0.002	0.001	0.0001	0.003
28	1	27-28	2050	1	0.0007	0.0641	0.0728	0.002	0.001	0.0001	0.003
29	1	28-29	2051	1	0.0007	0.0641	0.0728	0.002	0.001	0.0001	0.003
30	1	29-30	2052	1	0.0007	0.0641	0.0728	0.002	0.001	0.0001	0.003
Total Increased Cancer Risk								0.50	0.272	0.018	**0.8**

* Third trimester of pregnancy

Maximum Hazard Index	Fugitive PM2.5	Total PM2.5
0.0001	0.06	0.06

Market Street Traffic Emissions and Health Risk Calculations

50 Almaden Offices - Offsite Residential
Cumulative Operation - Market Street
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2024

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_MRKT	Market Street Northbound	NB	2	482.3	0.30	13.3	43.7	3.4	20	7,482
DPM_SB_MRKT	Market Street Southbound	SB	2	554.2	0.34	13.3	43.7	3.4	20	7,482
									Total	14,964

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.00064			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and DPM Emissions - DPM_NB_MRKT

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.90%	292	1.55E-05	9	6.42%	480	2.55E-05	17	5.62%	420	2.23E-05
2	2.58%	193	1.02E-05	10	7.34%	549	2.91E-05	18	3.27%	245	1.30E-05
3	2.87%	215	1.14E-05	11	6.42%	480	2.55E-05	19	2.35%	176	9.32E-06
4	3.32%	248	1.32E-05	12	6.88%	515	2.73E-05	20	0.86%	64	3.41E-06
5	2.18%	163	8.65E-06	13	6.25%	468	2.48E-05	21	3.09%	231	1.23E-05
6	3.38%	253	1.34E-05	14	6.19%	463	2.46E-05	22	4.13%	309	1.64E-05
7	6.02%	450	2.39E-05	15	5.10%	382	2.02E-05	23	2.52%	189	1.00E-05
8	4.64%	347	1.84E-05	16	3.78%	283	1.50E-05	24	0.92%	69	3.65E-06
								Total		7,484	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_MRKT

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.90%	292	1.78E-05	9	6.42%	480	2.93E-05	17	5.62%	420	2.56E-05
2	2.58%	193	1.18E-05	10	7.34%	549	3.35E-05	18	3.27%	245	1.49E-05
3	2.87%	215	1.31E-05	11	6.42%	480	2.93E-05	19	2.35%	176	1.07E-05
4	3.32%	248	1.51E-05	12	6.88%	515	3.14E-05	20	0.86%	64	3.92E-06
5	2.18%	163	9.94E-06	13	6.25%	468	2.85E-05	21	3.09%	231	1.41E-05
6	3.38%	253	1.54E-05	14	6.19%	463	2.82E-05	22	4.13%	309	1.88E-05
7	6.02%	450	2.74E-05	15	5.10%	382	2.33E-05	23	2.52%	189	1.15E-05
8	4.64%	347	2.12E-05	16	3.78%	283	1.72E-05	24	0.92%	69	4.19E-06
								Total		7,484	

50 Almaden Offices - Offsite Residential
Cumulative Operation - Market Street
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2024

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_MRKT	Market Street Northbound	NB	2	482.3	0.30	13.3	44	1.3	20	7,482
PM2.5_SB_MRKT	Market Street Southbound	SB	2	554.2	0.34	13.3	44	1.3	20	7,482
									Total	14,964

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.002926			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_MRKT

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	86	2.10E-05	9	7.11%	532	1.30E-04	17	7.39%	553	1.35E-04
2	0.42%	31	7.65E-06	10	4.39%	328	8.00E-05	18	8.18%	612	1.49E-04
3	0.41%	31	7.47E-06	11	4.66%	349	8.49E-05	19	5.70%	426	1.04E-04
4	0.26%	19	4.74E-06	12	5.89%	441	1.07E-04	20	4.27%	319	7.78E-05
5	0.50%	37	9.11E-06	13	6.15%	460	1.12E-04	21	3.26%	244	5.94E-05
6	0.90%	67	1.64E-05	14	6.04%	452	1.10E-04	22	3.30%	247	6.01E-05
7	3.79%	284	6.91E-05	15	7.01%	524	1.28E-04	23	2.46%	184	4.48E-05
8	7.76%	581	1.41E-04	16	7.14%	534	1.30E-04	24	1.87%	140	3.41E-05
								Total		7,483	

2024 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_SB_MRKT

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	86	2.41E-05	9	7.11%	532	1.49E-04	17	7.39%	553	1.55E-04
2	0.42%	31	8.80E-06	10	4.39%	328	9.19E-05	18	8.18%	612	1.71E-04
3	0.41%	31	8.59E-06	11	4.66%	349	9.76E-05	19	5.70%	426	1.19E-04
4	0.26%	19	5.44E-06	12	5.89%	441	1.23E-04	20	4.27%	319	8.94E-05
5	0.50%	37	1.05E-05	13	6.15%	460	1.29E-04	21	3.26%	244	6.83E-05
6	0.90%	67	1.88E-05	14	6.04%	452	1.26E-04	22	3.30%	247	6.91E-05
7	3.79%	284	7.94E-05	15	7.01%	524	1.47E-04	23	2.46%	184	5.15E-05
8	7.76%	581	1.63E-04	16	7.14%	534	1.50E-04	24	1.87%	140	3.92E-05
								Total		7,483	

50 Almaden Offices - Offsite Residential
Cumulative Operation - Market Street
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2024

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_MRKT	Market Street Northbound	NB	2	482.3	0.30	13.3	44	1.3	20	7,482
TEXH_SB_MRKT	Market Street Southbound	SB	2	554.2	0.34	13.3	44	1.3	20	7,482
									Total	14,964

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle (g/VMT)	0.05795			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_MRKT

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	86	4.15E-04	9	7.11%	532	2.57E-03	17	7.39%	553	2.67E-03
2	0.42%	31	1.52E-04	10	4.39%	328	1.58E-03	18	8.18%	612	2.95E-03
3	0.41%	31	1.48E-04	11	4.66%	349	1.68E-03	19	5.70%	426	2.06E-03
4	0.26%	19	9.39E-05	12	5.89%	441	2.13E-03	20	4.27%	319	1.54E-03
5	0.50%	37	1.80E-04	13	6.15%	460	2.22E-03	21	3.26%	244	1.18E-03
6	0.90%	67	3.25E-04	14	6.04%	452	2.18E-03	22	3.30%	247	1.19E-03
7	3.79%	284	1.37E-03	15	7.01%	524	2.53E-03	23	2.46%	184	8.88E-04
8	7.76%	581	2.80E-03	16	7.14%	534	2.58E-03	24	1.87%	140	6.75E-04
								Total		7,483	

2024 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_MRKT

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	86	4.77E-04	9	7.11%	532	2.95E-03	17	7.39%	553	3.07E-03
2	0.42%	31	1.74E-04	10	4.39%	328	1.82E-03	18	8.18%	612	3.39E-03
3	0.41%	31	1.70E-04	11	4.66%	349	1.93E-03	19	5.70%	426	2.36E-03
4	0.26%	19	1.08E-04	12	5.89%	441	2.44E-03	20	4.27%	319	1.77E-03
5	0.50%	37	2.07E-04	13	6.15%	460	2.55E-03	21	3.26%	244	1.35E-03
6	0.90%	67	3.73E-04	14	6.04%	452	2.51E-03	22	3.30%	247	1.37E-03
7	3.79%	284	1.57E-03	15	7.01%	524	2.91E-03	23	2.46%	184	1.02E-03
8	7.76%	581	3.22E-03	16	7.14%	534	2.96E-03	24	1.87%	140	7.76E-04
								Total		7,483	

50 Almaden Offices - Offsite Residential
Cumulative Operation - Market Street
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2024

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_MRKT	Market Street Northbound	NB	2	482.3	0.30	13.3	44	1.3	20	7,482
TEVAP_SB_MRKT	Market Street Southbound	SB	2	554.2	0.34	13.3	44	1.3	20	7,482
									Total	14,964

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Emissions per Vehicle per Hour (g/hour)	1.31461			
Emissions per Vehicle per Mile (g/VMT)	0.06573			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_MRKT

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	86	4.71E-04	9	7.11%	532	2.91E-03	17	7.39%	553	3.03E-03
2	0.42%	31	1.72E-04	10	4.39%	328	1.80E-03	18	8.18%	612	3.35E-03
3	0.41%	31	1.68E-04	11	4.66%	349	1.91E-03	19	5.70%	426	2.33E-03
4	0.26%	19	1.06E-04	12	5.89%	441	2.41E-03	20	4.27%	319	1.75E-03
5	0.50%	37	2.05E-04	13	6.15%	460	2.52E-03	21	3.26%	244	1.33E-03
6	0.90%	67	3.68E-04	14	6.04%	452	2.47E-03	22	3.30%	247	1.35E-03
7	3.79%	284	1.55E-03	15	7.01%	524	2.87E-03	23	2.46%	184	1.01E-03
8	7.76%	581	3.18E-03	16	7.14%	534	2.92E-03	24	1.87%	140	7.66E-04
								Total		7,483	

2024 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_MRKT

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	86	5.41E-04	9	7.11%	532	3.34E-03	17	7.39%	553	3.48E-03
2	0.42%	31	1.98E-04	10	4.39%	328	2.07E-03	18	8.18%	612	3.85E-03
3	0.41%	31	1.93E-04	11	4.66%	349	2.19E-03	19	5.70%	426	2.68E-03
4	0.26%	19	1.22E-04	12	5.89%	441	2.77E-03	20	4.27%	319	2.01E-03
5	0.50%	37	2.35E-04	13	6.15%	460	2.89E-03	21	3.26%	244	1.53E-03
6	0.90%	67	4.23E-04	14	6.04%	452	2.84E-03	22	3.30%	247	1.55E-03
7	3.79%	284	1.78E-03	15	7.01%	524	3.30E-03	23	2.46%	184	1.16E-03
8	7.76%	581	3.65E-03	16	7.14%	534	3.36E-03	24	1.87%	140	8.80E-04
								Total		7,483	

50 Almaden Offices - Offsite Residential
Cumulative Operation - Market Street
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2024

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_MRKT	Market Street Northbound	NB	2	482.3	0.30	13.3	44	1.3	20	7,482
FUG_SB_MRKT	Market Street Southbound	SB	2	554.2	0.34	13.3	44	1.3	20	7,482
									Total	14,964

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	20			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00219			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01734			
Road Dust - Emissions per Vehicle (g/VMT)	0.01681			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03634			

Emisson Factors from CT-EMFAC2017

2024 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_MRKT

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	86	2.60E-04	9	7.11%	532	1.61E-03	17	7.39%	553	1.67E-03
2	0.42%	31	9.51E-05	10	4.39%	328	9.94E-04	18	8.18%	612	1.85E-03
3	0.41%	31	9.28E-05	11	4.66%	349	1.05E-03	19	5.70%	426	1.29E-03
4	0.26%	19	5.89E-05	12	5.89%	441	1.33E-03	20	4.27%	319	9.67E-04
5	0.50%	37	1.13E-04	13	6.15%	460	1.39E-03	21	3.26%	244	7.38E-04
6	0.90%	67	2.04E-04	14	6.04%	452	1.37E-03	22	3.30%	247	7.47E-04
7	3.79%	284	8.58E-04	15	7.01%	524	1.59E-03	23	2.46%	184	5.57E-04
8	7.76%	581	1.76E-03	16	7.14%	534	1.62E-03	24	1.87%	140	4.23E-04
								Total		7,483	

2024 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_MRKT

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	86	2.99E-04	9	7.11%	532	1.85E-03	17	7.39%	553	1.92E-03
2	0.42%	31	1.09E-04	10	4.39%	328	1.14E-03	18	8.18%	612	2.13E-03
3	0.41%	31	1.07E-04	11	4.66%	349	1.21E-03	19	5.70%	426	1.48E-03
4	0.26%	19	6.76E-05	12	5.89%	441	1.53E-03	20	4.27%	319	1.11E-03
5	0.50%	37	1.30E-04	13	6.15%	460	1.60E-03	21	3.26%	244	8.48E-04
6	0.90%	67	2.34E-04	14	6.04%	452	1.57E-03	22	3.30%	247	8.58E-04
7	3.79%	284	9.86E-04	15	7.01%	524	1.82E-03	23	2.46%	184	6.40E-04
8	7.76%	581	2.02E-03	16	7.14%	534	1.86E-03	24	1.87%	140	4.86E-04
								Total		7,483	

50 Almaden Offices, San Jose, CA - Market Street Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Meximum Concentrations
at Construction Cancer Risk and PM2.5 MEI Receptors

Emission Year	2024
Receptor Information	
Number of Receptors	2 at construction MEI locations
Receptor Height	9.1 meters for cancer risk & 1.5 meters for PM2.5
Receptor Distances	Construction MEI locations
Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Winf Direction	Variable

Construction Cancer Risk MEI - Maximum Concentrations

Meteorological Data Years	2023 Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.00021	0.01384	0.01577

* Concentrations at construction cancer risk MEI receptor

Construction PM2.5 Concentration MEI - Maximum Concentrations

Meteorological Data Years	2023 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.01371	0.01269	0.00102

* Concentrations at construction PM2.5 MEI receptor

50 Almaden Offices, San Jose, CA
Maximum DPM Cancer Risk Calculations From - Traffic Emissions on Market Street
Impacts at MEI - 9.1m Cancer Risk MEI, 1.5m PM2.5 Receptor Heights

Cancer Risk Calculation Method

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

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

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

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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

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

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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2023	10	0.0002	0.0138	0.0158	0.003	0.001	0.0001	0.00
1	1	0 - 1	2023	10	0.0002	0.0138	0.0158	0.034	0.013	0.0009	0.05
2	1	1 - 2	2024	10	0.0002	0.0138	0.0158	0.034	0.013	0.0009	0.05
3	1	2 - 3	2025	3	0.0002	0.0138	0.0158	0.005	0.002	0.0001	0.01
4	1	3 - 4	2026	3	0.0002	0.0138	0.0158	0.005	0.002	0.0001	0.01
5	1	4 - 5	2027	3	0.0002	0.0138	0.0158	0.005	0.002	0.0001	0.01
6	1	5 - 6	2028	3	0.0002	0.0138	0.0158	0.005	0.002	0.0001	0.01
7	1	6 - 7	2029	3	0.0002	0.0138	0.0158	0.005	0.002	0.0001	0.01
8	1	7 - 8	2030	3	0.0002	0.0138	0.0158	0.005	0.002	0.0001	0.01
9	1	8 - 9	2031	3	0.0002	0.0138	0.0158	0.005	0.002	0.0001	0.01
10	1	9 - 10	2032	3	0.0002	0.0138	0.0158	0.005	0.002	0.0001	0.01
11	1	10 - 11	2033	3	0.0002	0.0138	0.0158	0.005	0.002	0.0001	0.01
12	1	11 - 12	2034	3	0.0002	0.0138	0.0158	0.005	0.002	0.0001	0.01
13	1	12 - 13	2035	3	0.0002	0.0138	0.0158	0.005	0.002	0.0001	0.01
14	1	13 - 14	2036	3	0.0002	0.0138	0.0158	0.005	0.002	0.0001	0.01
15	1	14 - 15	2037	3	0.0002	0.0138	0.0158	0.005	0.002	0.0001	0.01
16	1	15 - 16	2038	3	0.0002	0.0138	0.0158	0.005	0.002	0.0001	0.01
17	1	16-17	2039	1	0.0002	0.0138	0.0158	0.001	0.000	0.0000	0.001
18	1	17-18	2040	1	0.0002	0.0138	0.0158	0.001	0.000	0.0000	0.001
19	1	18-19	2041	1	0.0002	0.0138	0.0158	0.001	0.000	0.0000	0.001
20	1	19-20	2042	1	0.0002	0.0138	0.0158	0.001	0.000	0.0000	0.001
21	1	20-21	2043	1	0.0002	0.0138	0.0158	0.001	0.000	0.0000	0.001
22	1	21-22	2044	1	0.0002	0.0138	0.0158	0.001	0.000	0.0000	0.001
23	1	22-23	2045	1	0.0002	0.0138	0.0158	0.001	0.000	0.0000	0.001
24	1	23-24	2046	1	0.0002	0.0138	0.0158	0.001	0.000	0.0000	0.001
25	1	24-25	2047	1	0.0002	0.0138	0.0158	0.001	0.000	0.0000	0.001
26	1	25-26	2048	1	0.0002	0.0138	0.0158	0.001	0.000	0.0000	0.001
27	1	26-27	2049	1	0.0002	0.0138	0.0158	0.001	0.000	0.0000	0.001
28	1	27-28	2050	1	0.0002	0.0138	0.0158	0.001	0.000	0.0000	0.001
29	1	28-29	2051	1	0.0002	0.0138	0.0158	0.001	0.000	0.0000	0.001
30	1	29-30	2052	1	0.0002	0.0138	0.0158	0.001	0.000	0.0000	0.001
Total Increased Cancer Risk								0.16	0.059	0.004	**0.2**

* Third trimester of pregnancy

Maximum Hazard Index	Fugitive PM2.5	Total PM2.5
0.0000	0.01	0.01

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	**5/15/2020**
Contact Name	Casey Divine
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x103
Email	cdivine@illingworthrodkin.com
Project Name	50 Almaden Offices
Address	50 S. Almaden Blvd
City	San Jose
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	Office
Project Size (# of units or building square feet)	640,000 SF Office and 318,000 SF Parking
Comments:	

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

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

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

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

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

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

6. Note that a small percentage of the 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.

Table B: Google Earth data

Construction MEIs

Distance from Receptor (feet) or MEI[1]	Plant No.	Facility Name	Address	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
470	12969	Verizon Business - SBEZCA	55 So Market Street	46.29	0.07	0.03		Generator		2018 Dataset	0.14	6.5	0.01	0.004
175	13528	Pacific Bell	95 So Almaden Avenue	77.15	0.13	0.10		Generator		2018 Dataset	0.50	38.6	0.07	0.05
600	14177	Pacific Gas and Electric	111 Almaden Boulevard	1.81	--	--		Generator		2018 Dataset	0.09	0.2	#VALUE!	#VALUE!
675	14687	CenturyLink Communications, LLC	55 Almaden Boulevard	1.44	--	--		Generator		2018 Dataset	0.08	0.1	#VALUE!	#VALUE!
515	14713	Verizon Business - SNJECA	55 So Almaden	1.38	--	--		Generator		2018 Dataset	0.10	0.1	#VALUE!	#VALUE!
465	14985	Wells Fargo Bank	121 Park Center Plaza	5.54	0.01	0.01		Generator		2018 Dataset	0.14	0.8	0.001	0.001
590	15169	Adobe Systems, Inc	151 Almaden Boulevard	141.55	0.11	0.18		Generator		2018 Dataset	0.09	12.7	0.01	0.02
700	19758	60 SOMA Fee Owner CA,LLC c/o Harvest Properties	60 So Market	6.34	--	0.01		Generator		2018 Dataset	0.07	0.4	#VALUE!	0.001
540	20903	CoreSite	55 So Market Street	75.09	0.07	0.11		Generator		2018 Dataset	0.10	7.5	0.01	0.01
880	22398	225 West Santa Clara LLC c/o Harvest Properties	225 W Santa Clara St	4.97	0.01	0.01		Generator		2018 Dataset	0.05	0.2	0.001	0.001
705	22415	Essex OSM Reit LLC	1 So Market Street	3.62	--	--		Generator		2018 Dataset	0.07	0.3	#VALUE!	#VALUE!
500	23214	Level 3 Communications, LLC	185 Park Center Plaza	3.78	0.01	--		Generator		2018 Dataset	0.12	0.5	0.001	#VALUE!
595	23291	KBS 111 Ten Almaden LLC	10 Almaden Boulevard	3.57	0.01	--		Generator		2018 Dataset	0.09	0.3	0.001	#VALUE!
765	23395	KBSIII Almaden Financial Plaza, LLC	1 Almaden Boulevard	9.33	0.01	0.01		Generator		2018 Dataset	0.06	0.6	0.001	0.001
980	23706	AXIS HOA	38 N Almaden Blvd	2.36	--	--		Generator		2018 Dataset	0.04	0.1	#VALUE!	#VALUE!

Footnotes:

1. Maximally exposed individual
2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.
3. Each plant may have multiple permits and sources.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. Fuel codes: 98 = diesel, 189 = Natural Gas.
6. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.
7. The date that the HRSA was completed.
8. Engineer who completed the HRSA. For District purposes only.
9. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
10. The HRSA "Chronic Health" number represents the Hazard Index.
11. Further information about common sources:
    a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
    b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of
    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
    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